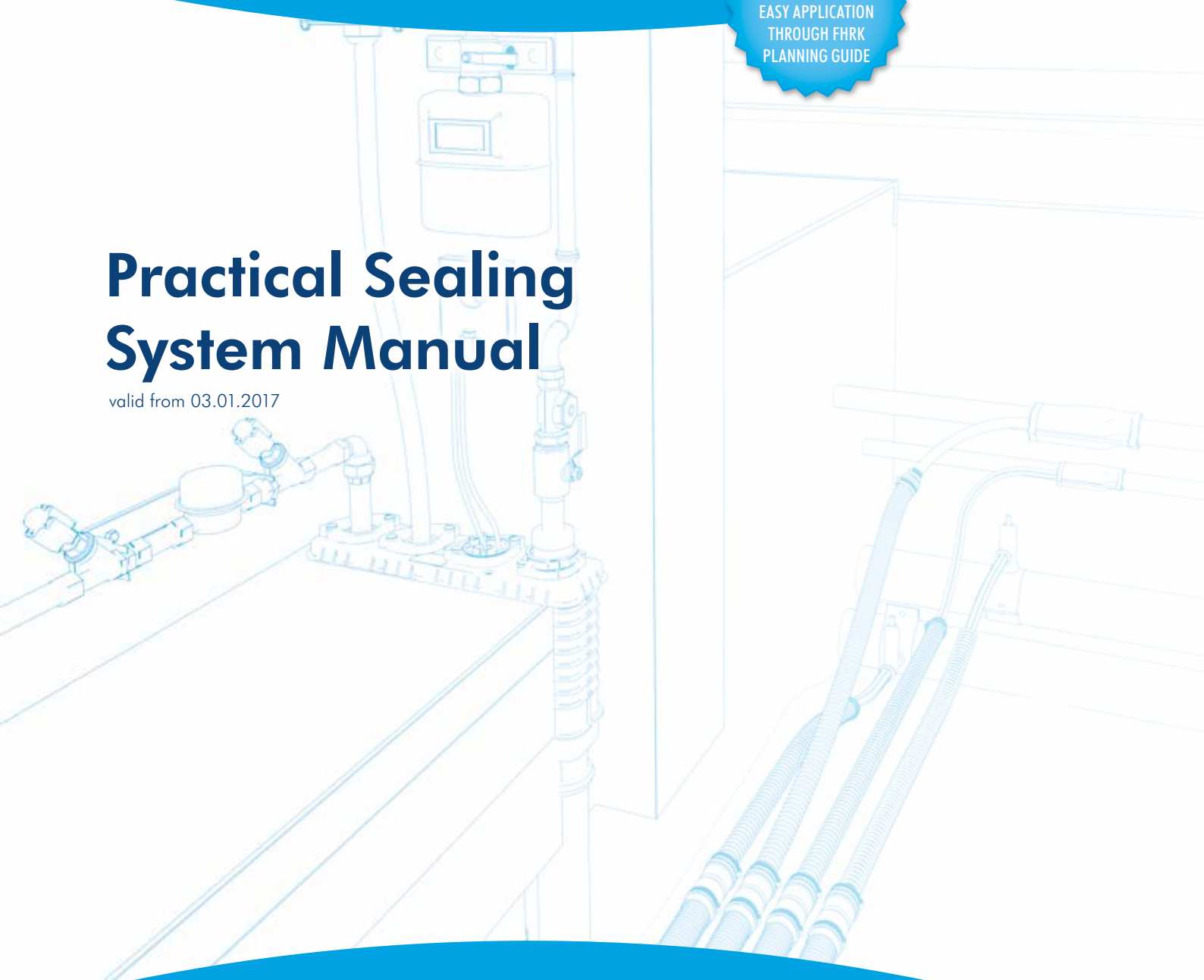
SEALING | SYSTEMS

FHRK

EASY APPLICATION THROUGH FHRK PLANNING GUIDE

Practical Sealing System Manual

valid from 03.01.2017



25 years guarantee

JUST SIMPLY SAFE. DOYMA

PREFACE

"SIMPLICITY IS THE VOLUNTARY RESTRICTION ON THE ESSENTIALS."
– Andreas Tenzer –

Dear customers,

we are highly pleased to be able to present the brand-new Practical Manual for Sealing Systems to you today. During the redesign of this tool, was on the actual benefit that can be attained for your daily work. Three main ideas have thereby inspired the work:

Simplicity - We rely on the greatly reduced visualization of known structural conditions. And then give you the most important regulatory information (using the FHRK planning aid).
Safety - We list the suitable DOYMA products - with all technical details.
Speed - We will help you to quickly achieve your goal. With the best DOYMA product recommendations.

Put us to the test! We're up to the task.
Special structural conditions may require special, constructive measures.
In the section "Special constructions" we will provide you with an overview of successfully implemented special solutions.

Knowing what you are doing - and why.
Prudent actions are based on knowledge of the generally accepted state of the art: For this reason, please refer to the chapter "Basics" for important information on the new draft of the standard DIN 18533 "Sealing of ground-touching components", as well as information regarding the federation regulations and restoration of existing buildings.

We hope to provide you with a well-founded, practice-relevant tool that will help to improve your daily work. Just one thing remains: We wish you lots of success with the Practical Manual for Sealing Systems!

Best regards

Thomas Wagner
Head of Product Management Sealing Systems
DOYMA GmbH & Co

HELP US TO GET BETTER AND BETTER! How did you perceive the Practical Manual for Sealing Systems?
And what would you wish for in the future? We are looking forward to your constructive criticism: info@doyma.de.

1. Edition, March 2017

A 06.17/MT 149-1-EN

TABLE OF CONTENTS

ALLOCATION TABLES

PIPE / CABLE DIAMETER AND DIAMETER OF CORE BORE / PIPE SLEEVE

GASKET INSERTS
Curaflex® A-F

pipe Ø from - to [mm]	DN [mm]
7 – 12	50 (49 – 53)
13 – 18	
19 – 24	
7 – 13	80 (78.5 – 83)
14 – 21	
22 – 28	
29 – 35	
36 – 40	
41 – 45	100 (98.5 – 104)
46 – 52	
53 – 57	
58 – 67	125 (123.5 – 128)
68 – 77	
78 – 85	150 (148.5 – 153)
86 – 94	
95 – 104	
105 – 115	200 (199 – 204)
116 – 124	
125 – 135	
136 – 145	
146 – 156	250 (247 – 253)
157 – 165	
166 – 172	
173 – 179	
180 – 186	
187 – 190	
191 – 197	300 (297 – 304)
198 – 207	
208 – 215	
216 – 224	
225 – 233	
234 – 240	350 (347 – 354)
241 – 249	
250 – 259	
260 – 269	
270 – 278	
279 – 288	

Pipe Ø from - to [mm]	DN [mm]
289 – 294	400* (397 – 404)
295 – 300	
301 – 306	
307 – 311	
312 – 317	
318 – 322	
323 – 327	
328 – 333	
334 – 339	
340 – 344	450* (447 – 454)
345 – 350	
351 – 356	
357 – 362	
363 – 368	
369 – 370	
371 – 375	
376 – 380	
381 – 386	500* (497 – 503)
387 – 392	
393 – 397	
398 – 403	
404 – 409	
410 – 415	
416 – 420	
421 – 425	
426 – 430	

* Allocation does not apply to Curaflex® C 40 and A 40.

GASKET INSERTS
Curaflex Nova® Uno, Uno/T, Uno/breit, Uno/breit/T

Pipe Ø from - to [mm]	DN [mm]
5 – 8	80 (79 – 83)
9 – 12	
13 – 16	
17 – 20	
21 – 24	
25 – 29	
30 – 35	
36 – 40	
5 – 8**	100 (99 – 104)
9 – 12	
13 – 16	
17 – 20	
21 – 24	
25 – 29	
30 – 35	
36 – 39	
40 – 45	
46 – 52	
53 – 57	
58 – 63	
63 – 68	150 (149 – 153)
69 – 72	
73 – 78	
79 – 84	
85 – 86	
87 – 92	
93 – 97	
98 – 104	
105 – 112	

Pipe Ø from - to [mm]	DN [mm]
108 – 112	200 (199 – 203)
113 – 118	
119 – 123	
124 – 128	
129 – 131	
132 – 135	
136 – 138	
139 – 144	
145 – 150	
151 – 153	
154 – 160	
154 – 157	250 (249 – 253)
158 – 161	
162 – 163	
164 – 169	
170 – 174	
175 – 180	
181 – 184	
185 – 189	
190 – 193	
194 – 197	
198 – 201	

** Not available in NBR.

Overview of optional sealing rubber types for Curaflex® sealing inserts

DOYMA-GRIP
Particularly non-slip and aging-resistant EPDM elastomer mixture (ethylene-propylene-diene mixture).
- very good chemical resistance, resistant to almost all acids and alkalis as well as salt water
- high mechanical strength
- optional version: Elastomer - EPDM-TW (suitable for drinking water) according to the elastomer guideline and DVGW W270

NBR (NITRILE BUTADIENE RUBBER)
- chemical resistance to oils, greases and all commercially available fuels
- NBR is an excellent seal for natural gas and city gas

SILICONE (SILICONE RUBBER)
- good ozone resistance
- high thermal loadability

FPM (FLUORO-RUBBER)
- chemical resistance to solvents, fuels, natural gas, oils, greases and aircraft fuels (Jet A1 and Jet B)

A.06.17/MT 149-1-EN

GASKET INSERTS Curaflex® C/S, A/S

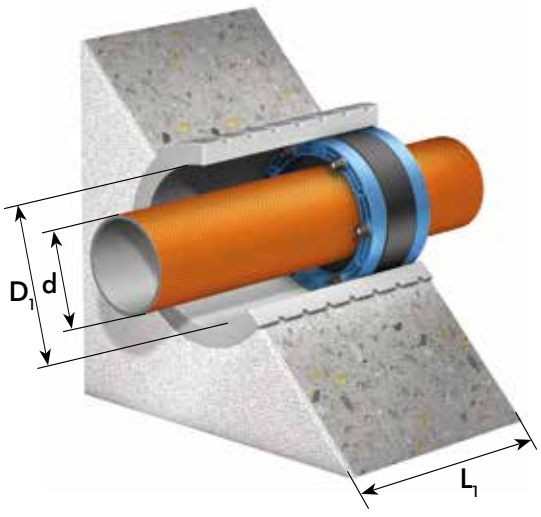
Pipe Ø from - to [mm]	DN [mm]
9 – 14	100 (98.5 – 104)
15 – 21	
22 – 28	
29 – 35	
36 – 40	
58 – 65	
40 – 48	125 (123.5 – 128)
49 – 57	
58 – 67	130 (128.5 – 133)
68 – 77	
57 – 62	150 (148.5 – 153)
63 – 70	
71 – 77	
108 – 115	
78 – 85	160 (158.5 – 163)
86 – 94	
95 – 104	
78 – 86	200 (199 – 204)
87 – 95	
96 – 104	
105 – 114	250 (247 – 253)
115 – 121	
122 – 129	
130 – 136	
137 – 145	
158 – 168	300 (297 – 304)
169 – 179	
180 – 190	

PIPE SLEEVES Curaflex® 3000

Diameter Core bore / inner diameter Pipe sleeve D_1 [DN in mm]	max. Outside diameter pipe sleeve D_2 [mm]
50	-
80	140
100	160
125	165
150	190
200	245
250	300
300	350
350	400
400	470
450	520
500	570
600	680
700	800
800	910
900	1020
1000	1130
1100	1240
1200	1350
1300	1460
1400	1570

Curaflex® PIPE SLEEVES IN COMBINATION WITH C / S, A / S

DN [mm]	Pipe diameter from - to [mm]
80	0 – 50
100	0 – 65
125	0 – 90
150	0 – 115
200	0 – 165
250	0 – 210
300	0 – 250
350	0 – 315
400	0 – 355
450	0 – 406
500	0 – 430
600	0 – 530
700	0 – 620



MAXIMUM TORQUES FOR Curaflex® GASKET INSERTS

Bolt Ø	Key width	Max. Torque values Curaflex® A – F
M 5	8	3 Nm
M 6	10	8 Nm
M 8	13	12 Nm
M 10	17	25 Nm
M 12	19	30 Nm

Bolt Ø	Key width	Max. Torque values Curaflex® A 40 / C 40
M 5	8	2 Nm
M 6	10	5 Nm
M 8	13	7 Nm
M 10	17	15 Nm
M 12	19	18 Nm

WHEN PLACING AN ORDER, PLEASE ALWAYS PROVIDE:

- the pipe / duct diameter **d**
- the core bore / pipe sleeve diameter **D_1**
- the overall length **L_1**

WE WILL GLADLY CONSULT YOU:
PHONE 04207 / 9166-300

A 06.17/MT 149-1-EN

FHRK
Professional Association for Building Services Pipe and Cable Duct Systems

FHRK PLANNING AID

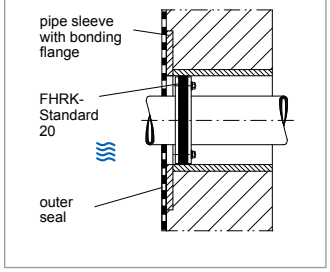
SELECTION CRITERIA FOR BUILDING ENTRIES

THE FOLLOWING EXPLANATIONS RELATE TO GERMAN STANDARDS. WE WILL GLADLY ANSWER ANY QUESTIONS YOU MAY HAVE REGARDING THE COMPLIANCE WITH OTHER REGULATIONS/NATIONAL STANDARDS.

1 WALL / FLOOR SLAB MADE OF CONCRETE OR MASONRY WITH AN OUTER SEAL ACCORDING TO DIN 18195 - PART 4

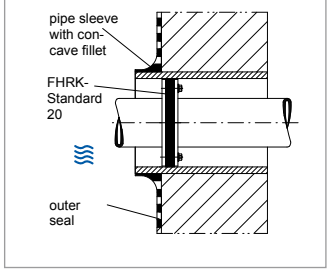
LOAD CASE MOISTURE OF GROUND AND NON-ACCUMULATING LEAKING WATER

1.1



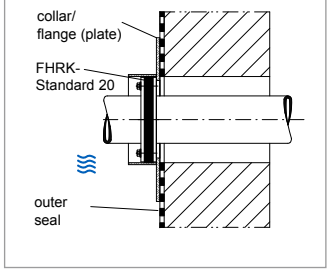
Wall entry routing, masonry / concrete wall with adhesive / weld-on flange

1.2



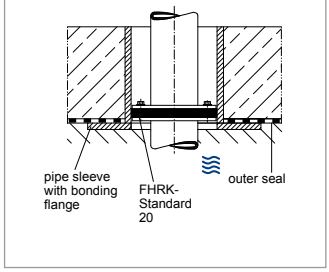
Wall entry routing, masonry / concrete wall with pipe sleeve

1.3



Wall entry routing, masonry / concrete wall with flange plate

1.4

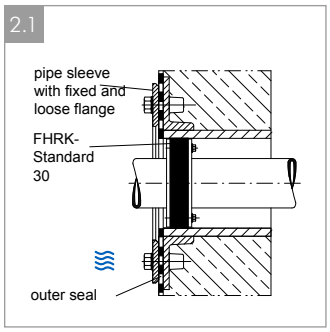


Ground inlet routing pipe sleeve with adhesive / weld-on flange

2 WALL / FLOOR SLAB MADE OF CONCRETE WITH AN OUTER SEAL ACCORDING TO DIN 18195 - PART 6

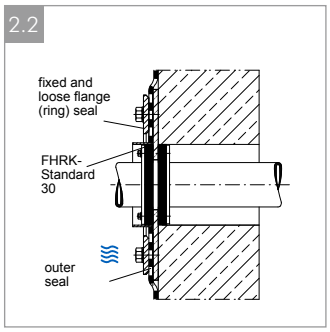
LOAD CASE ACCUMULATING SEEPAGE WATER AND PRESSING WATER

2.1



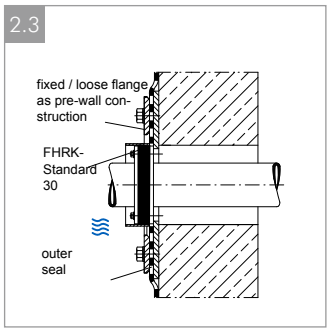
Wall entry concrete wall, pipe sleeve with fixed / loose flange

2.2



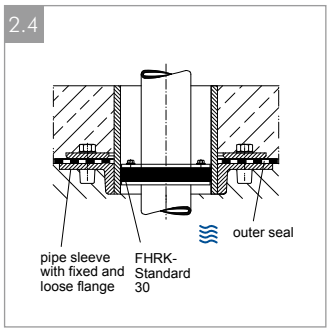
Wall entry, concrete wall with core bore and fixed / loose flange as annular chamber seal

2.3



Wall entry routing, concrete wall, core bore with fixed / loose flange as pre-wall construction

2.4

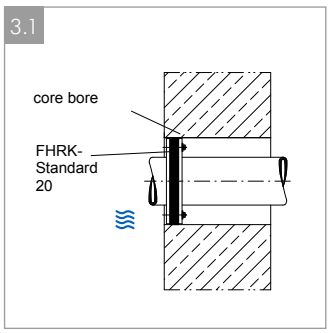


Ground inlet routing, fixed / loose flange with pipe sleeve

3 WALL / FLOOR SLAB MADE OF WP-CONCRETE - LOOD CLASS 2 (WATERPROOF CONCRETE)

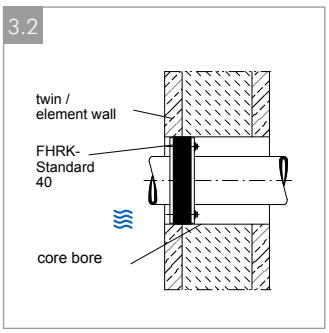
LOAD CASE MOISTURE OF GROUND AND NON-ACCUMULATING LEAKING WATER

3.1



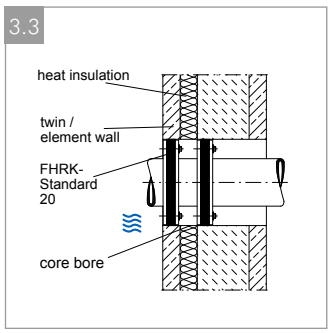
Wall entry routing concrete wall with core bore

3.2



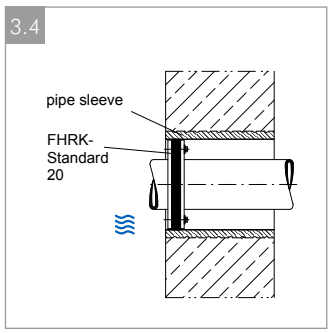
Wall entry routing Twin / element wall with core bore

3.3



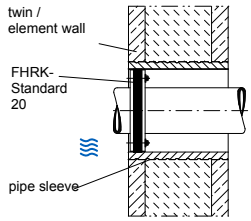
Wall entry routing Twin / element wall with heat insulation and core bore

3.4



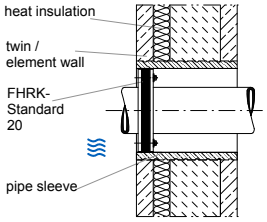
Wall entry routing concrete wall with pipe sleeve

3.5



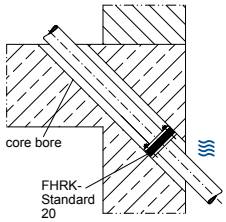
Wall entry routing
Twin / element wall with pipe sleeve

3.6



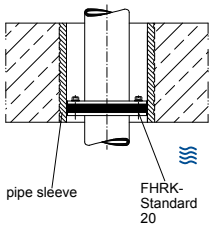
Wall entry routing
Twin / element wall with heat insulation and pipe sleeve

3.7



Ground inlet routing
with core bore

3.8

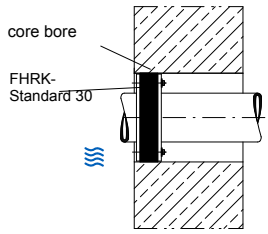


Ground inlet routing
with pipe sleeve

4 WALL / FLOOR SLAB MADE OF WP-CONCRETE - LOOD CLASS 1 (WATERPROOF CONCRETE)

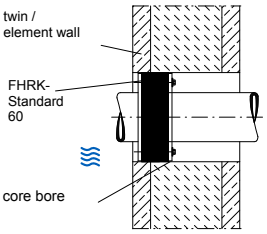
LOAD CASE ACCUMULATING SEEPAGE WATER AND PRESSING WATER

4.1



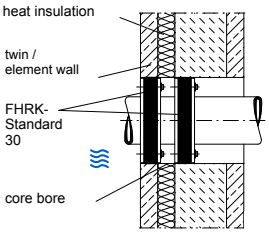
Wall entry routing
WP concrete wall with core bore

4.2



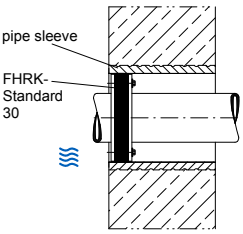
Wall entry routing
WP Twin / element wall with core bore

4.3



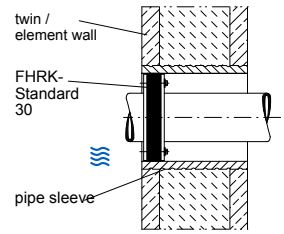
Wall entry routing
WP Twin / element wall with heat insulation and core bore

4.4



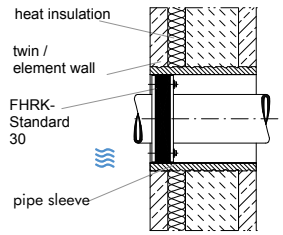
Wall entry routing
WP concrete wall with pipe sleeve

4.5



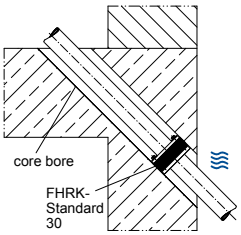
Wall entry routing
WP Twin / element wall with pipe sleeve

4.6



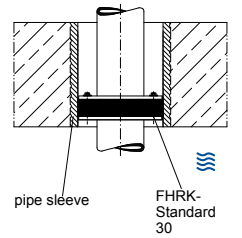
Wall entry routing
WP Twin / element wall with heat insulation and pipe sleeve

4.7



Ground inlet routing
WP floor slab with core bore

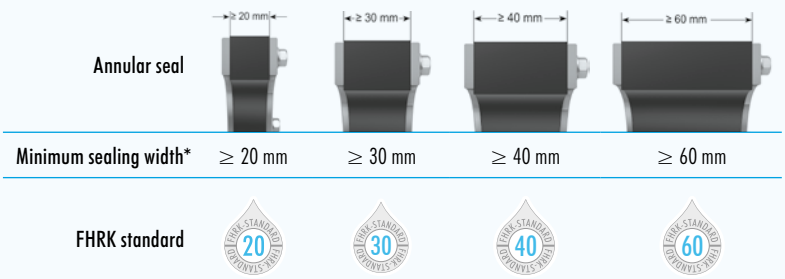
4.8



Ground inlet routing
WP floor slab with pipe sleeve

FHRK STANDARD

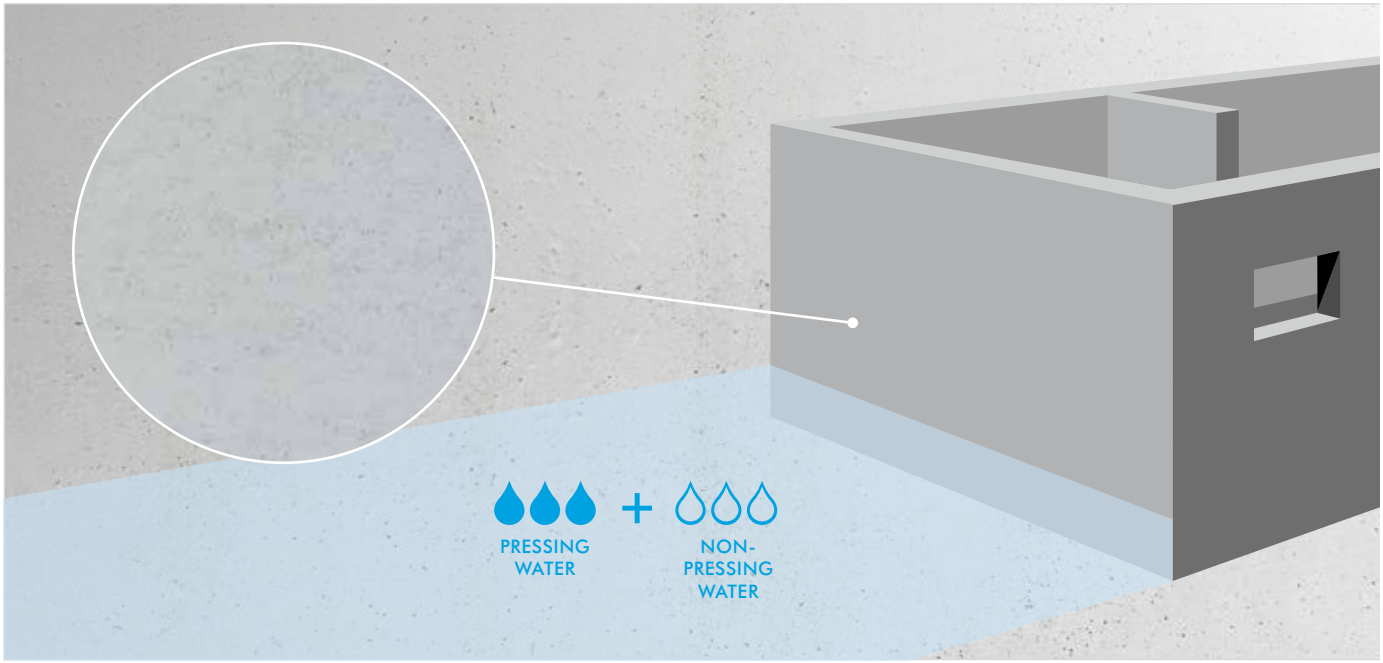
CORRESPONDING TO THE LOAD CASE (MOISTURE LOAD), A SUFFICIENT SEALING WIDTH IS REQUIRED. THE TABLE VALUES APPLY AS THE MINIMUM SEALING WIDTH FOR ANNULAR SEALS ACCORDING TO THE FHRK STANDARD.



* Special types of lines or installation situations may be required for larger sealing widths.

WHITE TANK - SITE OR READY-MIXED CONCRETE

STRUCTURES OR BUILDING PARTS MADE OF WATERPROOF CONCRETE (WP CONCRETE)



CONTROL REQUIREMENT

According to the DAfStb Guideline-Watertight Structures of Concrete (WP-Guideline) of the German Committee for Reinforced Concrete, penetrations, adapted to the load case, must be designed to be watertight as planned with systems which are coordinated with each other.

It is advisable to install pipe sleeves. In addition, the sealing system can also be installed in a core bore. The pre-cut reinforced steel must be protected against corrosion (for example, through coating).

The building should be penetrated at right angles along the shortest possible path. The type of penetration has to be adapted to the design of the penetrating line.

The sealing system must be positioned on the water-facing side. If this is not possible, pipe sleeves or watertight coatings of the core bore wall must be provided.

PLANNING GUIDE

WALL		
Load class 2	20	Drawings: 3.1 + 3.4 *
Load class 1	30	Drawings: 4.1 + 4.4 *
FLOOR SLAB		
Load class 2	20	Drawings: 3.7 + 3.8 *
Load class 1	30	Drawings: 4.7 + 4.8 *

* see page 6 + 7

A 06.17/MT 149-1-EN

PRODUCT GUIDE

GASKET-INSERTS	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
♢♢♢ Load class 2 / FHRK standard 20		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® A, A/S, B
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In A
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® A 40
			•			Curaflex® A/M	48	-
			•	•		Curaflex® A/M/T	49	-
	•					Curaflex Nova® Uno/0	31	Curaflex® A/0
♦♦♦ Load class 1 / FHRK standard 30		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® C, C/S, F, D
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In C
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® C 40
			•			Curaflex® C/M	39	-
			•	•		Curaflex® C/M/T	40	-
	•					Curaflex Nova® Uno/0	31	Curaflex® C/0

PIPE PIPES	Version / installation		Recommendation	
	in the wall	in front of the wall	Product	Infos [page]
♢♢♢ + ♦♦♦ Load class 2+1	•		Curaflex® 3000	55
	•		Curaflex® 9000	56
		•	Curaflex® 8000	57

LINKED CHAINS	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
♢♢♢ + ♦♦♦ Load class 2+1 / FHRK standard 20+30	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

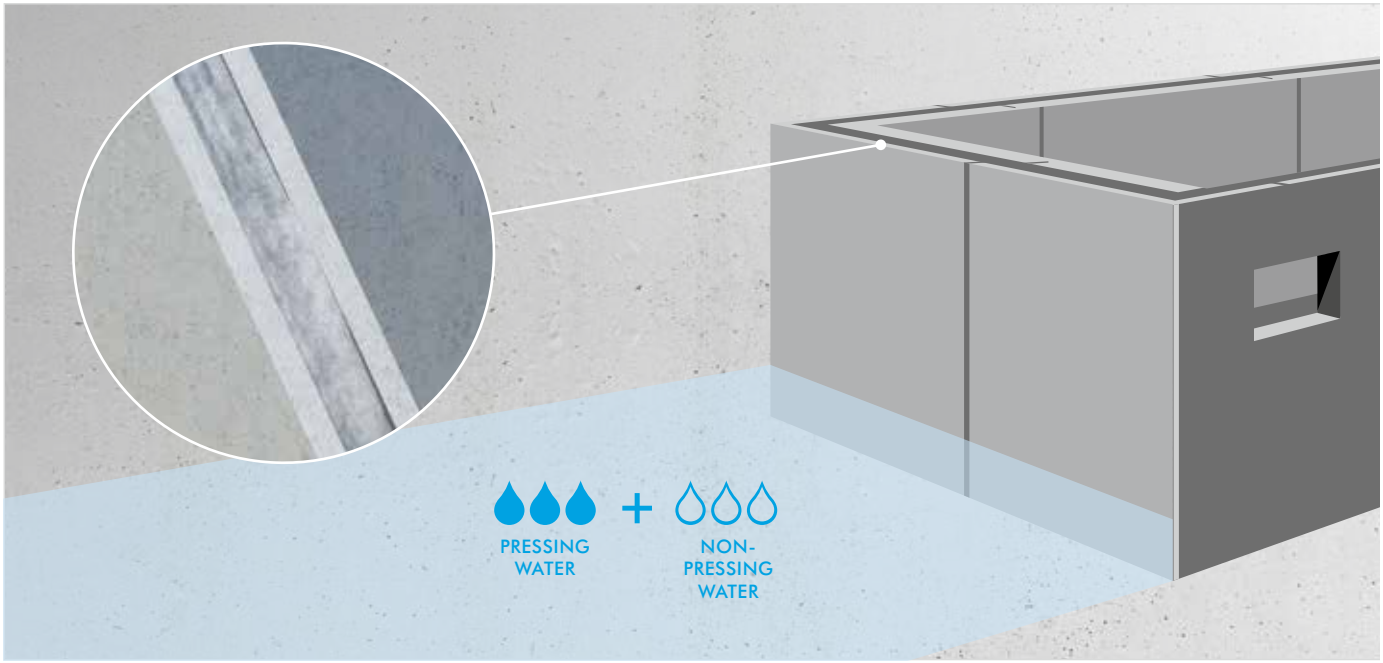
BUILDING SERVICES DUCT SYSTEM	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E2	98	Quadro-Secura® E-S
		•	Quadro-Secura® Nova 2	86	Quadro-Secura® Nova 2-M, 2-FW
WITHOUT A BASEMENT BUILDING	•		Quadro-Secura® E-BP	107	Quadro-Secura® SD
		•	Quadro-Secura® Basic R4+	105	Quadro-Secura® Nova BP+ , Basic R2, R3, R5

ACCESSORIES	Product	Infos [page]
	Aquagard Primer (1710/1711), Aquagard special paint (1715/1716)	67
	Curaflex® formwork fastener (1701)	70
	Curaflex® Sealing plug (1702)	71
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74
	Curaflex® ring closure RRV	72
	Curaflex® Sealing ring (1708)	73

* for already existing pipes | ** e.g. for cable protection pipes, pre-insulated plastic pipes

WHITE TANK - TWIN / ELEMENT WALLS

STRUCTURES OR BUILDING PARTS MADE OF WATERPROOF CONCRETE (WP CONCRETE)



CONTROL REQUIREMENT

According to the DAfStb Guideline-Watertight Structures of Concrete (WP-Guideline) of the German Committee for Reinforced Concrete, penetrations, adapted to the load case, must be designed to be watertight as planned with systems which are coordinated with each other.

When penetrating element walls, the systems for the sealing must be positioned in the relevant sealing layer. The position must be indicated by the manufacturer of the element wall. If in doubt, use sealing systems wducts sealing surfaces bridge all possible sealing layers.

It is advisable to install pipe sleeves. In addition, the sealing system can also be installed in a core bore. The pre-cut reinforced steel must be protected against corrosion (for example, through coating).

The building should be penetrated at right angles along the shortest possible path. The type of penetration has to be adapted to the design of the penetrating line.

The sealing system must be positioned on the water-facing side. If this is not possible, pipe sleeves or watertight coatings of the core bore wall must be provided.

PLANNING GUIDE

WALL		
Load class 2	40	Drawing: 3.2 *
	20 + 20	Drawing: 3.3 *
	20	Drawings: 3.5 + 3.6 *
Load class 1	60	Drawing: 4.2 *
	30 + 30	Drawing: 4.3 *
	30	Drawings: 4.5 + 4.6 *

* see page 6 + 7

A 06.17/MT 149-1-EN

PRODUCT GUIDE

GASKET-INSERTS	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
◊◊◊ Load class 2 FHRK standard 20		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® A, A/S, B
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In A
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® A 40
			•			Curaflex® A/M	48	-
			•	•		Curaflex® A/M/T	49	-
	•					Curaflex Nova® Uno/0	31	Curaflex® A/0
◊◊◊ Load class 2 FHRK standard 40		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® A 40
		•		•		Curaflex Nova® Uno/T	30	-
					•	Curaflex Nova® Senso	33	Curaflex® A 40
			•			Curaflex® C/M	39	-
			•	•		Curaflex® C/M/T	40	-
	•					Curaflex Nova® Uno/0	31	-
◆◆◆ Load class 1 FHRK standard 30		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® C, C/S, F, D
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In C
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® C 40
			•			Curaflex® C/M	39	-
			•	•		Curaflex® C/M/T	40	-
	•					Curaflex Nova® Uno/0	31	Curaflex® C/0
◆◆◆ Load class 1 FHRK standard 60		•				Curaflex Nova® Uno/breit	32	Curaflex® C 40
		•		•		Curaflex Nova® Uno/breit/T	32	-
					•	Curaflex Nova® Uno/breit	32	Curaflex® C 40
			•			Special solution	-	-
			•	•		Special solution	-	-
	•					Special solution	-	-

PIPE PIPES	Version / installation		Recommendation	
	in the wall	in front of the wall	Product	Infos [page]
◊◊◊ + ◆◆◆ Load class 2+1	•		Curaflex® 3000	55
	•		Curaflex® 9000	56

LINKED CHAINS	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
◊◊◊ + ◆◆◆ Load class 2+1 FHRK-Standard 20, 30, 40, 60 [1)]	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

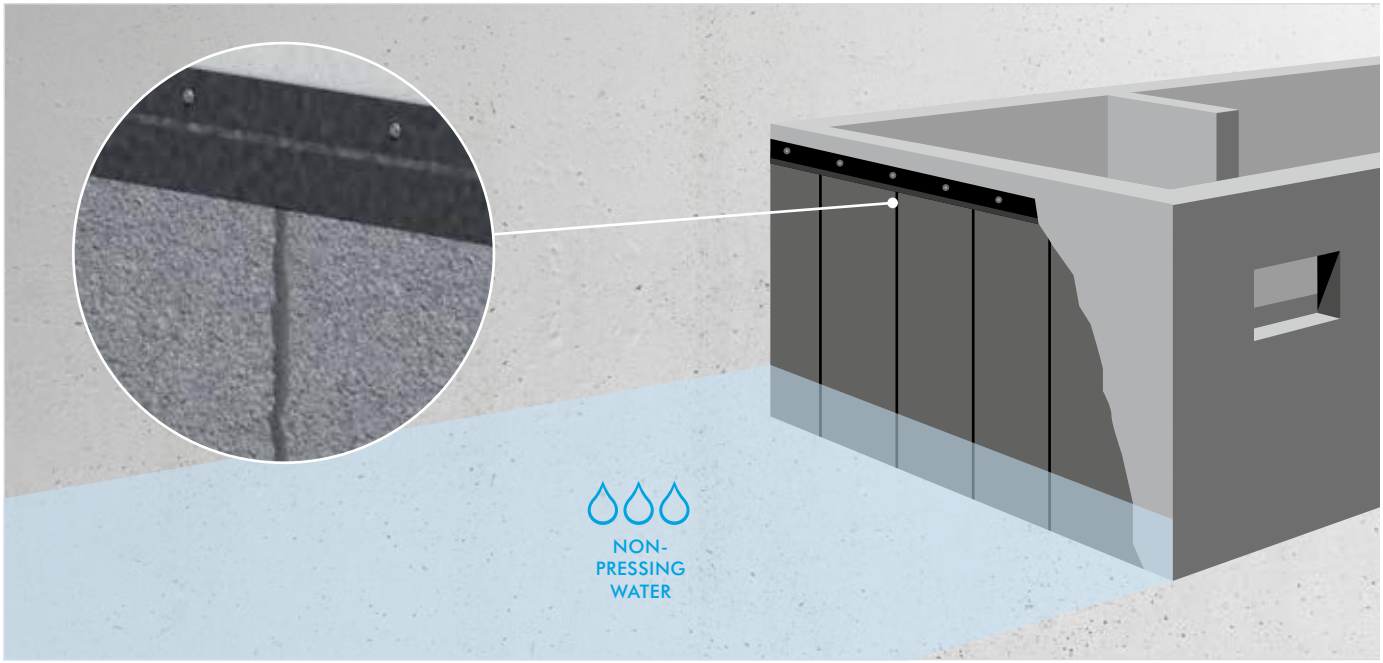
BUILDING SERVICES DUCT SYSTEM	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E2/breit	98	-
		•	Quadro-Secura® Nova 2/breit	87	Quadro-Secura® Nova 2-FW/breit

ACCESSORIES	Product	Infos [page]
	Aquagard Primer (1710/1711), Aquagard special paint (1715/1716)	67
	Curaflex® formwork fastener (1701)	70
	Epoxy resin coating (1745)	74
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74

* for already existing pipes | ** e.g. for cable protection pipes, pre-insulated plastic pipes | [1)] only for module sizes >= LS 300

BLACK TANK - SEALING MEMBRANE FOR W1-E

STRUCTURES OR STRUCTURE PARTS WITH A SEAL IN ACCORDANCE WITH E DIN 18533-2 - WITH SEALING MEMBRANE / FOR WATER EFFECT CLASS W1-E (SOIL MOISTURE AND NON-PRESSING WATER)



CONTROL REQUIREMENT

The sealing of non-watertight earthworks or structures has been regulated since 1983 by the DIN 18195 part 1 to 10. The replacement will be expected shortly by DIN 18533 part 1 to 3, which was published as a draft in December 2015.

The use of pipe sleeves is recommended to enable a clear allocation of responsibilities. If the wall is constructed as a masonry wall, a pipe sleeve must be used.

Multi-line routings should be used for lines. The building should be penetrated at right angles along the shortest possible path. The type of penetration has to be adapted to the design of the penetrating line.

Sealing strips must be connected to earth-bearing structural parts either with a bonding flange, weld-on flange, with a cuff and clamp or materials to be processed in liquid form.

The outer edges of the built-in parts should normally be at least 15 cm away from other building components, building edges and building fillets, and at least 30 cm from building joints. For loose and fixed flanged constructions the distance should be at least 30 cm away from other building components, building edges and building fillets, and at least 50 cm from building joints. If these distances cannot be adhered to, special constructions must be planned.

In the case of a single-layered seal, an admixture of at least 2 mm thick of the same material or compatible elastomer is required on both sides of the tanking membrane. In the case of a correspondingly hard sealing path, packings must be provided in the same way.

PLANNING GUIDE

WALL		
W1-E (Load case 4)		Drawings: 1.1 + 1.3 *
FLOOR SLAB / CEILING		
W1-E (Load case 4+5)		Drawing: 1.4 *

* see page 6 + 7

A 06.17/MT 149-1-EN

PRODUCT GUIDE

GASKET-INSERTS [1]	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
W1-E (Load case 4+5) FHRK-Standard 20		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® A, A/S, B
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In A
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® A 40
			•			Curaflex® A/M	48	-
			•	•		Curaflex® A/M/T	49	-
	•					Curaflex Nova® Uno/0	31	Curaflex® A/0

GASKET-INSERTS [2]	Number of lines / execution					Recommendation	
	without	one	several	split version*	sensitive**	Product	Infos [page]
W1-E (Load case 4+5) FHRK-Standard 20		•				Curaflex® C/2/SD/5	53
		•				Curaflex® F/2/SD/5	53

PIPE PIPES	Version	Recommendation	
		Product	Infos [page]
W1-E (Load case 4+5)	bonding flange	Curaflex® 3001	66
	Loose and fixed flange	Curaflex® 4005 [3], 5000 [3], 7005	63 – 65
	Loose and fixed flange with middle flange	Curaflex® 5.5002 [3]	64

LINKED CHAINS [1]	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
W1-E (Load case 4+5) FHRK standard 20	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

BUILDING SERVICES DUCT SYSTEM [1]	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
WITH A BASEMENT BUILDING	•		Quadro-Secura® E2	98	Quadro-Secura® E-S
		•	Quadro-Secura® Nova 2	86	Quadro-Secura® Nova 2-M, Nova 2-FW

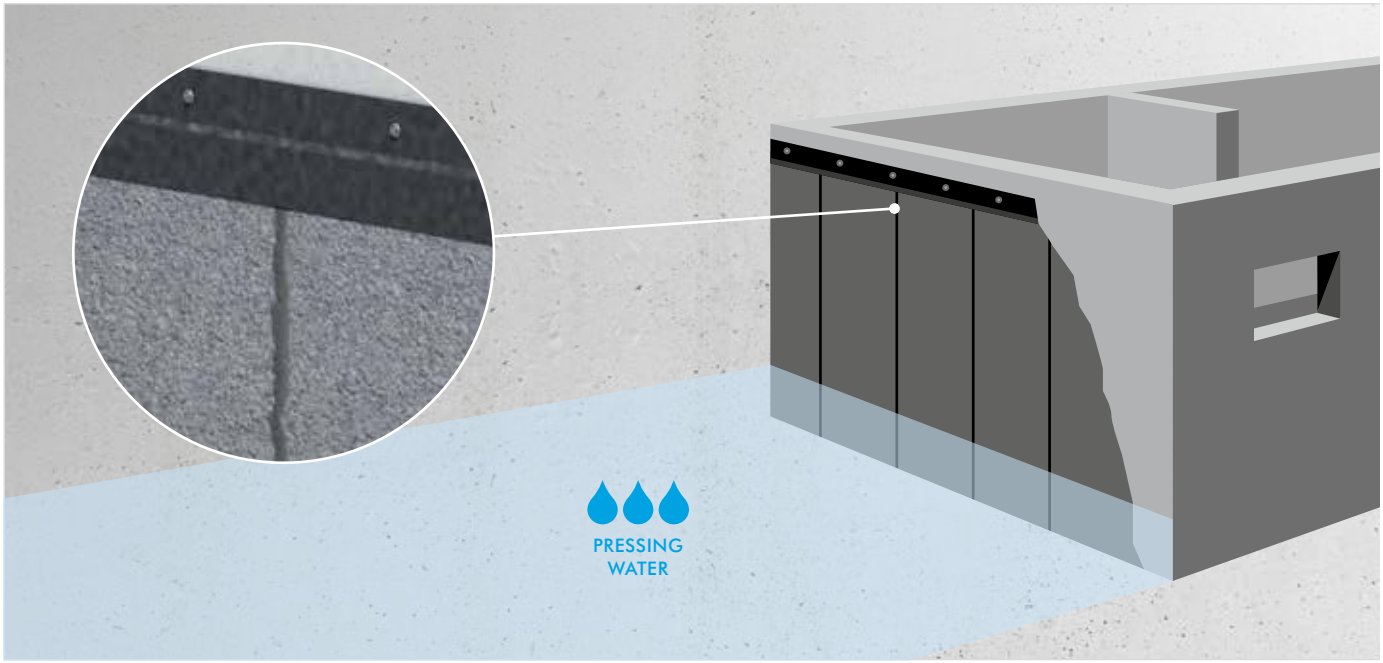
BUILDING SERVICES DUCT SYSTEM [2]	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E1	97	Quadro-Secura® E1/breit [4]
		•	Quadro-Secura® Nova 1	84	Quadro-Secura® Nova 1/breit [4], 1-M, 1-FW
WITHOUT A BASEMENT BUILDING	•		Special solution	-	-
		•	Special solution	-	-

ACCESSORIES	Product	Infos [page]
	Curaflex® packings (1775)	68
	Curaflex® formwork fastener (1701)	70
	Curaflex® Sealing plug (1702)	71
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74

* for already existing pipes | ** for cable protection pipes, pre-insulated plastic pipes | [1] only in combination with a pipe sleeve | [2] without separate pipe sleeve | [3] For floor slabs, if necessary, with the flange turned over, if the seal is under the sole. | [4] in combination with twin / element walls

BLACK TANK - SEALING MEMBRANE FOR W2-E

STRUCTURES OR BUILDING PARTS WITH A SEAL ACCORDING TO E DIN 18533-2
(PRESSING WATER)



CONTROL REQUIREMENT

The sealing of non-watertight earthworks or structures has been regulated since 1983 by the DIN 18195 part 1 to 10. The replacement will be expected shortly by DIN 18533 part 1 to 3, which was published as a draft in December 2015.

The use of pipe sleeves is recommended to enable a clear allocation of responsibilities. If the wall is constructed as a masonry wall, a pipe sleeve must be used.

Multi-line routings should be used for lines. The building should be penetrated at right angles along the shortest possible path. The type of penetration has to be adapted to the design of the penetrating line.

Penetrations can be carried out with loose and fixed flange constructions, or tested building services duct systems (test pressure 1 bar). The latter must have a sealing flange with a width ≥ 30 mm. A prerequisite for this is a flat and solid wall and sealing surface in the area of the sealing flange. In order to compensate masonry unevenness, a corresponding flange can be required as a sealing subsoil, as well as a pipe sleeve can also be required system-dependent.
The outer edges of the built-in parts should normally be at least 30 cm away from other building components, building edges and building fillets, and at least 50 cm from building joints. If these distances cannot be adhered to, special constructions must be planned.

In the case of a correspondingly hard sealing membrane, an admixture of at least 2 mm thickness of the same material or material-compatible Elastomer is required on both sides of the tanking membrane.

PLANNING GUIDE

WALL		
W2-E (Load case 6)		Drawings: 2.1 + 2.2 + 2.3 *
FLOOR SLAB / CEILING		
W2-E (Load case 6)		Drawing: 2.4 *

* see page 6 + 7

A 06.17/MT 149-1-EN

PRODUCT GUIDE

GASKET-INSERTS [1]	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
W2-E (Load case 6) FHRK standard 30		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® C, C/S, F, D
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In C
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® C 40
			•			•	39	-
			•	•		Curaflex® C/M/T	40	-
	•					Curaflex Nova® Uno/0	31	Curaflex® C/0

GASKET-INSERTS [2]	Number of lines / execution					Recommendation	
	without	one	several	split version*	sensitive**	Product	Infos [page]
W2-E (Load case 6) FHRK-Standard 30		•				Curaflex® C/2/SD/6	44
		•				Curaflex® F/2/SD/6	44

PIPE PIPES	Version	Recommendation	
		Product	Infos [page]
W2-E (Load case 6)	Loose and fixed flange	Curaflex® 4006 [3], 6000 [3]	59, 60
	Loose and fixed flange with middle flange	Curaflex® 6.6002 [3]	60
	Pre-wall construction with loose and fixed flange	Curaflex® 7006, 7006/T, 7006/M/S	61, 62

LINKED CHAINS [1]	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
W2-E (Load case 6) FHRK standard 30	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

BUILDING SERVICES DUCT SYSTEM [1]	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E2	98	Quadro-Secura® E-S
		•	Quadro-Secura® Nova 2	86	Quadro-Secura® Nova 2-M, Nova 2-FW

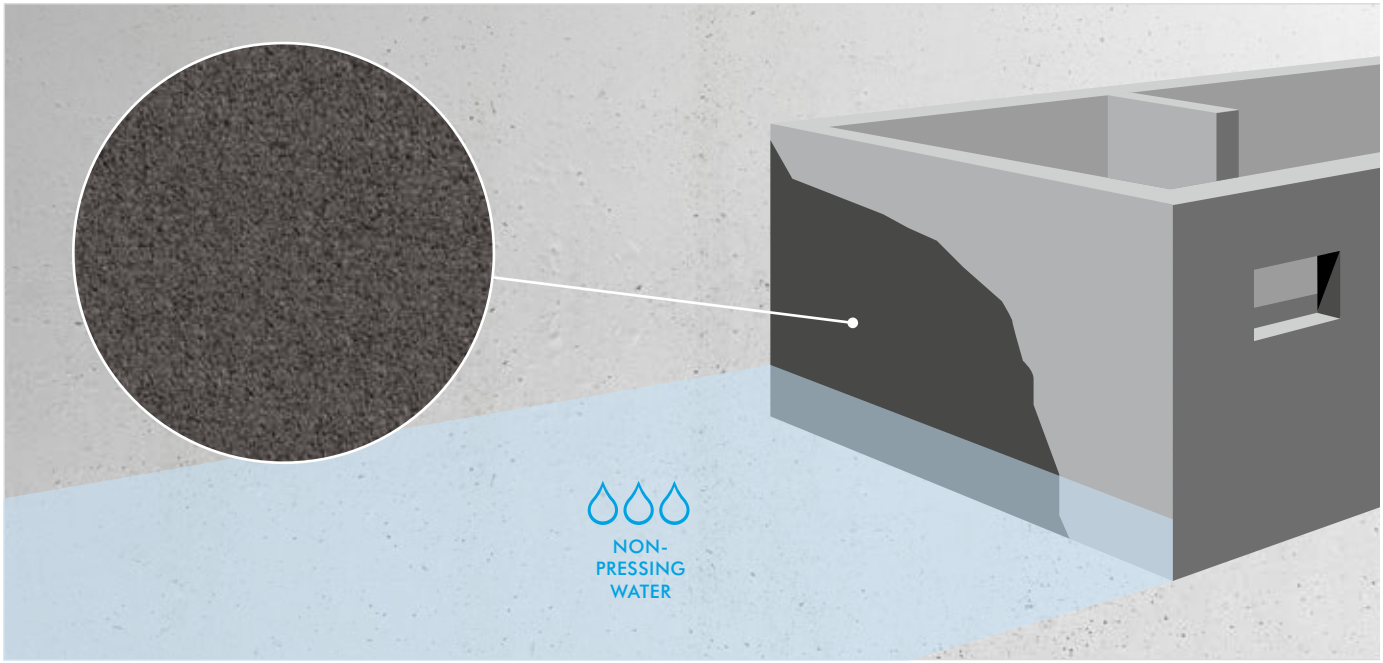
BUILDING SERVICES DUCT SYSTEM [2]	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E1	97	Quadro-Secura® E1/breit [4]
		•	Quadro-Secura® Nova 1	84	Quadro-Secura® Nova 1/breit [4], 1-M, 1-FW
WITHOUT A BASEMENT BUILDING	•		Special solution	-	-
		•	Special solution	-	-

ACCESSORIES	Product	Infos [page]
	Curaflex® packings (1775)	68
	Curaflex® formwork fastener (1701)	70
	Curaflex® Sealing plug (1702)	71
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74
	Curaflex® ring closure RRV	72
	Curaflex® Sealing ring (1708)	73

* for already existing pipes | ** for cable protection pipes, pre-insulated plastic pipes | [1] only in combination with a pipe sleeve | [2] without separate pipe sleeve | [3] For floor slabs, if necessary, with the flange turned over, if the seal is under the sole. | [4] in combination with twin / element walls

BLACK TANK - PLASTIC-MODIFIED BITUMEN COATING FOR W1-E

STRUCTURES OR STRUCTURE PARTS WITH A SEAL IN ACCORDANCE WITH E DIN 18533-3 - WITH KMB/PMBC (SOIL MOISTURE AND NON-PRESSING WATER)



CONTROL REQUIREMENT

The sealing of non-watertight earthworks or structures has been regulated since 1983 by the DIN 18195 part 1 to 10. The replacement will be expected shortly by DIN 18533 part 1 to 3, which was published as a draft in December 2015.

The use of pipe sleeves is recommended to enable a clear allocation of responsibilities. If the wall is constructed as a masonry wall, a pipe sleeve must be used.

Multi-line routings should be used for lines. The building should be penetrated at right angles along the shortest possible path. The type of penetration has to be adapted to the design of the penetrating line.

The KMB/PMBC must be connected to pipe sleeves with an bonding flange with a flange width of at least 5 cm. In order to obtain sufficient adhesion, the surface of the bonding flange must be suitable. The KMB/PMBC must be fitted with a reinforcing insert at least in the width of the bonding flange.
The outer edges of the built-in parts should normally be at least 15 cm away from other building components, building edges and building fillets, and at least 30 cm from building joints. For loose and fixed flanged constructions the distance should be at least 30 cm away from other building components, building edges and building fillets, and at least 50 cm from building joints. If these distances cannot be adhered to, special constructions must be planned.

In the case of plastic-modified bitumen coating (KMB/PMBC), a bitumen compatibility of the materials used must be checked beforehand.

PLANNING GUIDE

WALL		
W1-E (Load case 4)		Drawings: 1.1 + 1.2 + 1.3 *
FLOOR SLAB / CEILING		
W1-E (Load case 4+5)		Drawing: 1.4 *

* see page 6 + 7

A 06.17/MT 149-1-EN

PRODUCT GUIDE

GASKET-INSERTS [1]	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
W1-E (Load case 4+5) FHRK-Standard 20		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® A, A/S, B
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In A
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® A 40
			•			Curaflex® A/M	48	-
			•	•		Curaflex® A/M/T	49	-
	•					Curaflex Nova® Uno/0	31	Curaflex® A/0

GASKET-INSERTS [2]	Number of lines / execution					Recommendation	
	without	one	several	split version*	sensitive**	Product	Infos [page]
W1-E (Load case 4+5) FHRK-Standard 20		•				Curaflex® C/2/SD/5 + sanded + accessories (1776)	53, 69
		•				Curaflex® F/2/SD/5 + sanded + accessories (1776)	53, 69

PIPE PIPES	Version	Recommendation	
		Product	Infos [page]
W1-E (Load case 4+5)	bonding flange	Curaflex® 3001	66
	Loose and fixed flange	Curaflex® 4005 [3] [5], 5000 [3], 7005 + sanded + accessories (1776)	63 – 65, 69
	Flange plate	Curaflex® 8000 + sanded	57
	Flange plate	Curaflex® 8000 with butyl sealing tape (1753)	58

LINKED CHAINS [1]	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
W1-E (Load case 4+5) FHRK standard 20	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

BUILDING SERVICES DUCT SYSTEM [1]	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E2	98	Quadro-Secura® E-S
		•	Quadro-Secura® Nova 2	86	Quadro-Secura® Nova 2-M, Nova 2-FW

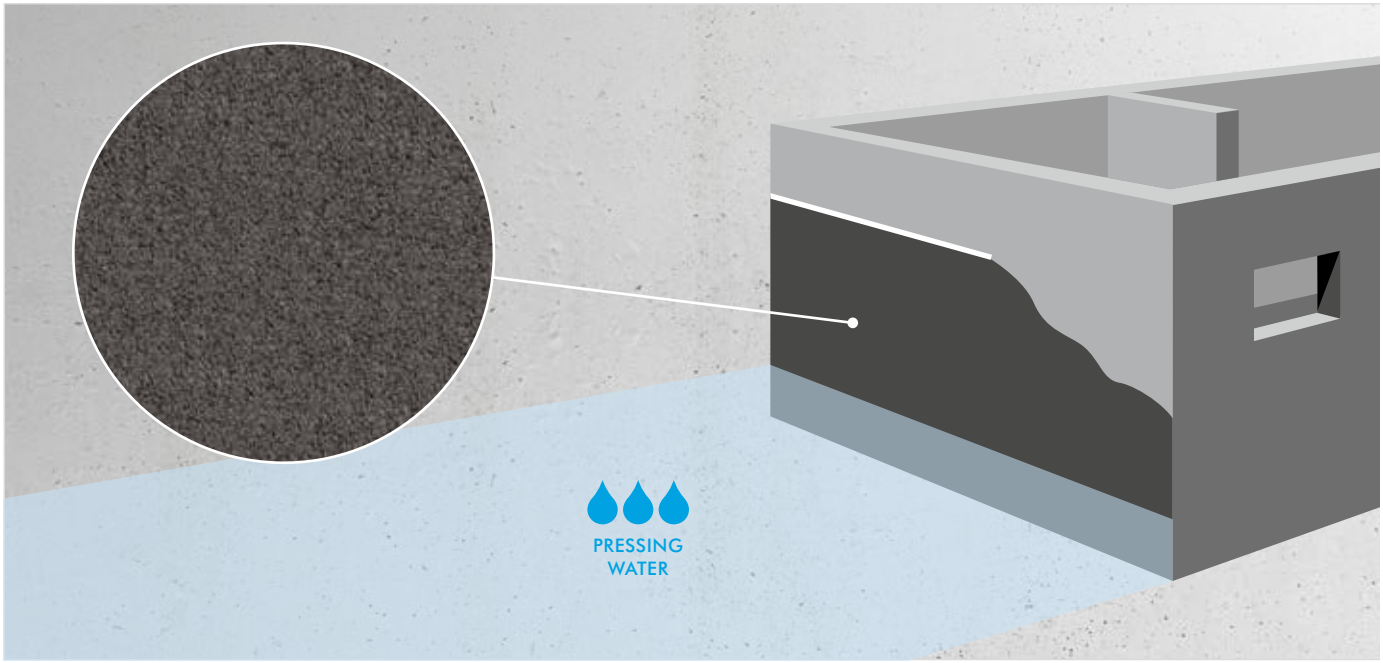
BUILDING SERVICES DUCT SYSTEM [2]	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E1	97	Quadro-Secura® E1/breit [4]
		•	Quadro-Secura® Nova 1	84	Quadro-Secura® Nova 1/breit [4], 1-M, 1-FW

ACCESSORIES	Product	Infos [page]
	Accessory set for thick coating (1776)	69
	Curaflex® formwork fastener (1701)	70
	Curaflex® Sealing plug (1702)	71
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74

* for already existing pipes | ** for cable protection pipes, pre-insulated plastic pipes | [1] only in combination with a pipe sleeve | [2] without separate pipe sleeve | [3] For floor slabs, if necessary, with the flange turned over, if the seal is under the sole. | [4] in combination with twin / element walls | [5] "sanded" version is not required

BLACK TANK - PLASTIC-MODIFIED BITUMEN COATING FOR W2.1-E

STRUCTURES OR STRUCTURE PARTS WITH A SEAL IN ACCORDANCE WITH E DIN 18533-3 - WITH KMB/PMBC (PRESSING WATER)



CONTROL REQUIREMENT

The sealing of non-watertight earthworks or structures has been regulated since 1983 by the DIN 18195 part 1 to 10. The replacement will be expected shortly by DIN 18533 part 1 to 3, which was published as a draft in December 2015.

The use of pipe sleeves is recommended to enable a clear allocation of responsibilities. If the wall is constructed as a masonry wall, a pipe sleeve must be used.

Multi-line routings should be used for lines. The building should be penetrated at right angles along the shortest possible path. The type of penetration has to be adapted to the design of the penetrating line.

Connections at penetrations can be established according to DIN 18533-1 with a bonding flange (≥120 mm flange width), with building services duct systems with a sealing flange (≥30 mm), or a loose and fixed flange design. The latter is to be constructed as follows: The contact surfaces of the loose and fixed flanges must be designed in such a way as to prevent the PMBC from slipping off, through suitable measures (e.g. sanding).
In the area of the fixed flange, the PMBC is to be established with an increased dry film thickness of 5 mm. After the PMBC has dried out, ensure that a gap of 4 mm (minimum dry film thickness) between the loose and the fixed flange is established after tightening the loose flange. The tightness on the spacers must be ensured by appropriate measures (e.g. O-rings).

The outer edges of the built-in parts should normally be at least 30 cm away from other building components, building edges and building fillets, and at least 50 cm from building joints. If these distances cannot be adhered, special constructions must be planned.

PLANNING GUIDE

WALL		
W2.1-E (Load case 6)		Drawings: 2.1 + 2.2 + 2.3 *
FLOOR SLAB / CEILING		
W2.1-E (Load case 6)		Drawing: 2.4 *

* see page 6 + 7

A 06.17/MT 149-1-EN

PRODUCT GUIDE

GASKET-INSERTS [1]	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
W2.1-E (Load case 6) FHRK-Standard 30		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® C, C/S, F, D
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In C
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® C 40
			•			Curaflex® C/M	39	-
			•	•		Curaflex® C/M/T	40	-
	•					Curaflex Nova® Uno/0	31	Curaflex® C/0

GASKET-INSERTS [2]	Number of lines / execution					Recommendation	
	without	one	several	split version*	sensitive**	Product	Infos [page]
W2.1-E (Load case 6) FHRK-Standard 30		•				Curaflex® C/2/SD/6 + sanded + accessories (1776)	44, 69
		•				Curaflex® F/2/SD/6 + sanded + accessories (1776)	44, 69

PIPE PIPES	Version	Recommendation	
		Product	Infos [page]
W2.1-E (Load case 6)	bonding flange	Curaflex® 3001	66
	Loose and fixed flange	Curaflex® 4006 [3] [5], 6000 [3] + sanded + accessories (1776)	59, 60, 69
	Pre-wall construction with loose and fixed flange	Curaflex® 7006, 7006/T, 7006/M/S + sanded + accessories (1776)	61, 62, 69

LINKED CHAINS [1]	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
W2.1-E (Load case 6) FHRK-Standard 30	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

BUILDING SERVICES DUCT SYSTEM [1]	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E2	98	Quadro-Secura® E-S
		•	Quadro-Secura® Nova 2	86	Quadro-Secura® Nova 2-M, Nova 2-FW

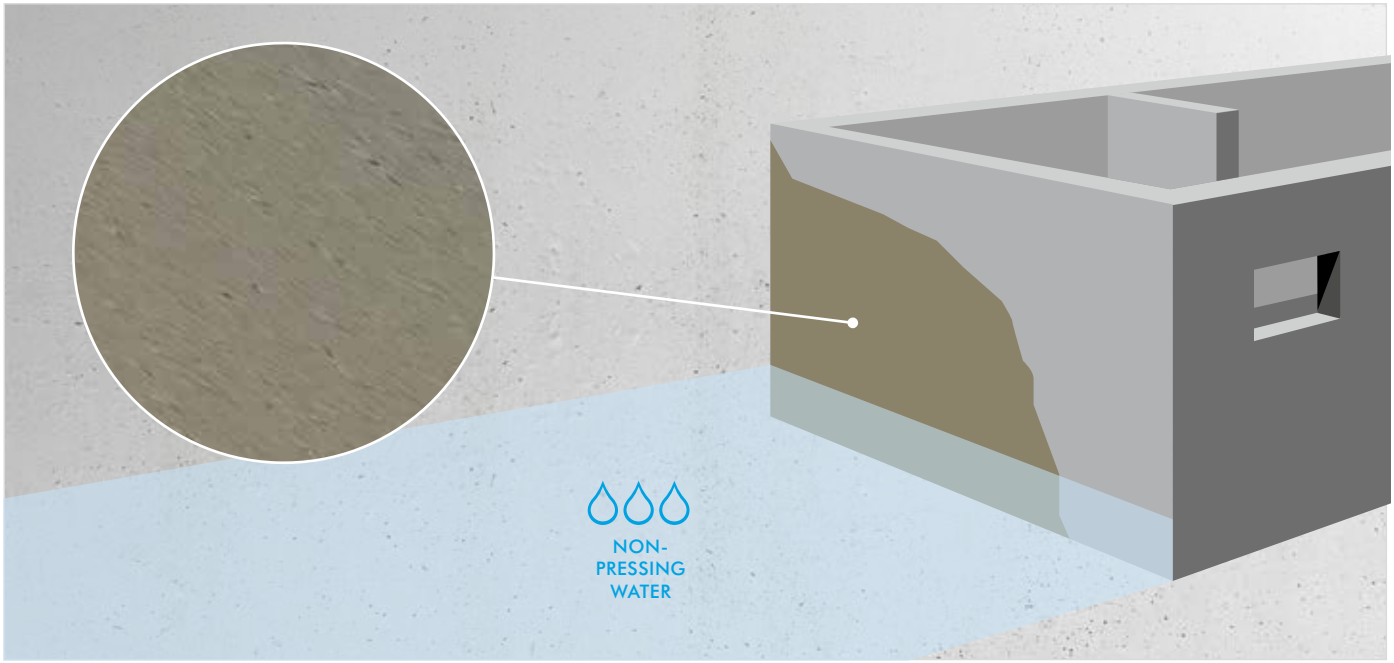
BUILDING SERVICES DUCT SYSTEM [2]	Version		Recommendation		
	One devision	Multi-division	TOP RECOMMENDATION	Infos [page]	Further products
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E1	97	Quadro-Secura® E1/breit [4]
		•	Quadro-Secura® Nova 1	84	Quadro-Secura® Nova 1/breit [4], 1-M, 1-FW
WITHOUT A BASEMENT BUILDING	•		Special solution	-	-
		•	Special solution	-	-

ACCESSORIES	Product	Infos [page]
	Accessory set for thick coating (1776)	69
	Curaflex® formwork fastener (1701)	70
	Curaflex® Sealing plug (1702)	71
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74

* for already existing pipes | ** for cable protection pipes, pre-insulated plastic pipes | [1] only in combination with a pipe sleeve | [2] without separate pipe sleeve | [3] For floor slabs, if necessary, with the flange turned over, if the seal is under the sole. | [4] in combination with twin / element walls | [5] "sanded" version is not required

BLACK TANK - CRACK-BRIDGING MINERAL SEALING SLUDGE FOR W1-E

STRUCTURES OR STRUCTURE PARTS WITH A SEAL IN ACCORDANCE WITH E DIN 18533-3 - WITH MDS (SOIL MOISTURE AND NON-PRESSING WATER)



CONTROL REQUIREMENT

The sealing of non-watertight earthworks or structures has been regulated since 1983 by the DIN 18195 part 1 to 10. The replacement will be expected shortly by DIN 18533 part 1 to 3, which was published as a draft in December 2015.

The use of pipe sleeves is recommended to enable a clear allocation of responsibilities. If the wall is constructed as a masonry wall, a pipe sleeve must be used.
Multi-line routings should be used for lines. The building should be penetrated at right angles along the shortest possible path. The type of penetration has to be adapted to the design of the penetrating line.

The MDS must be connected to pipe sleeves with a bonding flange with a flange width of at least 50 mm. In order to achieve sufficient adhesion to the bonding flange, the surface must be appropriately suitable.

The outer edges of the built-in parts should normally be at least 15 cm away from other building components, building edges and building fillets, and at least 30 cm from building joints. If these distances cannot be adhered, special constructions must be planned.

Sealing slurries (MDS) may be highly alkaline. Here, the compatibility of the materials used must be checked in advance.

PLANNING GUIDE

WALL		
W1-E (Load case 4)		Drawings: 1.1 + 1.3 *
FLOOR SLAB / CEILING		
W1-E (Load case 4)		Drawing: 1.4 *

* see page 6 + 7

PRODUCT GUIDE

GASKET-INSERTS [1]	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
W1-E (Load case 4) FHRK-Standard 20		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® A, A/S, B
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In A
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® A 40
			•			Curaflex® A/M	48	-
			•	•		Curaflex® A/M/T	49	-
	•					Curaflex Nova® Uno/0	31	Curaflex® A/0

PIPE PIPES	Version	Recommendation	
		Product	Infos [page]
W1-E (Load case 4)	bonding flange	Curaflex® 3001	66
	Flange plate	Curaflex® 8000 with butyl sealing tape (1753)	58

LINKED CHAINS [1]	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
W1-E (Load case 4) FHRK standard 20	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

BUILDING SERVICES DUCT SYSTEM [1]	Version		Recommendation	
	One devision	Multi-division	Product	Infos [page]
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E2	98
		•	Quadro-Secura® Nova 2	86
		•	Quadro-Secura® Nova 2-M, Nova 2-FW	90, 96

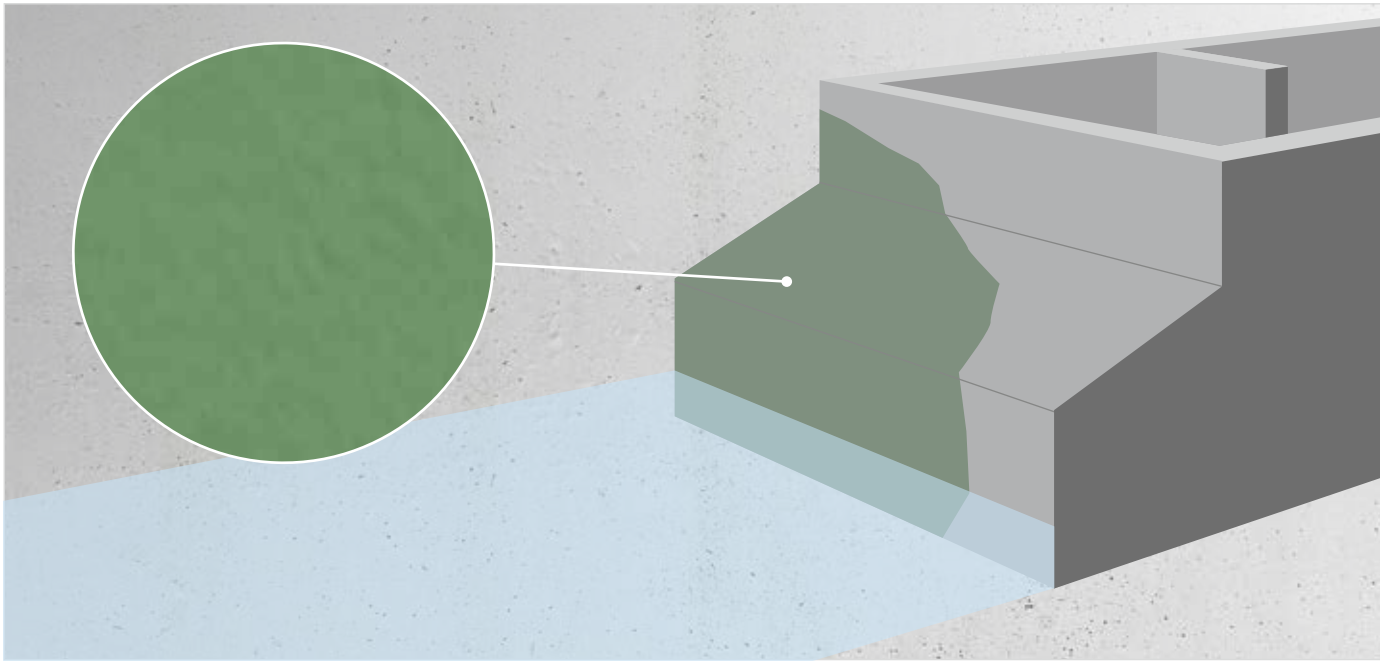
ACCESSORIES	Product	Infos [page]
	Curaflex® formwork fastener (1701)	70
	Curaflex® Sealing plug (1702)	71
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74
	Curaflex® ring closure RRV	72
	Curaflex® Sealing ring (1708)	73

A 06.17/MT 149-1-EN

* for already existing pipes | [1] only in combination with a pipe sleeve | [2] without separate pipe sleeve | [3] For floor slabs, if necessary, with the flange turned over, if the seal is under the sole. | [4] in combination with twin / element walls

BLACK TANK - LIQUID PLASTICS WITH W3-E

STRUCTURES OR BUILDING PARTS WITH A SEAL ACCORDING TO E DIN 18533-3 - WITH FLK
(NON-PRESSING WATER ON GROUND-COVERED CEILING)



CONTROL REQUIREMENT

The sealing of non-watertight earth-touching building parts has been regulated since 1983 by DIN 18195 part 1 to 10. The replacement will be expected shortly by DIN 18533 part 1 to 3, which was published as a draft in December 2015.

The use of pipe sleeves is recommended to enable a clear allocation of responsibilities. If the wall is constructed as a masonry wall, a pipe sleeve must be used.

For multi-line routings should be used for lines. The building should be penetrated at right angles along the shortest possible path. The type of penetration has to be adapted to the design of the penetrating line.

The FLK must be connected to pipe sleeves with a bonding flange with a flange width of at least 50 mm. In order to achieve sufficient adhesion to the bonding flange, the surface must be appropriately suitable.

The outer edges of the built-in parts should normally be at least 15 cm away from other building components, building edges and building fillets, and at least 30 cm from building joints. If these distances cannot be adhered, special constructions must be planned.

PLANNING GUIDE

WALL		
W3-E (Load case 5)		Drawings: 1.1 + 1.3 *
FLOOR SLAB / CEILING		
W3-E (Load case 5)		Drawing: 1.4 *

* see page 6 + 7

A 06.17/MT 149-1-EN

PRODUCT GUIDE

GASKET-INSERTS [1]	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
W3-E (Load case 5) FHRK-Standard 20		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® A, A/S, B
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In A
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® A 40
			•			Curaflex® A/M	48	-
			•	•		Curaflex® A/M/T	49	-
	•					Curaflex Nova® Uno/0	31	Curaflex® A/0

PIPE PIPES	Version	Recommendation	
		Product	Infos [page]
W3-E (Load case 5)	bonding flange	Curaflex® 3001	66
	Flange plate	Curaflex® 8000 with butyl sealing tape (1753)	58

LINKED CHAINS [1]	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
W3-E (Load case 5) FHRK standard 20	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

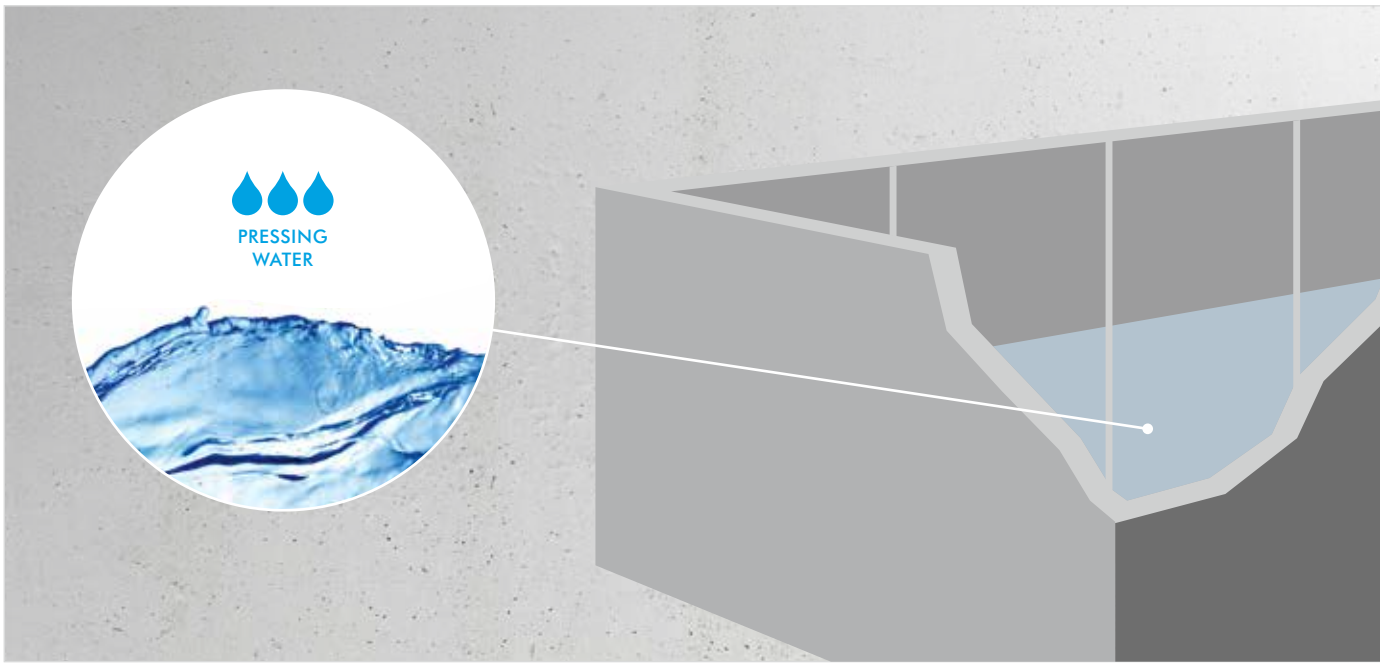
BUILDING SERVICES DUCT SYSTEM [1]	Version		Recommendation	
	One devision	Multi-division	Product	Infos [page]
BUILDINGS WITH A BASEMENT BUILDING	•		Quadro-Secura® E2	98
		•	Quadro-Secura® Nova 2	86
		•	Quadro-Secura® Nova 2-M, Nova 2-FW	90, 96

ACCESSORIES	Product	Infos [page]
	Curaflex® formwork fastener (1701)	70
	Curaflex® Sealing plug (1702)	71
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74
	Curaflex® ring closure RRV	72
	Curaflex® Sealing ring (1708)	73

* for already existing pipes | ** for example, for cable protection pipes, pre-insulated plastic pipes | [1] only in combination with a pipe sleeve | [2] without separate pipe sleeve | [3] For floor slabs, if necessary, with the flange turned over, if the seal is under the sole. | [4] in combination with twin / element walls

CONTAINERS AND BASINS

TANKS AND BASINS WITH A SEAL ACCORDING TO E DIN 18535 / FOR WATER EFFECT CLASS W1-B TO W3-B



CONTROL REQUIREMENT

The sealing of tanks and basins has been regulated since 1983 by DIN 18195 part 1 to 10. The replacement will be expected shortly by DIN 18535 part 1 to 3, which was published as a draft in June 2015.

The use of pipe sleeves is recommended to enable a clear allocation of responsibilities. If the wall is constructed as a masonry wall, a pipe sleeve must be used.

Multi-line routings should be used for lines. The building should be pene

Water effect class / fill height	
W1-B	<= 5 m
W2-B	<= 10 m
W3-B	> 10 m

trated at right angles along the shortest possible path. The type of penetration has to be adapted to the design of the penetrating line.

Connections of strip-shaped sealing materials are to be carried out with loose and fixed flange designs according to E DIN 18535 part 2.

Connections of sealing compounds to be processed in liquid form are carried out by means of adhesive or loose flange constructions with a flange width of ≥ 50 mm. In the area of the flange connection, a reinforcing insert is to be incorporated according to the specifications of the sealing material. The reinforcing insert must be an integral part of the abP, and the corresponding listed one must be used.

The outer edges of the built-in parts should normally be at least 30 cm away from other building components, building edges and building fillets. If these distances cannot be adhered to, special constructions must be planned.

In the case of a single-layered seal, an admixture of at least 2 mm thick of the same material or compatible elastomer is required on both sides of the tanking membrane. In the case of a correspondingly hard sealing path, packings must be provided in the same way.

A.06.17/MT 149-1-EN

PRODUCT GUIDE

GASKET-INSERTS [1]	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
W1-B to W3-B (Load case 7)		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® C, C/S, F, D
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In C
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® C 40
			•			Curaflex® C/M	39	-
			•	•		Curaflex® C/M/T	40	-
	•					Curaflex Nova® Uno/0	31	Curaflex® C/0

GASKET-INSERTS [2]	Number of lines / execution					Recommendation	
	without	one	several	split version*	sensitive**	Product	Infos [page]
W1-B to W3-B (Load case 7)		•				Curaflex® C/2/SD/6 [5]	44
		•				Curaflex® F/2/SD/6 [5]	44

PIPE PIPES	Version	Recommendation	
		Product	Infos [page]
W1-B to W3-B (Load case 7)	bonding flange	Curaflex® 3001 [6]	66
	Loose and fixed flange	Curaflex® 4006 [3] [5], 6000 [3] [5]	59, 60
	Pre-wall construction with loose and fixed flange	Curaflex® 7006 [5], 7006/T [5], 7006/M/S [5]	61, 62

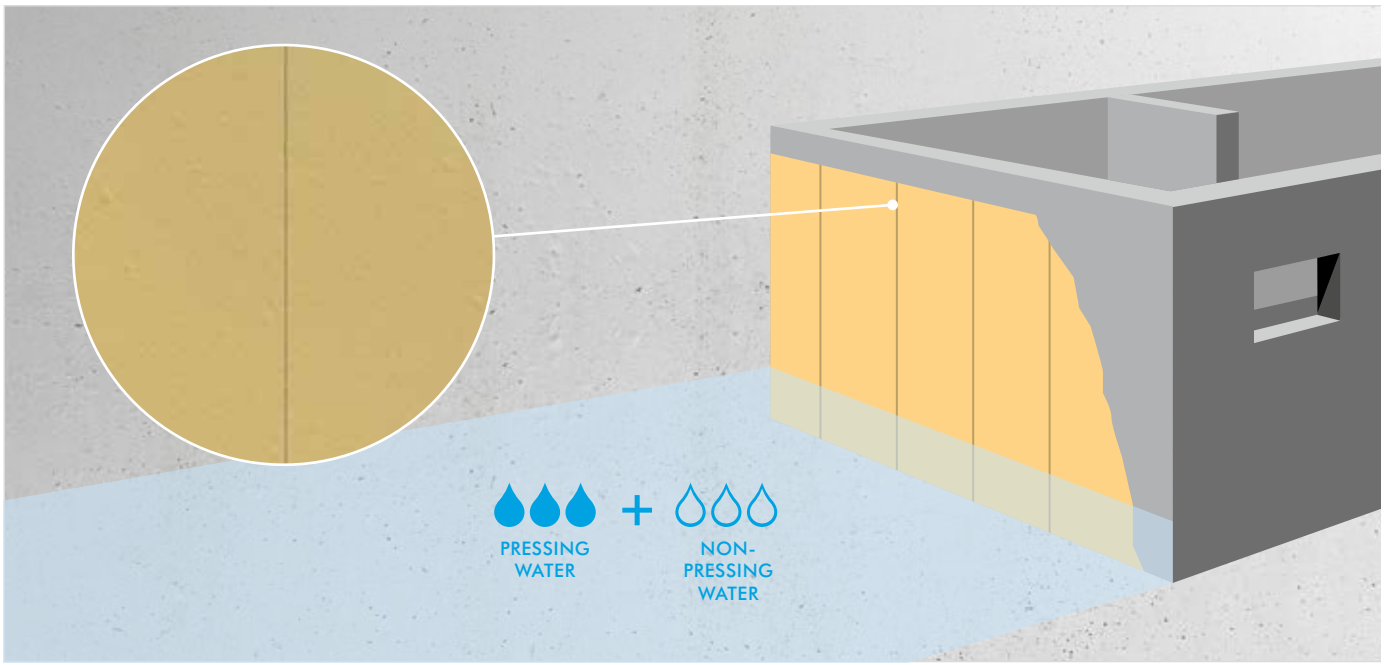
LINKED CHAINS [1]	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
W1-B to W3-B (Load case 7)	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

ACCESSORIES	Product	Infos [page]
	Curaflex® formwork fastener (1701)	70
	Curaflex® Sealing plug (1702)	71
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74
	Curaflex® ring closure RRV	72
	Curaflex® Sealing ring (1708)	73
	Curaflex® packings (1775)	68

* for already existing pipes | ** for cable protection pipes, pre-insulated plastic pipes | [1] only in combination with a pipe sleeve | [2] without separate pipe sleeve | [3] For floor slabs, if necessary, with the flange turned over, if the seal is under the sole. | [4] in combination with twin / element walls | [5] only for tanking membranes | [6] only for FLK and MDS

FRESH CONCRETE COMPOSITE SEALS

STRUCTURES OR BUILDING PART MADE OF CONCRETE WITH A FRESH CONCRETE COMPOSITE SEALING IN COMPOSITE WITH WATER-IMPERMEABLE CONCRETE (WP CONCRETE)



CONTROL REQUIREMENT

Fresh concrete composite seals are not regulated by DIN 18195 or E DIN 18533. The DAfStb guideline - water-impermeable structures made of concrete (WP guideline) of the German Committee for Reinforced Concrete, and DIN 1045 provide for additional measures, especially for use class A, and do not preclude the sealing in the composite. The use of fresh concrete composite seals in both areas of application is therefore subject to the approval of the client, and must be carried out in compliance with the building inspections regulations, or the relevant general building inspection certificate of the relevant sealing.

The execution of the penetration must always be carried out in consultation with the manufacturer of the fresh concrete composite system, or according to the specifications of the valid general building inspectorate test certificate.

The use of pipe sleeves is recommended to enable a clear allocation of responsibilities.

Penetrations can be carried out with loose and fixed flange constructions or pipe sleeves with a bonding flange.
In the case of loose and fixed flange constructions, the fleece of the fresh concrete composite seal may have to be provided with a sealing adhesive suitable for the sealing system, to prevent outflow in the area of the fixed flange. Furthermore, on both sides of the hard sealing track an admixture of at least 2 mm thickness with a material-compatible Elastomer. The bracing of the loose and fixed flange construction takes place after the sealing adhesive has cured.

The bonding of the fresh concrete composite seal to the bonding flange must be performed with a sealing adhesive suitable for the sealing system.

In the case of buildings or building parts which are already provided with a fresh concrete composite seal, the recess may also be designed as a core bore. In this case, the core bore wall must be coated with an epoxy resin, which is to be processed to the surface of the fresh concrete composite seal. This has to be performed according to the specifications of the manufacturer of the fresh concrete composite system.

The outer edges of the built-in parts should normally be at least 30 cm away from other building components, building edges and building fillets, and at least 50 cm from building joints. If these distances cannot be adhered, special constructions must be planned.

PRODUCT GUIDE

GASKET-INSERTS [1]	Number of lines / execution					Recommendation		
	without	one	several	split version*	sensitive**	TOP RECOMMENDATION	Infos [page]	Further products
Load class 2 / FHRK standard 20		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® A, A/S, B
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In A
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® A 40
			•			Curaflex® A/M	48	-
			•	•		Curaflex® A/M/T	49	-
	•					Curaflex Nova® Uno/0	31	Curaflex® A/0
Load class 1 / FHRK standard 30		•				Curaflex Nova® Uno	29	Curaflex Nova® Multi, Curaflex® C, C/S, F, D
		•		•		Curaflex Nova® Uno/T	30	Curaflex® Quick In C
					•	Curaflex Nova® Senso	33	Curaflex Nova® Uno/MS, Curaflex® C 40
			•			Curaflex® C/M	39	-
			•	•		Curaflex® C/M/T	40	-
	•					Curaflex Nova® Uno/0	31	Curaflex® C/0

PIPE PIPES	Version	Recommendation	
		Product	Infos [page]
Load class 2	bonding flange	Curaflex® 3001	66
	Loose and fixed flange	Curaflex® 4005 [3], 5000 [3], 7005	63 – 65
	Loose and fixed flange with middle flange	Curaflex® 5.5002 [3]	64

PIPE PIPES	Version	Recommendation	
		Product	Infos [page]
Load class 1	Loose and fixed flange	Curaflex® 4006 [3], 6000 [3]	59, 60
	Loose and fixed flange with middle flange	Curaflex® 6.6002 [3]	60
	Pre-wall construction with loose and fixed flange	Curaflex® 7006, 7006/T, 7006/M/S	61, 62

LINKED CHAINS [1]	Intended use for		Recommendation	
	Steel / cast iron pipes	Plastic pipes	Product	Infos [page]
Load class 2+1 / FHRK standard 20+30	•		Link Seal® C, S316	80
		•	Link Seal® BC, BS316	81

ACCESSORIES	Product	Infos [page]
	Curaflex® packings (1775)	68
	Curaflex® formwork fastener (1701)	70
	Curaflex® Sealing plug (1702)	71
	Sikadur®-31 CF standard concrete adhesive (1740), Sika® adhesive cleaner-1 (1754) etc.	74
	Epoxy resin coating (1745)	74

SELECTED DOYMA PRODUCTS WERE TESTED JOINTLY WITH SIKA DEUTSCHLAND GMBH FOR A POSITIVE EFFECT WITH THE FRESH CONCRETE COMPOSITE SYSTEM SIKAPROOF ® A. FURTHER SYSTEMS ARE IN PROGRESS.

* for already existing pipes | ** for cable protection pipes, pre-insulated plastic pipes | [1] only in combination with a pipe sleeve or coated core bore | [3] For floor slabs, if necessary, with the flange turned over, if the seal is under the sole.

THE NEW GENERATION OF GASKET INSERTS:

Curaflex Nova®

The DOYMA Curaflex Nova® gasket inserts are the safe solution for the sealing of all common media lines. The gasket inserts are suitable for use in pipe sleeves as well as for water proofed concrete core bores. Curaflex Nova® gasket inserts are equipped for any load case (both against pressing and non-pressing water).

The unique DOYMA ITL principle (Integrated Torque Limiter) always guarantees the correct torque when the gasket inserts are tightened. All Curaflex Nova® frame rings are made of a special high-performance plastic. With frame rings made of special non-conductive high-performance plastic, electrochemical corrosion doesn't stand a chance. DOYMA-Grip guarantees an optimal contact pressure through extremely slip-resistant and highly aging-resistant EPDM special elastomer.

It was never so easy and safe to create a seal.

ADVANTAGES AT A GLANCE

ITL

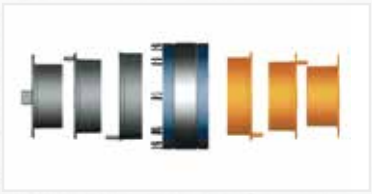
ITL = Integrated Torque Limiter
Optimal contact pressure through an automatically set correct torque. Specially developed ITL nuts reliably detach at the defined torque.

DOYMA GRIP

DOYMA-Grip
The specially developed aging-resistant elastomer prevents that friction-reducing substances make the gasket insert slip under load induction.

DDE

DDE = DOYMA Diameter Extension
Plug-in modules allow a tool-free adaptation to a wide range of media cable diameters with only one sealing insert and maximum flexibility on-site.



STS

STS = Soft Tight System
Gentle sealing of sensitive pipes ideal for corrugated pipes, textured plastic jacket and cable protection pipe.

Before the gasket insert is tightened.

Curaflex Nova® Senso is tightened.

NOW SIMPLY SCAN THE QR-CODE AND FIND OUT MORE ABOUT CURAFLEX NOVA® GASKET INSERTS!

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Curaflex Nova® Uno

NON PRESSING WATER

PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)

ITL

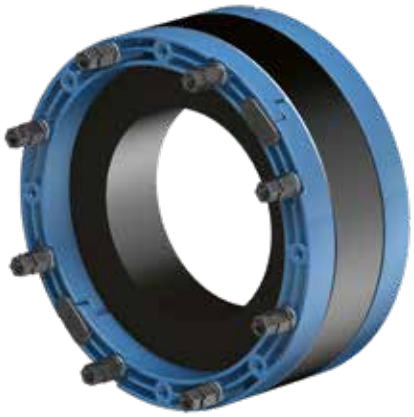
DOYMA GRIP

Leakage test G 30661 iro Oldenburg

Leakage test G 30663 iro Oldenburg

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee



PRODUCT ADVANTAGES

- with ITL system for an optimal contact pressure - can also be installed with an electric screwdriver
- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip

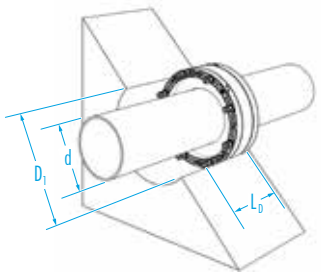
TECHNICAL DETAILS

- gas-tight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- 40 mm sealing width

THE GASKET INSERT CONSISTS OF:

- blue frame rings made of high-performance plastic
- Elastomeric sealing ring, 40 mm wide, made of EPDM (DOYMA-Grip), optional NBR (fuel / oil resistant)
- ITL-nuts
- Stainless steel screws A4

Pipe sleeve / core bore ID: D_i [DN in mm]	Pipe OD d [mm]
80 (79 – 83 mm)	5 – 40
100 (99 – 104 mm)	5 – 63
150 (149 – 153 mm)	63 – 112
200 (199 – 203 mm)	108 – 160
250 (249 – 253 mm)	154 – 201
L_D (max. design length) [mm]: 100	
further assignments, see page 4.	



ACCESSORIES

- Core bore concrete sealant (page 67)
- Fixing tabs (page 74)
- ITL nut set (page 74)

Curaflex Nova® Uno/T

NON PRESSING WATER

PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- hinged version, for already existing pipes

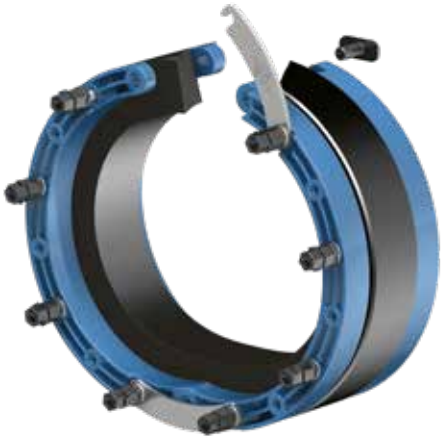
ITL

DOYMA GRIP

Leakage test G 30661 iro Oldenburg

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee



PRODUCT ADVANTAGES

- with ITL system for an optimal contact pressure - can also be installed with an electric screwdriver
- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- subsequently, to install around existing pipes/cables
- with quick-release closure, for the safe and secure closure

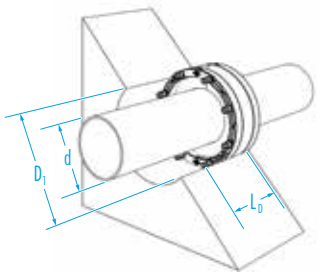
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- 40 mm sealing width
- hinged expandable

THE GASKET INSERT CONSISTS OF:

- split blue frame rings made of high-performance plastic
- split Elastomer sealing ring, 40 mm wide, made of EPDM (DOYMA-Grip), optional NBR (fuel / oil resistant)
- Stainless steel V4A quick release fastener
- ITL-nuts
- Stainless steel screws A4

Pipe sleeve / core bore ID: D_i [DN in mm]	Pipe OD d [mm]
80 (79 – 83 mm)	5 – 40
100 (99 – 104 mm)	5 – 63
150 (149 – 153 mm)	63 – 112
200 (199 – 203 mm)	108 – 160
250 (249 – 253 mm)	154 – 201
L_D (max. design length) [mm]: 100	
further assignments, see page 4.	



ACCESSORIES

- Core bore concrete sealant (page 67)
- Fixing tabs (page 74)
- ITL nut set (page 74)

Curaflex Nova® Uno/0

NON PRESSING WATER

PRESSING WATER

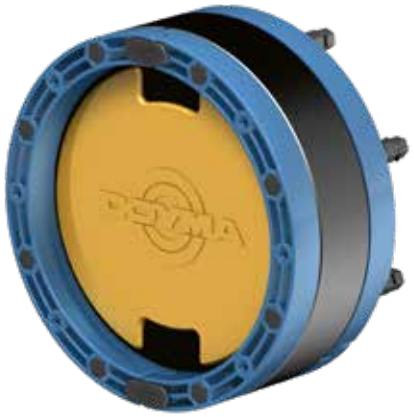
- Sealing of penetrations
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- permanent blind seal

ITL

DOYMA GRIP

Leakage test G 30661 iro Oldenburg

25 years guarantee



PRODUCT ADVANTAGES

- with ITL system for an optimal contact pressure - can also be installed with an electric screwdriver
- with removable sealing plug and thus suitable for pipe or cable routing
- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip

TECHNICAL DETAILS

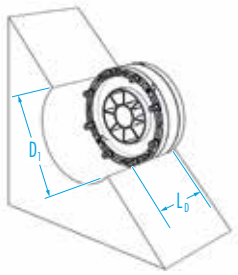
- gas and watertight
- Blind cover, removable
- 40 mm sealing width

THE GASKET INSERT CONSISTS OF:

- blue frame rings made of high-performance plastic
- Elastomeric sealing ring, 40 mm wide, made of EPDM (DOYMA-Grip), optional NBR (fuel / oil resistant)
- ITL-nuts
- Stainless steel screws A4
- Sealing plug made of plastic

Pipe sleeve / core bore ID: D_1 [DN in mm]	for pipe Ø from - to [mm]*
80 (79 – 83 mm)	30 – 35
100 (99 – 104 mm)	30 – 35
150 (149 – 153 mm)	62 – 63
200 (199 – 203 mm)	108 – 112
250 (249 – 253 mm)	158 – 161
L_0 (max. design length) [mm]: 100	

* Suitable for the pipe/cable entry after removing the sealing plug.



ACCESSORIES

- Core bore concrete sealant (page 67)
- Fixing tabs (page 74)
- ITL nut set (page 74)

Curaflex Nova® Uno/breit

NON PRESSING WATER

PRESSING WATER

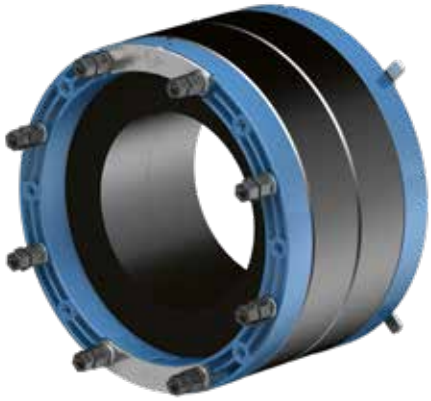
- Sealing of penetrations
- Installation into core bore in waterproof concrete (white tank)
- Ideal for twin / element walls

ITL

DOYMA GRIP

RADON TIGHTNESS
20.11.2015/11.12.2015
IAF GmbH

25 years guarantee



PRODUCT ADVANTAGES

- with ITL system for an optimal contact pressure - can also be installed with an electric screwdriver
- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- wide rubber cover seal covers prefabricated concrete shell and core concrete
- clear positioning by means of fixing lugs (included in the scope of delivery)

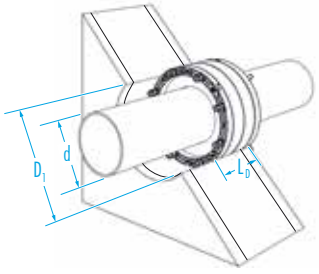
TECHNICAL DETAILS

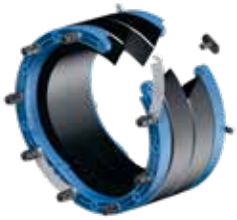
- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- 80 mm sealing width

THE GASKET INSERT CONSISTS OF:

- blue frame rings made of high-performance plastic
- Elastomer sealing ring, 2 x 40 mm wide, made of EPDM (DOYMA-Grip)
- Stainless steel hinge bracket V4A
- ITL-nuts
- Stainless steel screws A4
- 4 fixing tabs incl. screws made of stainless steel V2A/A2

Pipe sleeve / core bore ID: D_1 [DN in mm]	Pipe OD d [mm]
80 (79 – 83 mm)	5 – 40
100 (99 – 104 mm)	5 – 63
150 (149 – 153 mm)	63 – 112
200 (199 – 203 mm)	108 – 160
250 (249 – 253 mm)	154 – 201
L_D (max. design length) [mm]: 140	
further assignments, see page 4.	





Variant: Curaflex Nova® Uno/breit/T – hinged version, for already existing pipes

ACCESSORIES

- Core bore concrete sealant (page 67)
- ITL nut set (page 74)

A.06.17/MT 149-1-EN

Curaflex Nova® Senso

NON PRESSING WATER

PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- Ideal for flexible pipes

ITL

STS

DOYMA GRIP

Leakage test
G 30662
iro Oldenburg

25 years guarantee

PRODUCT ADVANTAGES

- with ITL system for an optimal contact pressure - can also be installed with an electric screwdriver
- with STS for the gentle sealing, thus ideal for flexible pre-insulated plastic pipes and flexible cable protection pipes
- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip

TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- 45 mm sealing width

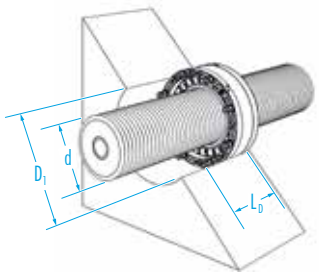
THE GASKET INSERT CONSISTS OF:

- blue frame rings made of high-performance plastic
- Elastomer sealing ring, 45 mm wide, made of EPDM (DOYMA-Grip), with butyl insert
- ITL-nuts
- STS: for gentle sealing
- Stainless steel screws A4

Pipe sleeve / core bore ID D_1 [DN in mm]	Pipe-OD d [mm]
150 (149 – 153)	74 – 76
	89 – 91
	109 – 111
200 (199 – 203)	109 – 111
	124 – 126
	139 – 141
	159 – 161
250 (249 – 253)	159 – 161
	174 – 176
	181 – 183
	199 – 201
L_D (max. design length) [mm]: 105	

Before the gasket insert is tightened.

Curaflex Nova® Senso is tightened.



ACCESSORIES

- Core bore concrete sealant (page 67)
- Fixing tabs (page 74)

Curaflex Nova® Multi

NON PRESSING WATER

PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- high variability

ITL

DOYMA GRIP

DDE

Leakage test G 30661 iro Oldenburg

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- with ITL system for an optimal contact pressure - can also be installed with an electric screwdriver
- with DDE, modular sealing insert, thus high variability
- reversible adaptability to the media line
- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- Blind closure integrated, later assignment easily possible
- higher sealing performance of the gasket insert through DOYMA-Grip

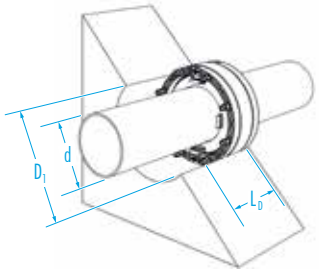
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- 45 mm sealing width
- DN 100 blind sealing and from 20 - 63 mm
- DN 200 blind sealing and from 108 - 160 mm

THE GASKET INSERT CONSISTS OF:

- blue frame rings made of high-performance plastic
- Elastomer sealing ring, 45 mm wide, made of EPDM (DOYMA-Grip)
- DDE modules in black and orange
- ITL-nuts
- Stainless steel screws A4

Pipe sleeve / core bore ID D_i [DN in mm]	Pipe / cable OD d [mm]	Color of the module seals
Curaflex Nova® Multi DN 100		
100 (99 – 104)	blind	orange
	20 – 25	black
	28 – 35	orange
	40 – 45	black
	46 – 52	orange
	57 – 63	black
Curaflex Nova® Multi DN 200		
200 (199 – 203)	blind	orange
	108 – 112	black
	113 – 118	orange
	124 – 128	black
	131 – 135	orange
	139 – 144	black
	156 – 160	black
L_D (max. design length) [mm]: 105		



ACCESSORIES

- Core bore concrete sealant (page 67)
- Fixing tabs (page 74)
- ITL nut set (page 74)

A.06.17/MT 149-1-EN

Curaflex Nova® Uno/MS

NON PRESSING WATER

PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve
- or core bore in waterproof concrete (white tank)
- with additional shrinking technology
- ideal for flexible cable protection pipes

ITL

DOYMA GRIP

25 years guarantee

PRODUCT ADVANTAGES

- with ITL system for an optimal contact pressure - can also be installed with an electric screwdriver
- no relevant mechanical forces are exerted on the pipe through the shrinking technique
- ideal for corrugated pipes or medium voltage cables where no mechanical forces are allowed to act upon the cable (thin-walled "ribs" or similar)
- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip

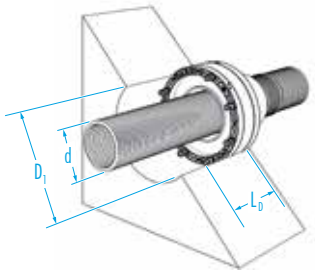
TECHNICAL DETAILS

- gas and watertight
- with shrinking technology

THE GASKET INSERT CONSISTS OF:

- blue frame rings made of high-performance plastic
- Elastomer sealing ring, 40 mm wide, made of EPDM (DOYMA-Grip)
- Heat shrink shroud
- Jacket pipe PEHD
- ITL-nuts
- Stainless steel screws A4

Pipe sleeve / core bore ID D_1 [DN in mm]	Pipe / cable OD d [mm]
100 (99 – 104)	20 – 39
	40 – 50
150 (149 – 153)	40 – 50
	51 – 95
200 (199 – 203)	64 – 95
	96 – 147
250 (249 – 253)	64 – 95
	96 – 150
L_D (max. design length) [mm]: 100	
Other dimensions, materials and customer-specific versions upon request!	



ACCESSORIES

- Core bore concrete sealant (page 67)
- Fixing tabs (page 74)
- ITL nut set (page 74)

Curaflex® C

PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)

DOYMA GRIP

DPS

Leakage test G 30661 iro Oldenburg

Helium test 18-11-2008 INFRASERV

Sound protection 2075/5673-DK-br IBMB

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS and DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts

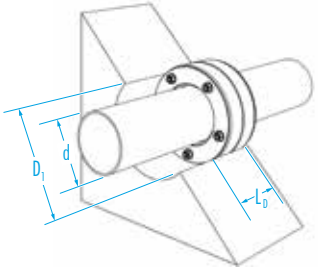
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- twin sealing

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350), ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 2 x 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)
- 3 mm thick orange center ring

Pipe sleeve / core bore ID D_1 [DN in mm]	Pipe / cable OD d [mm]
50 (49 – 53)	7 – 24
80 (78.5 – 83)	7 – 40
100 (98.5 – 104)	41 – 57
125 (123.5 – 128)	58 – 77
150 (148.5 – 153)	78 – 104
200 (199 – 204)	105 – 145
250 (247 – 253)	146 – 190
300 (297 – 304)	191 – 233
350 (347 – 354)	234 – 288
400 (397 – 404)	289 – 339
450 (447 – 454)	340 – 380
500 (497 – 503)	381 – 430
600 (597 – 603)	431 – 530
700 (697 – 703)	531 – 620
L_D (max. design length) [mm]: 95	
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!	



ACCESSORIES

- Core bore concrete sealant (page 67)

Curaflex® Quick In C

PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- hinged version, for already existing pipes

DOYMA GRIP

DPS

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS and DOYMA-Grip
- watertight welded bolts
- with quick release (up to DN 500), for the secure and unobstructed closure
- subsequently, to install around existing pipes/cables

TECHNICAL DETAILS

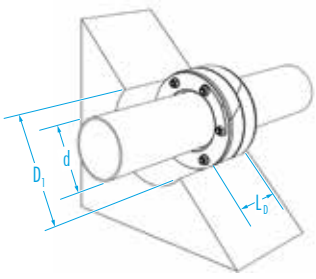
- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- twin sealing
- hinged version - from DN 600 in split version with an additional steel ring for stabilization

THE GASKET INSERT CONSISTS OF:

- **split frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350), with a quick lock (up to DN 500), ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **split rubber seal with step cut:** Elastomer, 2 x 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)
- 3 mm thick orange center ring

Pipe sleeve / core bore ID D_1 [DN in mm]	Pipe / cable OD d [mm]
50 (49 – 53)	7 – 24
80 (78.5 – 83)	7 – 40
100 (98.5 – 104)	41 – 57
125 (123.5 – 128)	58 – 77
150 (148.5 – 153)	78 – 104
200 (199 – 204)	105 – 145
250 (247 – 253)	146 – 190
300 (297 – 304)	191 – 233
350 (347 – 354)	234 – 288
400 (397 – 404)	289 – 339
450 (447 – 454)	340 – 380
500 (497 – 503)	381 – 430
L_D (max. design length) [mm]: 95	
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!	

Curaflex® Quick In C DN > 600: Split version with an additional steel ring for stabilization.



ACCESSORIES

- Core bore concrete sealant (page 67)

A 06.17/MT 149-1-EN

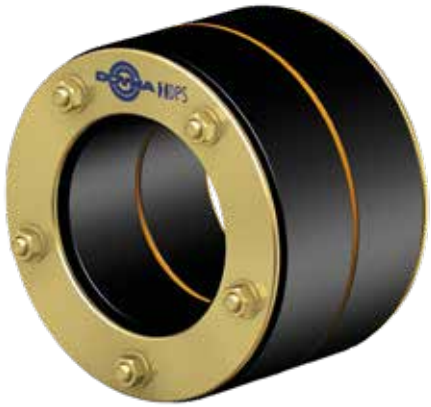
Curaflex® C 40

PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- extra wide soft EPDM rubber, ideal for preinsulated pipes

DPS

25 years guarantee



PRODUCT ADVANTAGES

- extra wide and soft EPDM rubber seals tightly seal on the media line especially material friendly
- ideal for most plastic jacket pipes (district heating)
- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS
- System component, without cuts or divisions, with watertight welded bolts

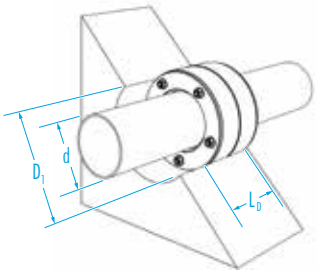
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- double sealing

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350), ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 2 x 40 mm thick EPDM seals
- 3 mm thick orange center ring

Pipe sleeve / core bore ID D_1 [DN in mm]	Pipe / cable OD d [mm]
125 (123.5 – 128)	58 – 77
150 (148.5 – 153)	78 – 104
200 (199 – 204)	105 – 145
250 (247 – 253)	146 – 190
300 (297 – 304)	191 – 233
350 (347 – 354)	234 – 288
400 (397 – 404)	289 – 339
450 (447 – 454)	340 – 380
500 (497 – 503)	381 – 430
L_D (max. design length) [mm]: 120	
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!	



ACCESSORIES

- Core bore concrete sealant (page 67)

A 06.17/MT 149-1-EN

Curaflex® C/M

PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- for multiple lines

DOYMA GRIP

RADON TIGHTNESS
20.11.2015/11.12.2015
IAF GmbH

25 Years guarantee

PRODUCT ADVANTAGES

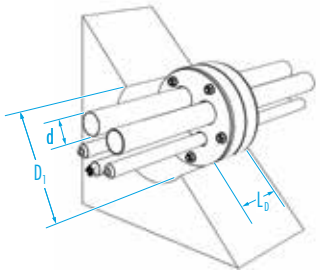
- easy installation through accurate dimensions (large standard range)
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts

TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- double sealing

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** Steel rings, ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 2 x 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant),
- 3 mm thick orange center ring



Pipe / cable OD d [mm]	Number of pipes / cables	Pipe sleeve / core bore ID D_1 [DN in mm]
1 – 14	1 – 2	50 (49 – 53)
1 – 26	1 – 2	80 (78.5 – 83)
1 – 23	1 – 3	
1 – 24	1 – 4	
1 – 16	1 – 7	
1 x 4 – 32 / 1 x 1 – 14	1 – 2	
4 x 4 – 28 / 1 x 1 – 12	1 – 5	100 (98.5 – 104)
1 – 21	1 – 7	
4 – 37	1 – 2	
4 – 33	1 – 3	
1 x 4 – 46 / 1 x 1 – 16	1 – 2	
4 – 36	1 – 4	125 (123.5 – 128)
2 x 4 – 34 / 2 x 4 – 42	1 – 4	
4 – 28	1 – 7	
4 – 41	1 – 3	
2 x 23 – 51 / 2 x 8 – 36	1 – 4	150 (148.5 – 153)
2 x 30 – 58 / 2 x 13 – 41	1 – 4	
4 x 22 – 50 / 1 x 4 – 16	1 – 5	
1 – 20	1 – 13	
6 x 8 – 36 / 2 x 4 – 16	1 – 8	
43 – 71	1 – 3	200 (199 – 204)
5 x 23 – 51 / 1 x 4 – 31	1 – 6	
2 x 28 – 56 / 2 x 54 – 82	1 – 4	
40 – 69	1 – 4	
4 – 36	1 – 10	
4 – 26	1 – 15	
8 x 13 – 41 / 4 x 4 – 30	1 – 12	
4 – 26	1 – 20	250 (247 – 253)
12 – 40	1 – 8	
10 x 16 – 44 / 5 x 4 – 36	1 – 15	
L_0 (max. design length) [mm] 90		

ACCESSORIES

- Core bore concrete sealant (page 67)

Curaflex® C/M/T

PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- for multiple lines
- split, for already existing pipes

DOYMA GRIP

RADON TIGHTNESS
20.11.2015/11.12.2015
IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy installation through accurate dimensions (large standard range)
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- watertight welded bolts
- subsequently, to install around existing pipes/cables

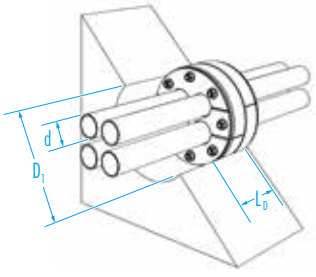
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- double sealing
- split

THE GASKET INSERT CONSISTS OF:

- **split frame rings:** Steel rings, ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **rubber gasket:** Elastomer, 2 x 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant),
- 3 mm thick orange center ring

Pipe / cable OD d [mm]	Number of pipes / cables	Pipe sleeve / core bore ID D_1 [DN in mm]
1 – 21	1 – 3	80 (78.5 – 83)
4 – 37	1 – 2	100 (98.5 – 104)
4 – 26	1 – 4	
1 x 18 – 36 2 x 8 – 16	1 – 3	
1 x 8 – 22 4 x 8 – 16	1 – 5	
4 – 32	1 – 4	125 (123.5 – 128)
25 – 41	1 – 3	
2 x 2 – 46 2 x 2 – 36	1 – 4	150 (148.5 – 153)
15 – 31	1 – 9	200 (199 – 204)
L_D (max. design length): 90 mm		
We also supply gasket inserts in other sizes. Contact us.		



ACCESSORIES

- Core bore concrete sealant (page 67)

A.06.17/MT 149-1-EN

Curaflex® C/0

PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- permanent blind seal

DOYMA GRIP

Leakage test G 30661 iro Oldenburg

Sound protection 2075/5673-DK-br IBMB

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- watertight welded bolts

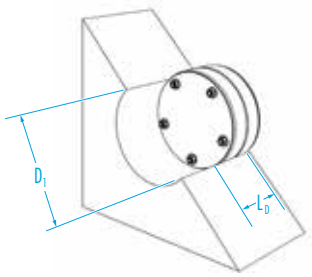
TECHNICAL DETAILS

- gas and watertight
- double sealing "blind"

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** Steel rings, ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 2 x 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant),
- 3 mm thick orange center ring

Pipe sleeve / core bore ID D_1 [DN in mm]
50 (49 – 53)
80 (78.5 – 83)
100 (98.5 – 104)
125 (123.5 – 128)
150 (148.5 – 153)
200 (199 – 204)
250 (247 – 253)
300 (297 – 304)
350 (347 – 354)
400 (397 – 404)
450 (447 – 454)
500 (497 – 503)
600 (597 – 603)
700 (697 – 703)
L_D (max. design length) [mm]: 90
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!



ACCESSORIES

- Core bore concrete sealant (page 67)

A 06.17/MT 149-1-EN

Curaflex® C/S

PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- if the opening sizes are too large or too small
- with special dimensions

DOYMA GRIP

RADON TIGHTNESS
20.11.2015/11.12.2015
IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts
- Production according to specifications

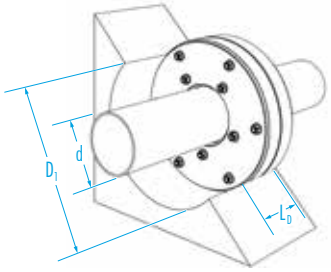
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- double sealing

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** Steel rings, ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 2 x 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)
- 3 mm thick orange center ring

Pipe sleeve / core bore ID D_1 [DN in mm]	Pipe / cable OD d [mm]
100 (98.5 – 104)	9 – 40
100 (98.5 – 104)	58 – 65
125 (123.5 – 128)	40 – 57
130 (128.5 – 133)	58 – 77
150 (148.5 – 153)	57 – 77
150 (148.5 – 153)	108 – 115
160 (158.5 – 163)	78 – 104
200 (199 – 204)	78 – 104
250 (247 – 253)	105 – 145
300 (297 – 304)	158 – 190
L_D (max. design length) [mm]: 85	
Further assignments, see page 5. Other dimensions, materials and customer-specific versions upon request!	



ACCESSORIES

- Core bore concrete sealant (page 67)

Curaflex® F

PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- with additional large ring for the axial fixing
- for high hydrostatic pressure

DOYMA GRIP

DPS

Leakage test G 30663 iro Oldenburg

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS and DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts
- through the large ring, a fixing - among other things for high pressure - is provided
- Mounting from the pressure-facing side

TECHNICAL DETAILS

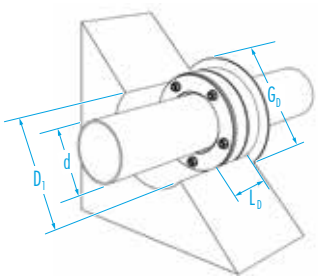
- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- double sealing, with large ring

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350), ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 2 x 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant),
- 3 mm thick orange center ring

Pipe / cable OD d [mm]	Pipe sleeve / core bore ID D_1 [DN in mm]	Large ring OD G_D max. [mm]
7 – 24	50 (49 – 53)	70
7 – 40	80 (78.5 – 83)	98
41 – 57	100 (98.5 – 104)	120
58 – 77	125 (123.5 – 128)	145
78 – 104	150 (148.5 – 153)	170
105 – 145	200 (199 – 204)	240
146 – 190	250 (247 – 253)	290
191 – 233	300 (297 – 304)	340
234 – 288	350 (347 – 354)	390
289 – 339	400 (397 – 404)	440
340 – 380	450 (447 – 454)	490
381 – 430	500 (497 – 503)	550
431 – 530	600 (597 – 603)	650
531 – 620	700 (697 – 703)	750
L_D (max. installation depth) [mm]: 95		
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!		

Variant: Curaflex® D properties as described above, but mounting from the pressure-facing side ("water side").



ACCESSORIES

- Core bore concrete sealant (page 67)

Curaflex® C/2/SD/6

PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve or concrete core bore
- for application with tanking membrane or thick coating (black tank)
- with fixed and loose flange

DOYMA GRIP

DPS

Leakage test
22 1295 797-01
MPA NRW

RADON TIGHTNESS
20.11.2015/11.12.2015
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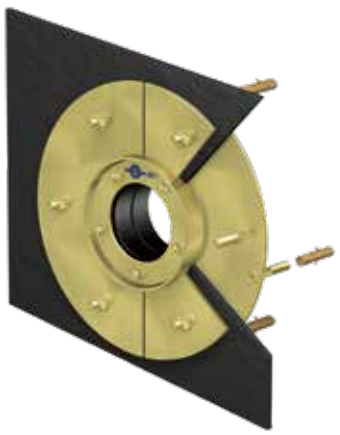
25 years guarantee



PRODUCT ADVANTAGES

- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS and DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts
- integrated fixed and loose flange (loose flange split)

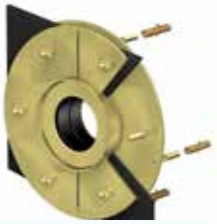
TECHNICAL DETAILS

- with flanges according to DIN 18195 / DIN 18533
- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- mounting from the pressure-facing side
- depending on the tanking membrane with Curaflex® packings (1775) arranged on both sides with thin and hard film or accessories with thick coating (1776): Sanding of the contact surfaces of the fixed / loose flange

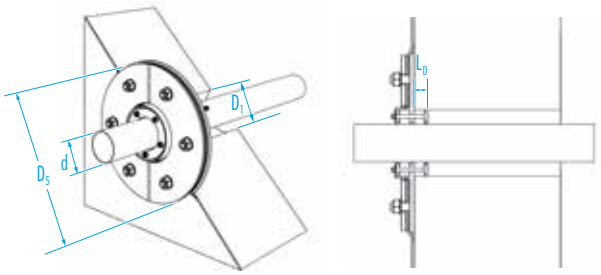
THE GASKET INSERT CONSISTS OF:

- **Frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350), ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- with integrated fixed and loose flange
- **Rubber gasket:** Elastomer, 2 x 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)

Variant: Curaflex® F/2/SD/6 – properties as described above, but mounting from the pressure non-facing side ("dry side").



Pipe / cable OD d [mm]	Pipe sleeve / core bore ID D_1 [DN in mm]	Fixed flange OD D_5 max. [mm]
7 – 40	80 (78.5 – 83)	420
41 – 57	100 (98.5 – 104)	440
58 – 77	125 (123.5 – 128)	465
78 – 104	150 (148.5 – 153)	490
105 – 145	200 (199 – 204)	540
146 – 190	250 (247 – 253)	590
191 – 233	300 (297 – 304)	640
234 – 288	350 (347 – 354)	690
289 – 339	400 (397 – 404)	740
340 – 380	450 (447 – 454)	790
381 – 430	500 (497 – 503)	840
431 – 530	600 (597 – 603)	940
531 – 620	700 (697 – 703)	1040
L_D (max. installation depth) [mm]: 40 (at F/2/SD/6: 50 mm)		
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!		



ACCESSORIES

- Curaflex® packings (1775) for thin hard films (page 68)
- Accessories for thick coating (page 69)

Curaflex® A

NON PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)

DOYMA GRIP

DPS

Leakage test G 30661 iro Oldenburg

Helium test 14-11-2008 INFRASERV

Sound protection 2075/5673-DK-br IBMB

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS and DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts

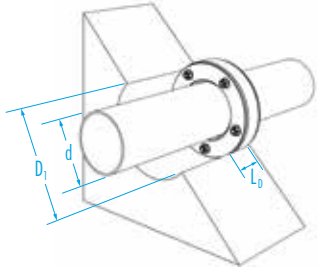
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- single sealing

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350), ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 27 mm thick EPDM seal (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)

Pipe sleeve / core bore ID D_i [DN in mm]	Pipe / cable OD d [mm]
50 (49 – 53)	7 – 24
80 (78.5 – 83)	7 – 40
100 (98.5 – 104)	41 – 57
125 (123.5 – 128)	58 – 77
150 (148.5 – 153)	78 – 104
200 (199 – 204)	105 – 145
250 (247 – 253)	146 – 190
300 (297 – 304)	191 – 233
350 (347 – 354)	234 – 288
400 (397 – 404)	289 – 339
450 (447 – 454)	340 – 380
500 (497 – 503)	381 – 430
600 (597 – 603)	431 – 530
700 (697 – 703)	531 – 620
L_D (max. design length) [mm]: 60	
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!	



ACCESSORIES

- Core bore concrete sealant (page 67)

Curaflex® Quick In A

NON PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- hinged version, for already existing pipes

DOYMA GRIP

DPS

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS and DOYMA-Grip
- watertight welded bolts
- with quick release (up to DN 500), for the secure and unobstructed closure
- subsequently, to install around existing pipes/cables

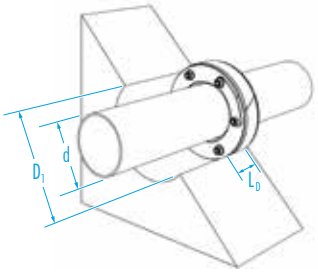
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- single sealing
- hinged version - from DN 600 in split version with an additional steel ring for stabilization

THE GASKET INSERT CONSISTS OF:

- **split frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350), with a quick lock (up to DN 500), ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **split rubber seal with step cut:** Elastomer, 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)

Pipe sleeve / core bore ID D_1 [DN in mm]	Pipe / cable OD d [mm]
50 (49 – 53)	7 – 24
80 (78.5 – 83)	7 – 40
100 (98.5 – 104)	41 – 57
125 (123.5 – 128)	58 – 77
150 (148.5 – 153)	78 – 104
200 (199 – 204)	105 – 145
250 (247 – 253)	146 – 190
300 (297 – 304)	191 – 233
350 (347 – 354)	234 – 288
400 (397 – 404)	289 – 339
450 (447 – 454)	340 – 380
500 (497 – 503)	381 – 430
L_D (max. design length) [mm]: 60	
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!	



ACCESSORIES

- Core bore concrete sealant (page 67)

Curaflex® A 40

NON PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- extra wide soft EPDM rubber, ideal for preinsulated pipes

DPS

25 years guarantee

PRODUCT ADVANTAGES

- extra wide and soft EPDM rubber layer on the media line especially material friendly
- ideal for most plastic jacket pipes (district heating)
- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS
- System component, without cuts or divisions, with watertight welded bolts

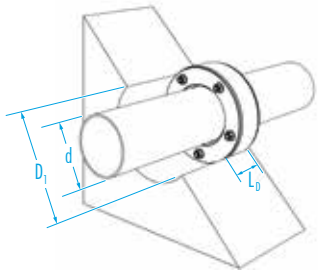
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- single sealing

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350), ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 40 mm thick EPDM seals

Pipe sleeve / core bore ID D_1 [DN in mm]	Pipe / cable OD d [mm]
125 (123.5 – 128)	58 – 77
150 (148.5 – 153)	78 – 104
200 (199 – 204)	105 – 145
250 (247 – 253)	146 – 190
300 (297 – 304)	191 – 233
350 (347 – 354)	234 – 288
400 (397 – 404)	289 – 339
450 (447 – 454)	340 – 380
500 (497 – 503)	381 – 430
L_D (max. design length) [mm]: 70	
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!	



ACCESSORIES

- Core bore concrete sealant (page 67)

Curaflex® A/M

NON PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- for multiple lines

DOYMA GRIP

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

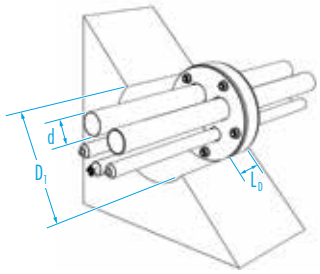
- easy installation through accurate dimensions (large standard range)
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts

TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- single sealing

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** Steel rings, ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 27 mm thick EPDM seal (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)



Pipe / cable OD d [mm]	Number of pipes / cables	Pipe sleeve / core bore ID D_1 [DN in mm]
1 – 14	1 – 2	50 (49 – 53)
1 – 26	1 – 2	80 (78.5 – 83)
1 – 23	1 – 3	
1 – 24	1 – 4	
1 – 16	1 – 7	
1 x 4 – 32 / 1 x 1 – 14	1 – 2	
4 x 4 – 28 / 1 x 1 – 12	1 – 5	100 (98.5 – 104)
1 – 21	1 – 7	
4 – 37	1 – 2	
4 – 33	1 – 3	
1 x 4 – 46 / 1 x 1 – 16	1 – 2	
4 – 36	1 – 4	125 (123.5 – 128)
2 x 4 – 34 / 2 x 4 – 42	1 – 4	
4 – 28	1 – 7	
4 – 41	1 – 3	
2 x 23 – 51 / 2 x 8 – 36	1 – 4	150 (148.5 – 153)
2 x 30 – 58 / 2 x 13 – 41	1 – 4	
4 x 22 – 50 / 1 x 4 – 16	1 – 5	
1 – 20	1 – 13	
6 x 8 – 36 / 2 x 4 – 16	1 – 8	
43 – 71	1 – 3	200 (199 – 204)
5 x 23 – 51 / 1 x 4 – 31	1 – 6	
2 x 28 – 56 / 2 x 54 – 82	1 – 4	
40 – 69	1 – 4	
4 – 36	1 – 10	
4 – 26	1 – 15	
8 x 13 – 41 / 4 x 4 – 30	1 – 12	
4 – 26	1 – 20	250 (247 – 253)
12 – 40	1 – 8	
10 x 16 – 44 / 5 x 4 – 36	1 – 15	
L_D (max. design length) [mm] 55		

ACCESSORIES

- Core bore concrete sealant (page 67)

A 06.17/MT 149-1-EN

Curaflex® A/M/T

NON PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- for multiple lines
- split, for already existing pipes

DOYMA GRIP

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy installation through accurate dimensions (large standard range)
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- watertight welded bolts
- subsequently, to install around existing pipes/cables

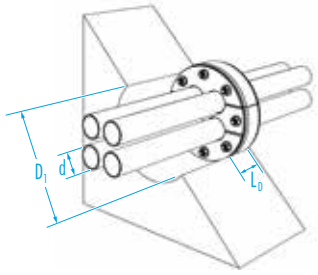
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- single sealing
- split

THE GASKET INSERT CONSISTS OF:

- **split frame rings:** Steel rings, ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **rubber gasket:** Elastomer, 27 mm thick EPDM seal (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)

Pipe / cable OD d [mm]	Number of pipes / cables	Pipe sleeve / core bore ID D_1 [DN in mm]
1 – 21	1 – 3	80 (78.5 – 83)
4 – 37	1 – 2	100 (98.5 – 104)
4 – 26	1 – 4	
1 x 18 – 36 2 x 8 – 16	1 – 3	
1 x 8 – 22 4 x 8 – 16	1 – 5	
4 – 32	1 – 4	125 (123.5 – 128)
25 – 41	1 – 3	
2 x 2 – 46 2 x 2 – 36	1 – 4	150 (148.5 – 153)
15 – 31	1 – 9	200 (199 – 204)
L_D (max. design length): 65 mm		
We also supply gasket inserts in other sizes. Contact us.		



ACCESSORIES

- Core bore concrete sealant (page 67)

Curaflex® A/0

NON PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- permanent blind seal

DOYMA GRIP

RADON TIGHTNESS
20.11.2015/11.12.2015
IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy assembly thanks to precise dimensions
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- watertight welded bolts

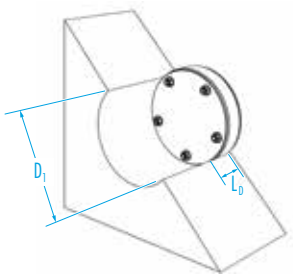
TECHNICAL DETAILS

- gas and watertight
- single sealing "blind"

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** Steel rings, ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 27 mm thick EPDM seal (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)

Pipe sleeve / core bore ID D_1 [DN in mm]
50 (49 – 53)
80 (78.5 – 83)
100 (98.5 – 104)
125 (123.5 – 128)
150 (148.5 – 153)
200 (199 – 204)
250 (247 – 253)
300 (297 – 304)
350 (347 – 354)
400 (397 – 404)
450 (447 – 454)
500 (497 – 503)
600 (597 – 603)
700 (697 – 703)
L_D (max. design length) [mm]: 60
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!



ACCESSORIES

- Core bore concrete sealant (page 67)

A 06.17/MT 149-1-EN

Curaflex® A/S

NON PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- If the opening sizes are too large or too small
- with special dimensions

DOYMA GRIP

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts
- Production according to specifications

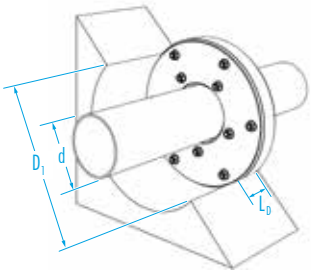
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- single sealing

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** Steel rings, ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 27 mm thick EPDM seal (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)

Pipe sleeve / core bore ID D_i [DN in mm]	Pipe / cable OD d [mm]
100 (98.5 – 104)	9 – 40
100 (98.5 – 104)	58 – 65
125 (123.5 – 128)	40 – 57
130 (128.5 – 133)	58 – 77
150 (148.5 – 153)	57 – 77
160 (158.5 – 163)	78 – 104
200 (199 – 204)	78 – 104
250 (247 – 253)	105 – 145
300 (297 – 304)	158 – 190
L_D (max. design length) [mm]: 55	
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!	



ACCESSORIES

- Core bore concrete sealant (page 67)

Curaflex® B

NON PRESSING WATER

- Sealing of penetrations
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- with additional large ring for the axial fixing

DOYMA GRIP

DPS

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee

PRODUCT ADVANTAGES

- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS and DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts
- through the large ring, a fixing is provided
- Mounting from the pressure-facing side

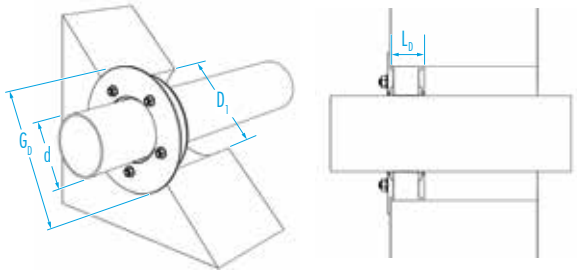
TECHNICAL DETAILS

- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- single sealing, with large ring

THE GASKET INSERT CONSISTS OF:

- **Frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350) with large ring, ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- **Rubber gasket:** Elastomer, 27 mm thick EPDM seal (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)

Pipe / cable OD d [mm]	Pipe sleeve / core bore ID D_1 [DN in mm]	Large ring OD G_D max. [mm]
7 – 24	50 (49 – 53)	70
7 – 40	80 (78.5 – 83)	98
41 – 57	100 (98.5 – 104)	120
58 – 77	125 (123.5 – 128)	145
78 – 104	150 (148.5 – 153)	170
105 – 145	200 (199 – 204)	240
146 – 190	250 (247 – 253)	290
191 – 233	300 (297 – 304)	340
234 – 288	350 (347 – 354)	390
289 – 339	400 (397 – 404)	440
340 – 380	450 (447 – 454)	490
381 – 430	500 (497 – 503)	550
431 – 530	600 (597 – 603)	650
531 – 620	700 (697 – 703)	750
L_D (max. installation depth) [mm]: 60		
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!		



ACCESSORIES

- Core bore concrete sealant (page 67)

A.06.17/MT 149-1-EN

Curaflex® C/2/SD/5

NON PRESSING WATER

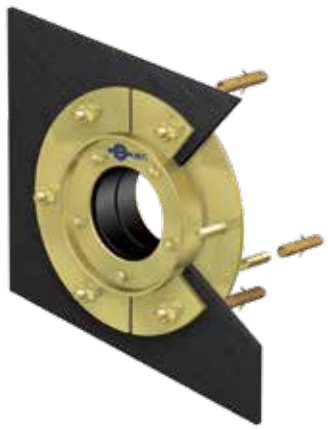
- Sealing of penetrations
- Installation into preinstalled pipe sleeve or concrete core bore
- for application with tanking membrane or thick coating (black tank)
- with fixed and loose flange

DOYMA GRIP

DPS

RADON TIGHTNESS 20.11.2015/11.12.2015 IAF GmbH

25 years guarantee



PRODUCT ADVANTAGES

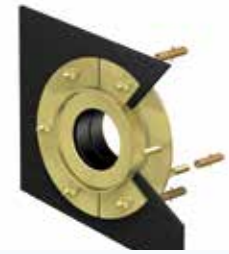
- easy installation through accurate dimensions, large sealing areas
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- higher sealing performance of the gasket insert through DPS and DOYMA-Grip
- System component, without cuts or divisions, with watertight welded bolts
- integrated fixed and loose flange (loose flange split)

TECHNICAL DETAILS

- with flanges according to DIN 18195 / DIN 18533
- gas and watertight
- Bending of medium pipes up to 8° is possible
- Absorption of axial movements
- mounting from the pressure-facing side
- depending on the tanking membrane with Curaflex® packings (1775) arranged on both sides with thin and hard film or accessories with thick coating (1776): Sanding of the contact surfaces of the fixed / loose flange

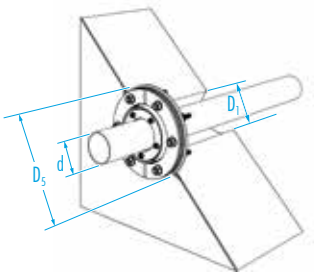
THE GASKET INSERT CONSISTS OF:

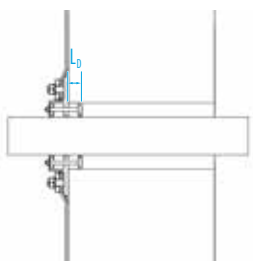
- **Frame rings:** asymmetrically profiled steel rings (DPS to KB / DN 350), ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- with integrated fixed and loose flange
- **Rubber gasket:** Elastomer, 2 x 27 mm thick EPDM seals (DOYMA-Grip), optionally EPDM-TW, NBR (fuel / oil resistant) or silicone (high temperature resistant) or FPM (chemical resistant)



Variant: Curaflex® F/2/SD/5 - Properties as described above, assembly of the gasket insert from the dry side

Pipe / cable OD d [mm]	Pipe sleeve / core bore ID D_1 [DN in mm]	Fixed flange OD D_5 max. [mm]
7 – 40	80 (78.5 – 83)	240
41 – 57	100 (98.5 – 104)	260
58 – 77	125 (123.5 – 128)	285
78 – 104	150 (148.5 – 153)	310
105 – 145	200 (199 – 204)	360
146 – 190	250 (247 – 253)	410
191 – 233	300 (297 – 304)	460
234 – 288	350 (347 – 354)	510
289 – 339	400 (397 – 404)	560
340 – 380	450 (447 – 454)	610
381 – 430	500 (497 – 503)	660
431 – 530	600 (597 – 603)	760
531 – 620	700 (697 – 703)	860
L_D (max. installation depth) [mm]: 40 (at F/2/SD/6: 50 mm)		
further assignments, see page 4. Other dimensions, materials and customer-specific versions upon request!		





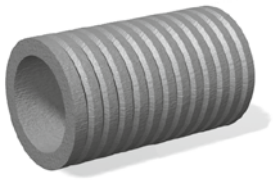
ACCESSORIES

- Curaflex® packings (1775) for thin hard films (page 68)
- Accessories for thick coating (page 69)

Curaflex® Pipe sleeves made of special fibre cement

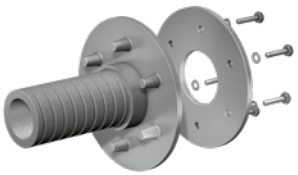
ADVANTAGES AT A GLANCE

- homogeneous and watertight connection with the concrete
- dimensionally stable
- for flush mounting into the formwork
- optimally designed inner wall for holding the Curaflex® gasket inserts
- prevention of shrinkage cracks



Curaflex® 3000

- Application in the wall
- made of high-quality special fibre cement
- special grouting of the exterior surfaces
- for waterproof concrete structures



Curaflex® 4006

- fixed and loose flanges made of cast iron
- pipe sleeve made of fibre cement
- for tanking membrane or thick coating (black tank)

Curaflex® pipe sleeves made of steel

ADVANTAGES AT A GLANCE

- optimally designed inner wall for holding the Curaflex® gasket inserts
- high static load capacity
- optionally for use even without a suitable core bore or pipe sleeve
- versions for flush mounting into the formwork
- retrofit installation through split versions

IMPORTANT NOTE! WHEN INSTALLING STEEL PIPE SLEEVES IN BUILDING WALLS WITH THICK COATING, THE CONTACT SURFACES MUST BE SANDED ON THE FACTORY SIDE. IN SUCH CASES, PLEASE BE SURE TO INCLUDE THE FOLLOWING WHEN PLACING AN ORDER: "FOR THICK COATING".

Curaflex® 9000 - Steel pipe sleeve with middle flange

- Application in the wall
- for waterproof concrete structures (white tank)
- for a high static loading

Curaflex® 8000 / T - steel pipe sleeve with flange plate and sleeve

- Application in front of the wall
- for WP concrete structures (white tank)
- for the thick coating (black tank)
- for already installed pipes (renovation)

A.06.17/MT 149-1-EN

Curaflex® 3000

NON PRESSING WATER

PRESSING WATER

- Recess for penetrations
- Use in buildings yet to be built
- for waterproof concrete structures (white tank)

Leakage test
44 799 11 399783
TÜV Nord

25 years guarantee

PRODUCT ADVANTAGES

- homogeneous connection to the concrete, reinforced by the special grooving
- Coefficient of expansion of the material corresponds to that of concrete
- optimally designed inner wall for holding the Curaflex® gasket inserts
- for a white tank (waterproof concrete constructions without tanking membranes / thick coatings)

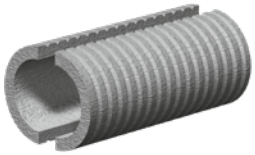
TECHNICAL DETAILS

- gas tight with an optional coating of the inner pipe sleeve and front surface
- can be combined with all Curaflex® gasket inserts

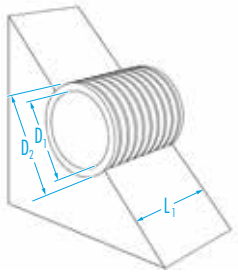
MATERIAL

- asbestos-free fibre cement

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Pipe sleeve OD D_2 max. [mm]	Standard lengths L_1 [mm]
Curaflex®	Curaflex Nova® Uno			
7 – 40	5 – 40	80	≤ 140	200 240 250 300 350 365 400 500 650 1000
41 – 57	5 – 63	100	≤ 160	
58 – 77	–	125	≤ 165	
78 – 104	63 – 112	150	≤ 190	
105 – 145	108 – 160	200	≤ 245	
146 – 190	154 – 201	250	≤ 300	
191 – 233	–	300	≤ 350	
234 – 288	–	350	≤ 400	
289 – 339	–	400	≤ 470	
340 – 380	–	450	≤ 520	
381 – 430	–	500	≤ 570	
431 – 530	–	600	≤ 680	
531 – 620	–	700	≤ 800	
We also supply pipe sleeves in other sizes. Contact us.				



Variant: Curaflex® Pipe sleeve 3000/T – Features as described above, but longitudinally-separated design. For installation with an existing pipeline in the wall.



ACCESSORIES - ABSOLUTELY NECESSARY!

- Concrete adhesive (1740) for Curaflex® pipe sleeve 3000 / T (split pipe sleeve): Page 74

ACCESSORIES

- Formwork fastener (1701): Page 70
- Sealing plug (1702): Page 71

A 06.17/MT 149-1-EN

Curaflex® 9000

NON PRESSING WATER

PRESSING WATER

- Recess for penetrations
- Use in buildings yet to be built
- for waterproof concrete structures (white tank)
- for a high static load

25 years guarantee

PRODUCT ADVANTAGES

- Steel construction, for high static loads
- optimally designed inner wall for holding the Curaflex® gasket inserts
- for a white tank (WP concrete constructions without tanking membranes / thick coatings)

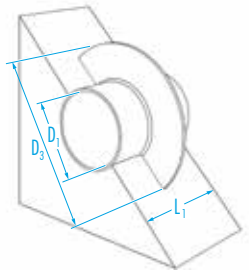
TECHNICAL DETAILS

- gas and watertight
- can be combined with all Curaflex® gasket inserts
- 75 mm circumferential middle flange of steel (can be welded optionally at any point)
- Middle flange can be used as an adhesive or wall flange

MATERIAL

- Steel ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Middle flange-D D_3 max. [mm]	Standard lengths L_1 [mm]
Curaflex®	Curaflex Nova®			
7 – 40	5 – 40	80	240	200 240 250 300 350 365 400
41 – 57	5 – 63	100	260	
58 – 77	–	125	285	
78 – 104	63 – 112	150	310	
105 – 145	108 – 160	200	360	
146 – 190	154 – 201	250	410	
191 – 233	–	300	460	
234 – 288	–	350	510	
289 – 339	–	400	560	
340 – 380	–	450	610	
381 – 430	–	500	660	
431 – 530	–	600	760	
531 – 620	–	700	860	
We also supply pipe sleeves in other sizes. Contact us.				



A.06.17/MT 149-1-EN

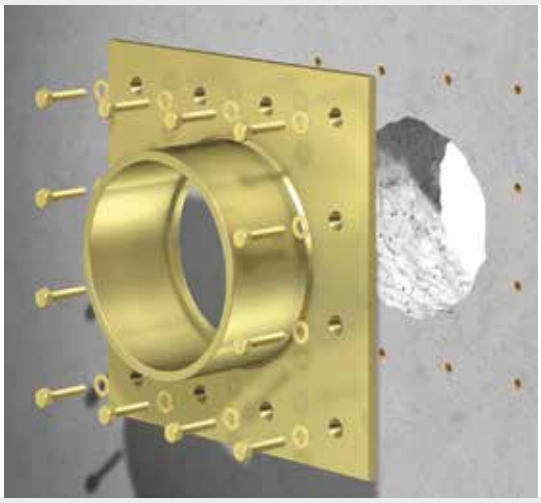
Curaflex® 8000

NON PRESSING WATER

PRESSING WATER

- Flange plate with sleeve for penetrations
- Application in front of the wall
- for waterproof concrete structures (white tank) or application with a thick coating (black tank)
- ideal for refurbishment

25 years guarantee



PRODUCT ADVANTAGES

- Sealing in front of the wall (condition of the bore / wall opening not relevant)
- suitable for penetrations without a suitable core bore or pipe sleeve
- optimally designed inner wall for holding the Curaflex® gasket insert

TECHNICAL DETAILS

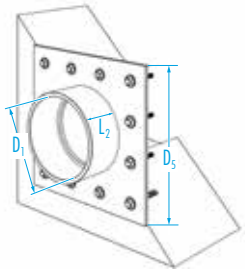
- gas and watertight
- can be combined with all Curaflex® gasket inserts
- suitable for pressurized and non-pressing water
- for buildings without tanking membranes (white tank)
- for buildings with a thick coating to be applied - contact surface "bonding flange" additionally sanded

MATERIAL

- Steel ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- with a thick coating which is still to be applied, and with sanded contact surfaces
- Delivery incl. fixing material for solid walls

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Fixed flange OD / edge length D_5 max. [mm]
Curaflex®	Curaflex Nova®		
7 – 40	5 – 40	80	260
41 – 57	5 – 63	100	280
58 – 77	–	125	300
78 – 104	63 – 112	150	330
105 – 145	108 – 160	200	380
146 – 190	154 – 201	250	430
191 – 233	–	300	480
234 – 288	–	350	530
289 – 339	–	400	580
340 – 380	–	450	630
381 – 430	–	500	680
431 – 530	–	600	780
531 – 620	–	700	880
L_2 (length of the pipe socket) [mm]: 110			
We also supply pipe sleeves in other sizes. Contact us.			

Variant: Curaflex® pipe sleeve 8000 / T - split pipe sleeve: For installation with existing duct.



ACCESSORIES - ABSOLUTELY NECESSARY!

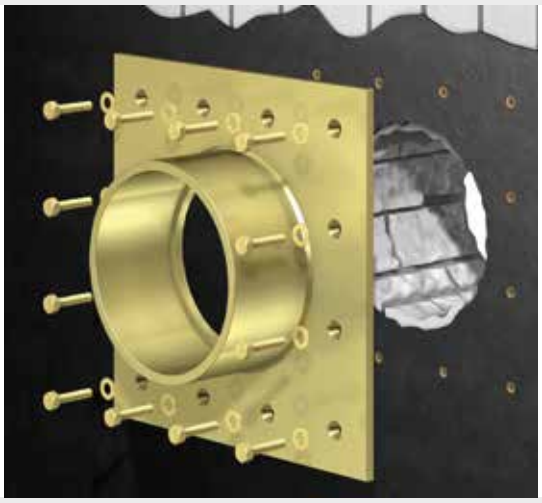
- in a split version / WP wall:
  Sealant, primer and adhesive cleaner (page 74)

Curaflex® 8000

NON PRESSING WATER

- Flange plate with sleeve for penetrations
- Application in front of the wall
- for available thick coating (black tank)
- ideal for refurbishment

25 years guarantee



PRODUCT ADVANTAGES

- Sealing on the existing hardened thick coating
- Sealing in front of the wall (condition of the bore hole not relevant)
- suitable for penetrations without a suitable core bore or pipe sleeve
- optimally designed inner wall for holding the Curaflex® gasket insert

TECHNICAL DETAILS

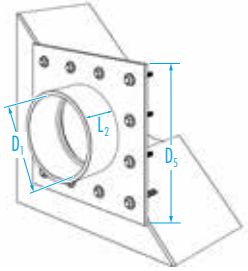
- can be combined with all Curaflex® gasket inserts
- suitable for non-pressing water
- for buildings with an existing hardened thick coating

MATERIAL

- Steel ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- Delivery incl. fixing material for solid walls and butyl sealing tape (1753)

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Fixed flange OD / edge length D_5 max. [mm]
Curaflex®	Curaflex Nova®		
7 – 40	5 – 40	80	260
41 – 57	5 – 63	100	280
58 – 77	–	125	300
78 – 104	63 – 112	150	330
105 – 145	108 – 160	200	380
146 – 190	154 – 201	250	430
191 – 233	–	300	480
234 – 288	–	350	530
289 – 339	–	400	580
340 – 380	–	450	630
381 – 430	–	500	680
431 – 530	–	600	780
531 – 620	–	700	880
L_2 (length of the pipe socket) [mm]: 110			
We also supply pipe sleeves in other sizes. Contact us.			

Variant: Curaflex® pipe sleeve 8000/T – split pipe sleeve. For installation with existing duct.



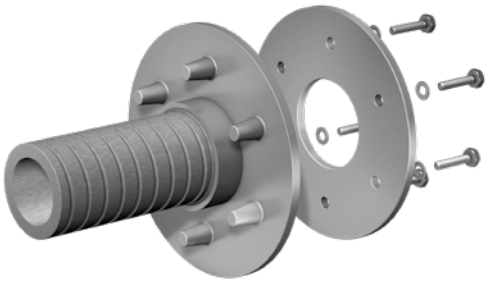
Curaflex® 4006

PRESSING WATER

- Recess for penetrations
- Use in buildings yet to be built
- for application with tanking membrane or thick coating (black tank)
- with fixed and loose flange

Leakage test
22 1618 296-01-4K
MPA NRW

25 years guarantee



PRODUCT ADVANTAGES

- optimally designed inner wall for holding the Curaflex® gasket insert
- Coefficient of expansion of the material corresponds to that of concrete
- Free of corrosion and asbestos; Dimensionally stable and resistant special fiber cement with firmly fixed and loose flange made of cast iron
- homogeneous connection to the concrete

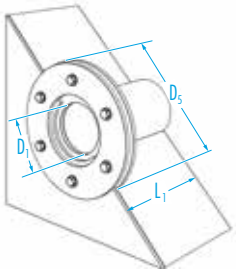
TECHNICAL DETAILS

- with fixed and loose flanges according to DIN 18195 / DIN 18533
- gas tight with an optional coating of the inner lining surface
- can be combined with all Curaflex® gasket inserts
- depending on the tanking membrane with Curaflex® packings (1775) arranged on both sides with thin and hard film or accessories for thick coating (1776):

MATERIAL

- Special fibre cement with firmly fixed and loose flange made of cast iron

Pipe/cable-OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Fixed flange OD D_5 max. [mm]	Standard lengths L_1 [mm]
Curaflex®	Curaflex Nova®			
7 – 40	5 – 40	80	440	200
41 – 57	5 – 63	100	460	240
58 – 77	–	125	480	250
78 – 104	63 – 112	150	510	300
105 – 145	108 – 160	200	560	350
146 – 190	154 – 201	250	610	365
191 – 233	–	300	660	400
				500
				650
				1000
We also supply pipe sleeves in other sizes. Contact us.				



Variant: Curaflex® 4006 / U as a bottom feed-through

ACCESSORIES

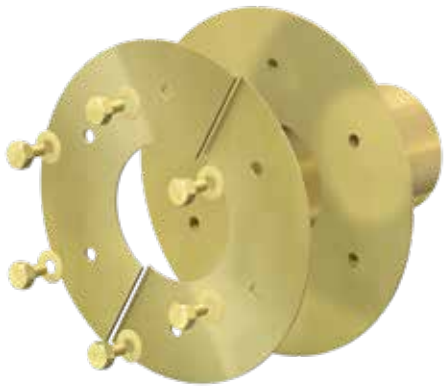
- Curaflex® packings (1775) for thin hard films (page 68)
- Accessories for thick coating (page 69)

Curaflex® 6000

PRESSING WATER

- Recess for penetrations
- Use in buildings yet to be built
- for application with tanking membrane or thick coating (black tank)
- with fixed and loose flange
- for a high static load

25 years guarantee



PRODUCT ADVANTAGES

- optimally designed inner wall for holding the Curaflex® gasket insert
- Steel pipe sleeve for high static loads with integrated fixed and loose flange (loose flange split)
- for flush mounting into the formwork

TECHNICAL DETAILS

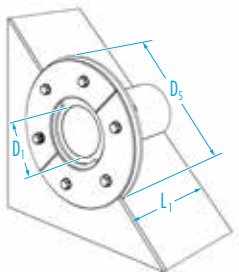
- with flanges according to DIN 18195 / DIN 18533
- gas and watertight
- can be combined with all Curaflex® gasket inserts
- depending on the tanking membrane with Curaflex® packings (1775) arranged on both sides with thin and hard film or accessories with thick coating (1776): Sanding of the contact surfaces of the fixed / loose flange

MATERIAL

- Steel ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Fixed flange OD D_5 max. [mm]	Standard lengths L_1 [mm]
Curaflex®	Curaflex Nova®			
7 – 40	5 – 40	80	440	200 240 250 300 350 365 400
41 – 57	5 – 63	100	460	
58 – 77	–	125	480	
78 – 104	63 – 112	150	510	
105 – 145	108 – 160	200	560	
146 – 190	154 – 201	250	610	
191 – 233	–	300	660	
234 – 288	–	350	710	
289 – 339	–	400	760	
340 – 380	–	450	810	
381 – 430	–	500	860	
431 – 530	–	600	960	
531 – 620	–	700	1060	
We also supply pipe sleeves in other sizes. Contact us.				

Variant: Curaflex® Pipe sleeve 6.6002 – Fixed flange with stud bolts and additional middle flange.



ACCESSORIES

- Curaflex® packings (1775) for thin hard films (page 68)
- Accessories for thick coating (page 69)

A 06.17/MT 149-1-EN

Curaflex® 7006

PRESSING WATER

- Flange plate with sleeve for penetrations
- Application in front of the wall
- for application with tanking membrane or thick coating (black tank)
- with fixed and loose flange
- ideal for refurbishment

25 years guarantee

PRODUCT ADVANTAGES

- Sealing in front of the wall (condition of the bore / wall opening not relevant)
- Suitable for penetrations without a suitable core bore or pipe sleeve
- optimally designed inner wall for holding the Curaflex® gasket insert

TECHNICAL DETAILS

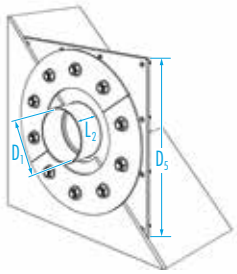
- with fixed and loose flange (loose flange split version) made of steel according to DIN 18195 / DIN 18533
- for buildings with tanking membranes/ thick coating (black tank)
- gas and watertight
- can be combined with all Curaflex® gasket inserts
- depending on the tanking membrane with Curaflex® packings (1775) arranged on both sides with thin and hard film or accessories with thick coating (1776): Sanding of the contact surfaces of the fixed / loose flange

MATERIAL

- Steel ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Fixed flange OD / edge length D_5 max. [mm]	
Curaflex®	Curaflex Nova®		Curaflex® 7006	Curaflex® 7006/T
7 – 40	5 – 40	80	440	530
41 – 57	5 – 63	100	460	550
58 – 77	–	125	480	570
78 – 104	63 – 112	150	510	600
105 – 145	108 – 160	200	560	650
146 – 190	154 – 201	250	610	700
191 – 233	–	300	660	750
234 – 288	–	350	710	800
289 – 339	–	400	760	850
340 – 380	–	450	810	900
381 – 430	–	500	860	950
431 – 530	–	600	960	1050
531 – 620	–	700	1060	1150
L_2 (length of the pipe socket) [mm]: 110				
We also supply pipe sleeves in other sizes. Contact us.				

Variant: Curaflex® Pipe sleeve 7006/T – Split version, for the installation with an existing pipeline.



ACCESSORIES

- Curaflex® packings (1775) for thin hard films (page 68)
- Accessories for thick coating (page 69)

IN CASE OF A SPLIT VERSION ABSOLUTELY NECESSARY!

- Sealant, primer and adhesive cleaner (page 74)

Curaflex® 7006/M/S

PRESSING WATER

- Flange plate with several sleeves for penetrations
- Application in front of the wall
- for application with tanking membrane or thick coating (black tank)
- ideal for refurbishment
- for multiple lines

25 years guarantee

PRODUCT ADVANTAGES

- Sealing in front of the wall (condition of the bore / wall opening not relevant)
- Suitable for penetrations without a suitable core bore or pipe sleeve
- optimally designed inner wall for holding the Curaflex® gasket insert
- Production according to specifications

TECHNICAL DETAILS

- with fixed and loose flange (loose flange split version) made of steel according to DIN 18195 / DIN 18533
- Dimensions and number of sleeves according to specification and taking into account DIN 18195 / DIN 18533
- for buildings with tanking membranes/ thick coating (black tank)
- gas and watertight
- can be combined with all Curaflex® gasket inserts
- depending on the tanking membrane with Curaflex® packings (1775) arranged on both sides with thin and hard film or accessories with thick coating (1776): Sanding of the contact surfaces of the fixed / loose flange
- other variations, e.g. with an under-length, additional flanges, in combination with UGA BKD or against non-pressing water (7005/M/S) can be manufactured for you on request

APPLICATION EXAMPLE

Suitable as a pipe sleeve for sealing of the flow and return of district heating pipes.

ACCESSORIES

- Curaflex® packings (1775) for thin hard films (page 68)
- Accessories for thick coating (page 69)

IN CASE OF A SPLIT VERSION ABSOLUTELY NECESSARY!

- Sealant, primer and adhesive cleaner (page 74)

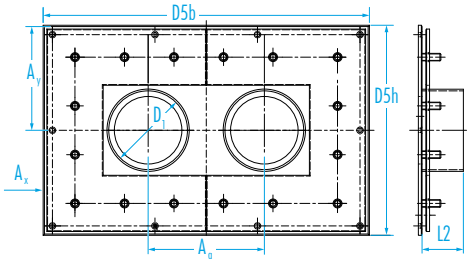
MATERIAL

- ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- with a thick coating which is still to be applied, and with sanded contact surfaces
- Delivery incl. fixing material for solid walls

VARIANT Curaflex® PIPE SLEEVE 7006/M/T/S:

Features as described above, but longitudinally-separated design. For installation with an existing pipeline; Subsequently to mount the pipes / cables.

Diameter of pipes / cables to be sealed:	d [mm]
Inner diameter pipe sleeve:	D1 [DN in mm]
Dimensions / edge length fixed flange:	D5b x D5h [mm]
Length of the pipe socket:	L2 (Standard 110 mm)
Accurate dimensioning of the axis on which the pipes / cables run:	Ay
Distances between the pipes / cables:	Aa
Distance to other components:	Ax
Type of tanking membrane or thick coating:	–



Curaflex® 4005

NON PRESSING WATER

- Recess for penetrations
- Use in buildings yet to be built
- for application with tanking membrane or thick coating (black tank)
- with fixed and loose flange

25 years guarantee

PRODUCT ADVANTAGES

- optimally designed inner wall for holding the Curaflex® gasket insert
- Coefficient of expansion of the material corresponds to that of concrete
- Free of corrosion and asbestos; Dimensionally stable and resistant special fiber cement with firmly fixed and loose flange made of cast iron
- homogeneous connection to the concrete

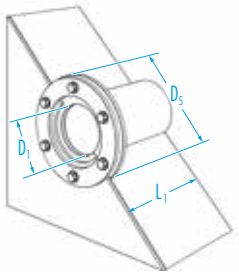
TECHNICAL DETAILS

- with fixed and loose flanges according to DIN 18195 / DIN 18533
- gas tight with an optional coating of the inner lining surface
- can be combined with all Curaflex® gasket inserts
- depending on the tanking membrane with Curaflex® packings (1775) arranged on both sides with thin and hard film or accessories for thick coating (1776):

MATERIAL

Special fibre cement with firmly fixed and loose flange made of cast iron.

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Fixed flange OD D_5 max. [mm]	Standard lengths L_1 [mm]
Curaflex®	Curaflex Nova®			
7 – 40	5 – 40	80	270	200
41 – 57	5 – 63	100	290	240
58 – 77	–	125	320	250
78 – 104	63 – 112	150	345	300
105 – 145	108 – 160	200	400	350
146 – 190	154 – 201	250	455	365
191 – 233	–	300	510	400
				500
				650
				1000
We also supply pipe sleeves in other sizes. Contact us.				



Variant: Curaflex® 4005/U as a bottom feed-through

ACCESSORIES

- Curaflex® packings (1775) for thin hard films (page 68)
- Accessories for thick coating (page 69)

Curaflex® 5000

NON PRESSING WATER

- Recess for penetrations
- Use in buildings yet to be built
- for application with tanking membrane or thick coating (black tank)
- with fixed and loose flange
- for a high static load

Leakage test
22 1618 296-01-5K
MPA NRW

25 years guarantee

PRODUCT ADVANTAGES

- optimally designed inner wall for holding the Curaflex® gasket insert
- Steel pipe sleeve for high static loads with integrated fixed and loose flange (loose flange split)
- for flush mounting into the formwork

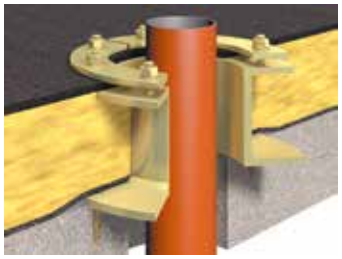
TECHNICAL DETAILS

- with fixed and loose flanges according to DIN 18195 / DIN 18533
- gas and watertight
- can be combined with all Curaflex® gasket inserts
- depending on the tanking membrane with Curaflex® packings (1775) arranged on both sides with thin and hard film or accessories with thick coating (1776): Sanding of the contact surfaces of the fixed / loose flange

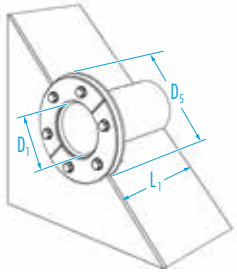
MATERIAL

- ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- with a thick coating which is still to be applied, and with sanded contact surfaces
- Delivery incl. fixing material for solid walls

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Fixed flange OD D_5 max. [mm]	Standard lengths L_1 [mm]
Curaflex®	Curaflex Nova®			
7 – 40	5 – 40	80	260	200 240 250 300 350 365 400
41 – 57	5 – 63	100	280	
58 – 77	–	125	300	
78 – 104	63 – 112	150	330	
105 – 145	108 – 160	200	380	
146 – 190	154 – 201	250	430	
191 – 233	–	300	480	
234 – 288	–	350	530	
289 – 339	–	400	580	
340 – 380	–	450	630	
381 – 430	–	500	680	
431 – 530	–	600	780	
531 – 620	–	700	880	
We also supply pipe sleeves in other sizes. Contact us.				



Variant: Curaflex® Pipe sleeve 5.5002 – Fixed flange with stud bolts and additional middle flange.



ACCESSORIES

- Curaflex® packings (1775) for thin hard films (page 68)
- Accessories for thick coating (page 69)

A 06.17/MT 149-1-EN

Curaflex® 7005

NON PRESSING WATER

- Flange plate with sleeve for penetrations
- Application in front of the wall
- for application with tanking membrane or thick coating (black tank)
- with fixed and loose flange
- ideal for refurbishment

25 years guarantee

PRODUCT ADVANTAGES

- Sealing in front of the wall (condition of the bore / wall opening not relevant)
- suitable for penetrations without a suitable core bore or pipe sleeve
- optimally designed inner wall for holding the Curaflex® gasket inserts

TECHNICAL DETAILS

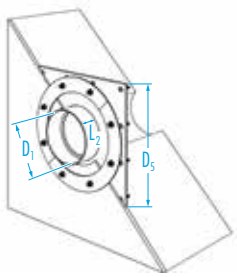
- with fixed and loose flange (loose flange split version) made of steel according to DIN 18195 / DIN 18533
- for buildings with tanking membranes/ thick coating (black tank)
- gas and watertight
- can be combined with all Curaflex® gasket inserts
- depending on the tanking membrane with Curaflex® packings (1775) arranged on both sides with thin and hard film or accessories with thick coating (1776): Sanding of the contact surfaces of the fixed / loose flange

MATERIAL

- ggv corrosion protection coating; optionally made of stainless steel 1.4301 (V2A) or 1.4571 / 1.4404 (V4A)
- with a thick coating which is still to be applied, and with sanded contact surfaces
- Delivery incl. fixing material for solid walls

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Fixed flange OD / edge length D_5 max. [mm]	
Curaflex®	Curaflex Nova®		Curaflex® 7005	Curaflex® 7005/T
7 – 40	5 – 40	80	260	340
41 – 57	5 – 63	100	280	360
58 – 77	–	125	300	380
78 – 104	63 – 112	150	330	410
105 – 145	108 – 160	200	380	460
146 – 190	154 – 201	250	430	510
191 – 233	–	300	480	560
234 – 288	–	350	530	610
289 – 339	–	400	580	660
340 – 380	–	450	630	710
381 – 430	–	500	680	760
431 – 530	–	600	780	860
531 – 620	–	700	880	960
L_2 (length of the pipe socket) [mm]: 110				
We also supply pipe sleeves in other sizes. Contact us.				

Variant: Curaflex® Pipe sleeve 7005/T – Split version, for the installation with an existing pipeline.



ACCESSORIES

- Curaflex® packings (1775) for thin hard films (page 68)
- Accessories for thick coating (page 69)

IN CASE OF A SPLIT VERSION ABSOLUTELY NECESSARY!

- Sealant, primer and adhesive cleaner (page 74)

Curaflex® 3001

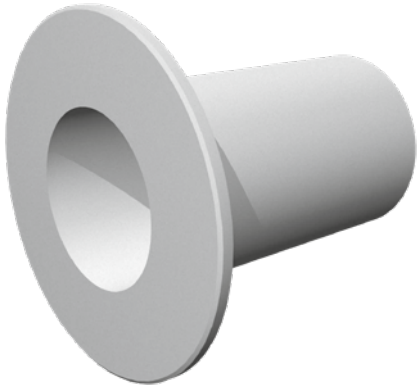
NON PRESSING WATER

PRESSING WATER

- Recess for penetrations
- Use in buildings yet to be built
- when used with sealants to be processed in liquid form (black tank)
- with bonding flange according to DIN 18533

Leakage test
22 1618 296-01-3KA
MPA NRW

25 years guarantee



PRODUCT ADVANTAGES

- dimensional stable and resistant special fibre cement
- Coefficient of expansion of the material corresponds to that of concrete
- homogeneous connection to the concrete
- optimal connection through fibre cement flange
- with bonding flange for the on-site application of a thick coating (KMB / PMBC) even with pressing water (W2.1-E)
- with bonding flange for the on-site application of a mineral sealing slurry (MDS) and a liquid plastic (FLK)
- with bonding flange for the on-site bonding of a fresh concrete composite film (FBV)

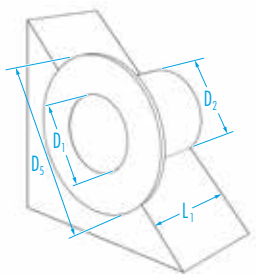
TECHNICAL DETAILS

- gas tight with an optional coating of the inner pipe sleeve and front surface
- can be combined with all Curaflex® gasket inserts
- also available in split

MATERIAL

- asbestos-free fibre cement
- fibre cement fixed flange with bonding flange according to DIN 18533
- fiber glass matting at KMB / PMBC

Pipe / cable OD d [mm]		Pipe sleeve-ID D_1 [DN in mm]	Pipe sleeve OD D_2 max. [mm]	Bonding flange OD D_5 max. [mm]
Curaflex®	Curaflex Nova®			
7 – 40	5 – 40	80	≤ 140	285
41 – 57	5 – 63	100	≤ 160	305
58 – 77	–	125	≤ 165	330
78 – 104	63 – 112	150	≤ 190	355
105 – 145	108 – 160	200	≤ 245	405
146 – 190	154 – 201	250	≤ 300	455
191 – 233	–	300	≤ 350	505
L_1: Standard length of the pipe sleeves: 415 mm				
We also supply pipe sleeves in other sizes. Contact us.				



A.06.17/MT 149-1-EN

Aquagard concrete sealant

25 years guarantee

Delivery size 1 liter

Delivery size 1/3 liter

CONCRETE NEEDS PROTECTION!

Reinforced steel must be protected against corrosion. In addition, concrete can be moistened to a certain depth before the absolute water impermeability occurs. This makes it possible for water to migrate around the gasket insert. The Aquagard concrete seal prevents this. Based on these findings, we recommend the Aquagard Preservation.

THE SYSTEM CONSISTS OF

Aquagard Primer (type 1710/1711)
Primer for Aquagard special paint

The primer penetrates deeply into the capillaries and air vesicles of the concrete, and seals them permanently watertight. In this way, water cannot migrate the gasket insert. The primer is applied with a brush or roller.

Aquagard special paint (type 1715 / 1716)
Special paint for sealing core bores

The Aquagard special paint seals the surface of the core bore wall and at the same time protects the possibly cut reinforcing steel from corrosion. The special paint is also applied with a brush or roller.

DELIVERY SIZES:

Aquagard Preservation (large)

- Aquagard primer
  1 liter for 4.0 sqm (type 1710)
- Aquagard special paint
  1 liter for 3.5 sqm (type 1715)

Aquagard Preservation (small)

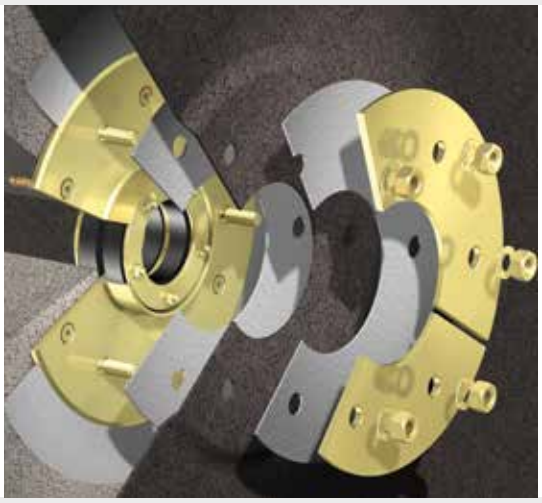
- Aquagard primer
  1/3 liter for 1.5 sqm (type 1711)
- Aquagard special paint
  1/3 liter for 1.0 sqm (type 1716)

Aquagard	Primer	Special paint
Yield	3.5 – 4.0 m²/ liters	
Colour	Colorless	dove gray
Drying time (room temp.)	approx. 1 hour	approx. 5 - 6 hours

A 06.17/MT 149-1-EN

Curaflex® packings (1775)

25 years guarantee



TECHNICAL DETAILS

Curaflex® packings, e.g. for thin and hard films (1775):
Curaflex® Packings consist of 2 pieces of 3 mm thick EPDM blanks, which are matched to the dimensions and hole circles of the selected fixed / loose flange design.

GENERAL

According to DIN 18195-9 / DIN 18533-1, single-layered, loosely laid tanking membranes must be enclosed with permanently compatible packings arranged on both sides. The tightness in fixed and loose flange designs is only ensured if the thickness and the elasticity of the tanking membrane or of the allowances is great enough so that it presses sealingly against the substrate. When laying tanking membranes, the information given by the web producers must be observed in addition to the specifications of the standard (publication directive)!

A) Application with very thin or hard tanking membranes - Curaflex® 1775

In the case of tanking membranes made of very thin and / or very hard materials, uniform pressing on the substrate is often not sufficient. When using such tanking membranes, the standard provides the use of packings. DOYMA packings are made of Elastomer EPDM which is compatible with the material, and is already fitted with the appropriate bolt holes of the fixed flange, and thus ready for installation. These appropriate packings are not included in the scope of delivery.

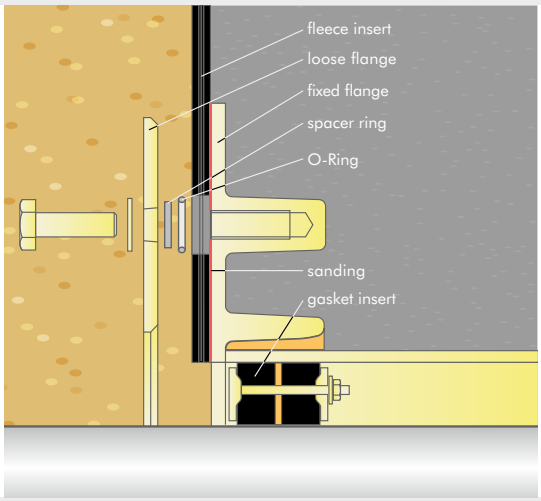
B) Application for other tanking membranes

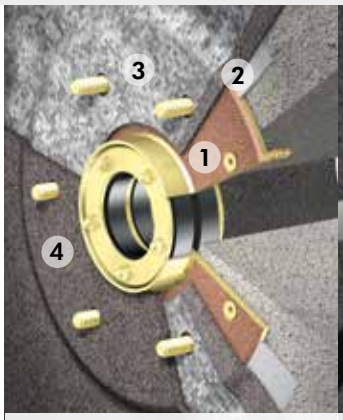
In the case of tanking membranes, for example, of bitumen or bitumen rubber, the uniform pressure on the substrate is generally present. In such cases, there are no problems with respect to the tightness. Therefore no packings are required.

A 06.17/MT 149-1-EN

Accessory set for thick coating (1776)

25 years guarantee





Layering from bottom to top: Sanding (1), thick coating (2), non-woven fabric (3), thick coating (4)

Punching the holes with the hole iron.

ACCESSORY SET FOR THICK COATINGS:

Consists of spacer rings, O-rings and fleece insert. These parts are matched to the dimension and the hole circles of the selected fixed / loose flange design.

APPLICATION DESCRIPTION

The contact surfaces/inner surface of the fixed and loose flanges of the products Curaflex® 5000, C/2/SD/5, F/2/SD/5 and Curaflex® 6000, 7000, 8000, C/2/SD/6 and F/2/SD/6 will be sanded. The carrier material used for the solder sand is WERO-POX-EP primer no. 6142 with hardener 6141-H.

The area around the holes or around the bolts, where the O-rings and the washers come to be seated may not be sanded. Diameter of these surfaces: 40 mm for non-pressing water, 55 mm for pressing water.

The Curaflex® pipe sleeves 4005 and 4006 do not require sanding. The bitumen thick coating is to be applied in several layers according to the manufacturer's instructions. After the first layer has been applied, the fleece insert, which is circumferentially 100 mm larger than the fixed flange, is pressed into the still wet layer. Subsequently, the fleece insert is wet coated so that the minimum dry-film thickness for the present load case is achieved. The bitumen filler compound, depending on the design of the fixed and loose flange construction, is then punched out in the area of the tapped holes or bolts, for example with a perforated iron, in accordance with the drying time specified by the manufacturer.

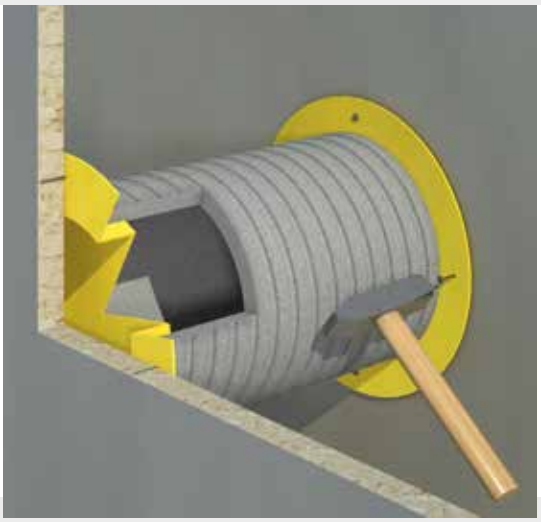
Between the flanges, spacer (special washer) rings of 4 mm thickness, with Curaflex® products against pressing water, and 3 mm thick spacer rings with Curaflex® products against non-pressing water are arranged around each bolt. This prevents the entire bitumen compounding compound from being squeezed out when the loose flange is tightened, thus achieving a defined layer thickness of the bitumen filler compound between the fixed flange and the loose flange.

Rubber O-rings are also arranged around the bolts and around the spacer rings in order to prevent possible pressure losses in the area of the bolts.

ATTENTION! WHEN INSTALLING STEEL PIPE SLEEVES IN OR ON BUILDING WALLS WITH THICK COATING, THE CONTACT SURFACES MUST BE SANDED ON THE FACTORY SIDE. IN SUCH CASES, PLEASE BE SURE TO INCLUDE THE FOLLOWING WHEN PLACING AN ORDER: "FOR THICK COATING".

Curaflex® formwork fastener (1701)

25 years guarantee



TECHNICAL DETAILS

- Support for easy and fast fixing of the pipe sleeve in the formwork.
- Provided with a wide nail edge for fastening to the formwork.
- Available for pipe sleeves up to DN 400

MATERIAL

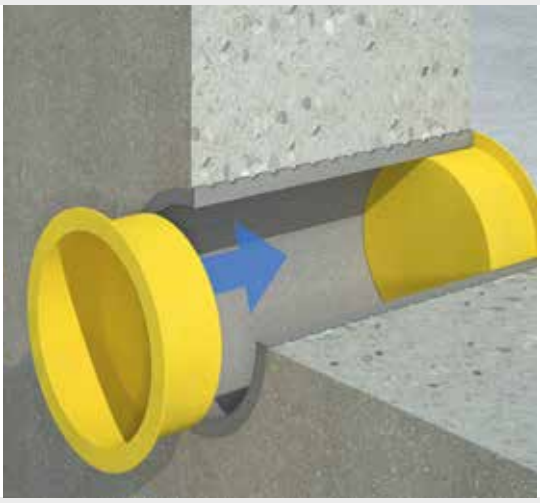
- Plastic

Inner diameter pipe sleeve [DN in mm]	Outer diameter formwork fastener [mm]	Component height [mm]
80	138	20
100	162	20
125	188	20
150	213	20
200	268	25
250	340	25
300	408	22
350	455	21
400	510	32

A.06.17/MT 149-1-EN

Curaflex® Sealing plug (1702)

25 years guarantee



TECHNICAL DETAILS

- Plugs for closing the pipe sleeve during the raw construction phase in order to prevent the penetration of dirt and foreign bodies
- Provided with a wide edge for a secure hold in the pipe sleeve
- Available for pipe sleeves up to DN 400

MATERIAL

- Plastic

Inner diameter pipe sleeve [DN in mm]	Outer diameter sealing plug [mm]	Component height [mm]
80	90	29
100	110	30
125	135	30
150	159.5	33
200	214	38
250	264	46
300	314	23
400	420	33

Curaflex®
ring closure RRV

Protection against dirt and splash water

- For the closure of annulus spaces
- Installation into preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- high variability

DOYMA GRIP

25 years guarantee

PRODUCT ADVANTAGES

- High variability through an elastic adaptation to the existing line
- simple installation
- can be ideally combined with all Curaflex® gasket inserts
- Adaptability to the media line

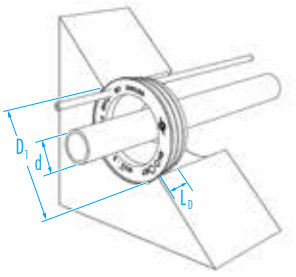
TECHNICAL DETAILS

- Permanent sight closure for core bores and pipe sleeves
- Dust and splash water protection (IP54)
- Absorption of axial movements
- manually adjustable to the media line
- DN 100 blind sealing and from 20 - 63 mm
- DN 200 blind sealing and from 108 - 160 mm

MATERIAL

- DOYMA-Grip (EPDM)

Pipe / cable OD d [mm]	Pipe sleeve / core bore ID D_1 [DN in mm]
Curaflex® RRV DN 100	
1 x 20 – 31 2 x 5 2 x 7	100 (99 – 104)
1 x 32 – 45 2 x 5 2 x 7	
1 x 46 – 63 2 x 5 2 x 7	
Curaflex® RRV DN 200	
1 x 108 – 135 2 x 5 2 x 7	200 (199 – 203)
1 x 136 – 160 2 x 5 2 x 7	
L_D (max. design length) [mm]: ≤ 85 mm	



A.06.17/MT 149-1-EN

Curaflex®
Sealing ring (1708)

Protection against dirt and splash water

- For the closure of annulus spaces
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)

DOYMA GRIP

25 years guarantee

PRODUCT ADVANTAGES

- simple installation
- can be ideally combined with all Curaflex® gasket inserts

ACCESSORIES

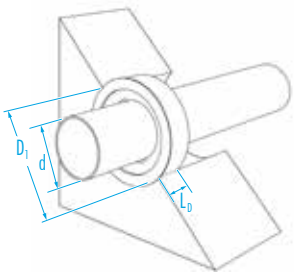
TECHNICAL DETAILS

- Permanent sight closure for core bores and pipe sleeves
- Dust and splash water protection (IP54)
- Absorption of axial movements

MATERIAL

- DOYMA-Grip (EPDM)

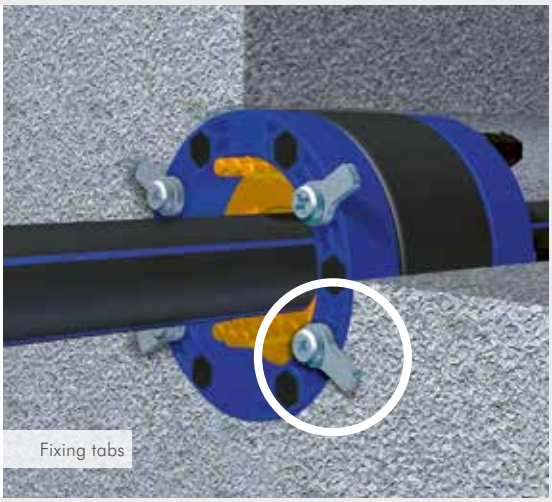
Pipe / cable OD d [mm]	Pipe sleeve / core bore ID D_1 [DN in mm]
19 – 28	77 – 82
29 – 40	77 – 82
23 – 40	97 – 102
39 – 64	97 – 102
54 – 77	122 – 128
75 – 115	147 – 153
98 – 160	197 – 203
L_D (max. design length) [mm]: ≤ 30 mm	



Adhesive, Coating, Cleaner, Primer, Sealants, Accessories Curaflex Nova ®

2-Components
Epoxy resin coating

ITL-nuts



Fixing tabs

Sikadur®-31 CF standard concrete adhesive (1740)
Adhesive for bonding the split special fibre cement pipe sleeves 3000 / T. This adhesive also joins two special fibre cement pipe sleeves to an overlapping pipe section. 1.2 kg, sufficient for approx. 0.6 m²

2-component epoxy resin coating (1745)
Epoxy resin for lining the inner lining surface, end face and core bore walls. High chemical resistance; Seals against natural gas, city gas and liquefied petroleum gas, unleaded petrol, diesel and many others, gas-tight. 2.0 kg, sufficient for approx. 2.0 m²

Butyl Sealing Tape (1753)
Elastic sealing compound for sealing on existing thick coating.

Sika® adhesive cleaner-1 (1754)
Activator and cleaner of metallic substrates for better adhesion of the sealing compound Sikaflex® -11FC+. 1 litre, sufficient for approx. 8.0 m²

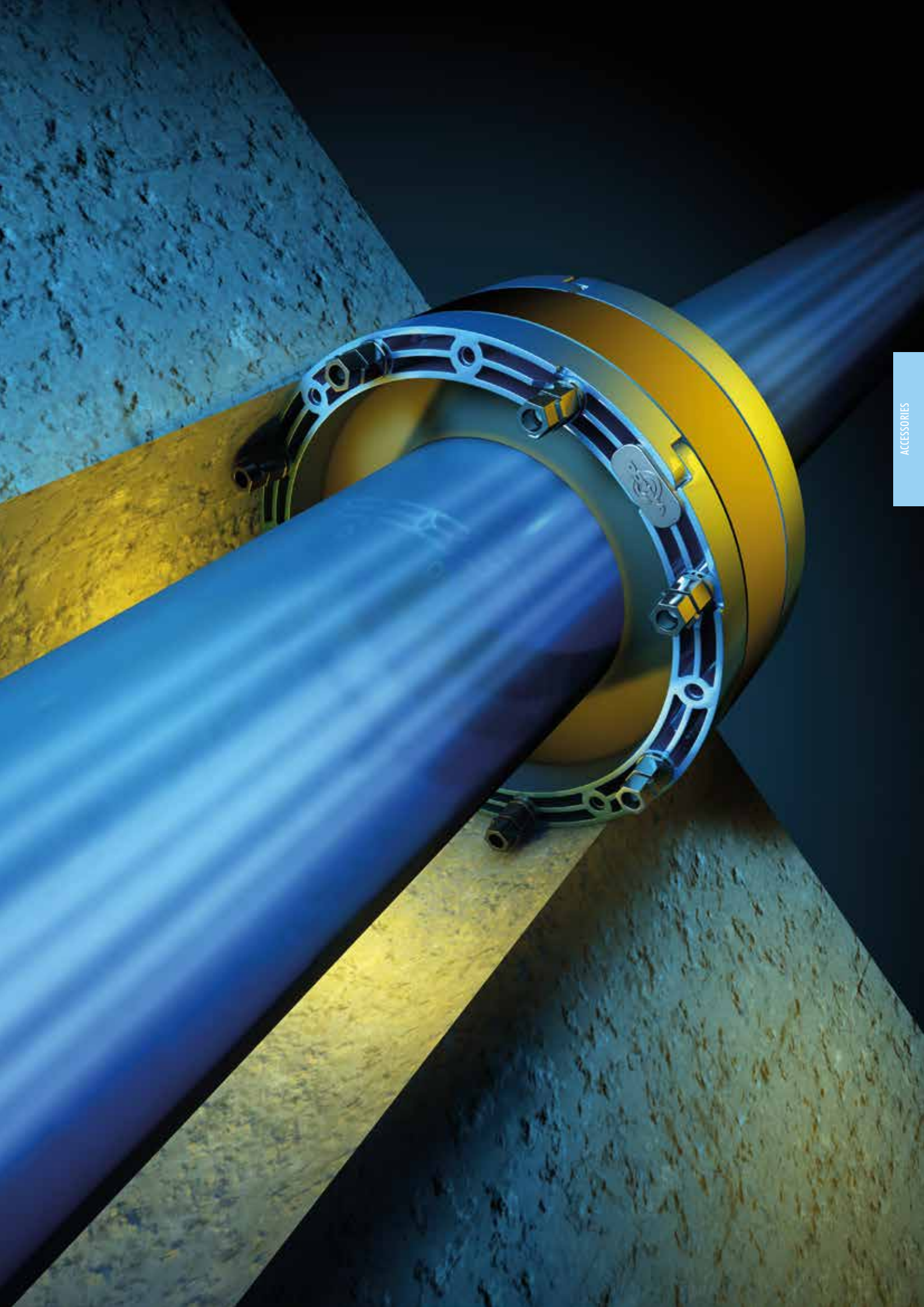
Sika® Primer-3 N (1755)
Priming of concrete to improve the adhesion of Sikaflex®-11FC+. 0.25 litre, sufficient for approx. 1.25 m².

Sealing compound Sikaflex®-11FC+ (1756)
Elastic sealing compound with excellent strength values. Movement of approx. 10%. Fast setting, permanently elastic. Excellent weather and aging-resistance. Resistant against aqueous detergents, sea water, lime water, weak acids and alkalis as well as public sewage. Cartridge 300 ml, sufficient for approx. 0.24 m².

Fixing set for the gasket inserts Curaflex Nova®
Consists of 4 fixing lugs with screws.
Item No. 1 88 0 600 004 2 9

ITL nut set for the gasket inserts Curaflex Nova®
Consisting of 9 ITL nuts.
Item No. 1 88 0 600 009 0 0

A.06.17/MT 149-1-EN



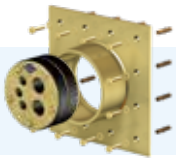
COMBINATIONS

SEALING AGAINST PRESSING WATER

COMBINATION	PRODUCT ADVANTAGES	COMPONENTS		INSERT		INSTALLATION	
		Gasket insert	Pipe sleeve	White tank	Black tank	In the Wall	in front of the wall
 Curaflex® 3800	• with ITL system for optimum contact pressure	Curaflex® Nova Uno >>> page 29	Curaflex® 3000 >>> Page 55	●		●	
 Curaflex® 3800/T	• with ITL system for optimum contact pressure • split, for already existing pipes	Curaflex® Nova Uno/T >>> Page 30	Curaflex® 3000/T >>> Page 55	●		●	
 Curaflex® 3300	• with DPS for a higher sealing performance	Curaflex® C >>> Page 36	Curaflex® 3000 >>> Page 55	●		●	
 Curaflex® 3300/T	• with DPS for a higher sealing performance • split, for already existing pipes	Curaflex® Quick In C >>> Page 37	Curaflex® 3000/T >>> Page 55	●		●	
 Curaflex® 3600	• for high hydrostatic pressure	Curaflex® F >>> Page 43	Curaflex® 3000 >>> Page 55	●		●	
 Curaflex® 8800	• for penetrations without a suitable core bore or pipe sleeve • with ITL system for optimum contact pressure	Curaflex® Nova Uno >>> page 29	Curaflex® 8000 >>> Page 57 – 58	●			●
 Curaflex® 8800/T	• ideal for the refurbishment of already laid pipes • with ITL system for optimum contact pressure	Curaflex® Nova Uno/T >>> Page 30	Curaflex® 8000/T >>> Page 57 – 58	●			●
 Curaflex® 8300	• for penetrations without a suitable core bore or pipe sleeve • with DPS for a higher sealing performance	Curaflex® C >>> Page 36	Curaflex® 8000 >>> Page 57 – 58	●			●
 Curaflex® 8300/T	• ideal for the refurbishment of already existing pipes • with DPS for a higher sealing performance	Curaflex® Quick In C >>> Page 37	Curaflex® 8000/T >>> Page 57 – 58	●			●
 Curaflex® 4806	• with ITL system for optimum contact pressure • with fixed and loose flange	Curaflex® Nova Uno >>> page 29	Curaflex® 4006 >>> Page 59		●	●	

A 06.17/MT 149-1-EN

OTHER COMBINATIONS ON REQUEST. **WE WOULD BE HAPPY TO ADVISE YOU:**
PHONE 04207/9166-300



COMBINATION	PRODUCT ADVANTAGES	COMPONENTS		INSERT		INSTALLATION	
		Gasket insert	Pipe sleeve	White tank	Black tank	In the Wall	in front of the wall
 Curaflex® 4806/U	• as bottom feed-through • with ITL system for optimum contact pressure • with fixed and loose flange	Curaflex® Nova Uno >>> page 29	Curaflex® 4006/U >>> Page 59		●	●	
 Curaflex® 4300	• with DPS for a higher sealing performance • with fixed and loose flange	Curaflex® C >>> Page 36	Curaflex® 4006 >>> Page 59		●	●	
 Curaflex® 4300/U	• as bottom feed-through • with DPS for a higher sealing performance • with fixed and loose flange	Curaflex® C >>> Page 36	Curaflex® 4006/U >>> Page 59		●	●	
 Curaflex® 6300	• with fixed and loose flange • with DPS for a higher sealing performance • for a high static load	Curaflex® C >>> Page 36	Curaflex® 6000 >>> Page 60		●	●	
 Curaflex® 7806	• for penetrations without a suitable core bore or pipe sleeve • with ITL system • with fixed and loose flange	Curaflex® Nova Uno >>> page 29	Curaflex® 7006 >>> Page 61		●		●
 Curaflex® 7806/T	• ideal for the refurbishment of already existing pipes • with ITL system • with fixed and loose flange	Curaflex® Nova Uno/T >>> Page 30	Curaflex® 7006/T >>> Page 61		●		●
 Curaflex® 7300	• for penetrations without a suitable core bore or pipe sleeve • with DPS • with fixed and loose flange	Curaflex® C >>> Page 36	Curaflex® 7006 >>> Page 61		●		●
 Curaflex® 7300/T	• ideal for the refurbishment of already existing pipes • with DPS • with fixed and loose flange	Curaflex® Quick In C >>> Page 37	Curaflex® 7006/T >>> Page 61		●		●
 Curaflex® 3801	• with bonding flange • with ITL system for optimum contact pressure	Curaflex® Nova Uno >>> page 29	Curaflex® 3001 >>> Page 66		●*	●	

* for KMB / PMBC

INSTALLATION IN THE WALL / IN FRONT OF THE WALL

The wall thickness usually suffices for the installation of a Curaflex® combination. In this case, the sealing system is also located in the wall (also applies to the sole or ceiling). If the wall is too thin, or if the effort is too great to adapt the wall penetration for the insertion of a pipe sleeve and a gasket insert, it is advisable to install it in front of the wall, especially in case of renovations.

COMBINATIONS

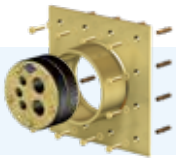
SEALING AGAINST NON-PRESSING WATER

COMBINATION	PRODUCT ADVANTAGES	COMPONENTS		INSERT		INSTALLATION	
		Gasket insert	Pipe sleeve	White tank	Black tank	in the Wall	in front of the wall
 Curaflex® 3800	• with ITL system for optimum contact pressure	Curaflex® Nova Uno >>> page 29	Curaflex® 3000 >>> Page 55	●		●	
 Curaflex® 3100	• with DPS for a higher sealing performance	Curaflex® A >>> Page 45	Curaflex® 3000 >>> Page 55	●		●	
 Curaflex® 8800	• for penetrations without a suitable core bore or pipe sleeve • with ITL system for optimum contact pressure	Curaflex® Nova Uno >>> page 29	Curaflex® 8000 >>> Page 57 – 58	●	●**		●
 Curaflex® 8800/T	• ideal for the refurbishment of already existing pipes • with ITL system for optimum contact pressure	Curaflex® Nova Uno/T >>> Page 30	Curaflex® 8000/T >>> Page 57 – 58	●	●**		●
 Curaflex® 8100	• for penetrations without a suitable core bore or pipe sleeve • with DPS for a higher sealing performance	Curaflex® A >>> Page 45	Curaflex® 8000 >>> Page 57 – 58	●	●**		●
 Curaflex® 8100/T	• ideal for the refurbishment of already existing pipes • with DPS for a higher sealing performance	Curaflex® Quick In A >>> Page 46	Curaflex® 8000/T >>> Page 57 – 58	●	●**		●
 Curaflex® 4805	• with ITL system for optimum contact pressure • with fixed and loose flange	Curaflex® Nova Uno >>> page 29	Curaflex® 4005 >>> Page 63		●	●	
 Curaflex® 4100	• with DPS for a higher sealing performance • with fixed and loose flange	Curaflex® A >>> Page 45	Curaflex® 4005 >>> Page 63		●	●	
 Curaflex® 5800	• with ITL system for optimum contact pressure • with fixed and loose flange • for a high static load	Curaflex® Nova Uno >>> page 29	Curaflex® 5000 >>> Page 64		●	●	
 Curaflex® 5100	• with fixed and loose flange • with DPS for a higher sealing performance • for a high static load	Curaflex® A >>> Page 45	Curaflex® 5000 >>> Page 64		●	●	

** with butyl sealing tape (1753) with hardened thick coating

A 06.17/MT 149-1-EN

OTHER COMBINATIONS ON REQUEST. **WE WOULD BE HAPPY TO ADVISE YOU:**
PHONE 04207/9166-300



COMBINATION	PRODUCT ADVANTAGES	COMPONENTS		INSERT		INSTALLATION	
		Gasket insert	Pipe sleeve	White tank	Black tank	In the Wall	in front of the wall
 Curaflex® 5.5802	• as a ceiling / flat roof duct • with ITL system for optimum contact pressure • with fixed and loose flange • with bonding flange as middle flange	Curaflex® Nova Uno >>> page 29	Curaflex® 5.5002 >>> Page 64		●	●	
 Curaflex® 5.5102	• as a ceiling / flat roof duct • with DPS • with fixed and loose flange • with bonding flange as middle flange	Curaflex® A >>> Page 45	Curaflex® 5.5002 >>> Page 64		●	●	
 Curaflex® 7805	• for penetrations without a suitable core bore or pipe sleeve • with ITL system • with fixed and loose flange	Curaflex® Nova Uno >>> page 29	Curaflex® 7005 >>> Page 65		●		●
 Curaflex® 7805/T	• ideal for the refurbishment of already existing pipes • with ITL system • with fixed and loose flange	Curaflex® Nova Uno/T >>> Page 30	Curaflex® 7005/T >>> Page 65		●		●
 Curaflex® 7100	• for penetrations without a suitable core bore or pipe sleeve • with DPS • with fixed and loose flange	Curaflex® A >>> Page 45	Curaflex® 7005 >>> Page 65		●		●
 Curaflex® 7100/T	• ideal for the refurbishment of already existing pipes • with DPS • with fixed and loose flange	Curaflex® Quick In A >>> Page 46	Curaflex® 7005/T >>> Page 65		●		●
 Curaflex® 3801	• with bonding flange • with ITL system for optimum contact pressure	Curaflex® Nova Uno >>> page 29	Curaflex® 3001 >>> Page 66		●	●	
 Curaflex® 3101	• with bonding flange • with DPS for a higher sealing performance	Curaflex® A >>> Page 45	Curaflex® 3001 >>> Page 66		●	●	

INSTALLATION IN THE WALL / IN FRONT OF THE WALL

The wall thickness usually suffices for the installation of a Curaflex® combination. In this case, the sealing system is also located in the wall (also applies to the sole or ceiling). If the wall is too thin, or if the effort is too great to adapt the wall penetration for the insertion of a pipe sleeve and a gasket insert, it is advisable to install it in front of the wall, especially in case of renovations.

A 06.17/MT 149-1-EN

Link-Seal® C, S316

Link chains for steel / cast iron pipes

PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- split, for already existing pipes

PRODUCT ADVANTAGES

- fast use thanks to a prefabricated system
- robust rubber parts guarantee a long service life
- the radial expansion of the rubber parts ensures a permanent, pressure-tight and secure closure of the annular space
- oil, fuel and solvent resistant or high temperature resistant, and versions with KTW approval are available
- simple, even retrofitting is possible

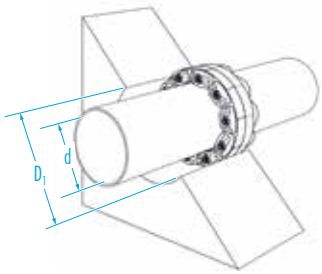
TECHNICAL DETAILS

- sealing against pressing water
- for galvanized screws: General application in normal atmosphere, water or humidity. Suitable for electr. insulation and cathode. Corrosion protection
- for stainless steel screws: High resistance to water, against most inorganic substances (acids and alkalis) and most organic substances (e.g. acetic acid and acetone)

MATERIAL

- Pressure plates: glass fiber reinforced polyamide
- Rubber material: EPDM rubber black
- Version C: Screws made of galvanized steel
- Version S316: Stainless steel screws A4-70

Single module



DN pipe sleeve / core bore [mm]	for pipe Ø [mm]	Number of elements x module type
100	48	6 x 315
	58 + 60	6 x 300
125	42 + 48	5 x 360
	60	7 x 340
	76	8 x 315
150	58 + 60	5 x 410
	89	9 x 340
	98	10 x 315
	110	7 x 310
	114	10 x 265
200	110	7 x 475
	114	7 x 410
	135	13 x 340
250	168	7 x 400
300	160	7 x 500
	210 + 219	12 x 410
	222	15 x 360
350	273	18 x 360

LINK-SEAL® PRODUCTS ARE EXCLUDED FROM THE 25 YEAR DOYMA WARRANTY.
OTHER RUBBER TYPES ON REQUEST. WE WOULD BE HAPPY TO CONSULT YOU: **PHONE 04207/9166-300.**

A.06.17/MT 149-1-EN

Link-Seal® BC, BS316

Link chains for plastic pipes

PRESSING WATER

- Sealing of penetrations
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- split, for already existing pipes

PRODUCT ADVANTAGES

- especially suitable for plastic pipes
- fast use thanks to a prefabricated system
- robust rubber parts guarantee a long service life
- the radial expansion of the rubber parts ensures a permanent, pressure-tight and secure closure of the annular space
- simple, even retrofitting is possible

TECHNICAL DETAILS

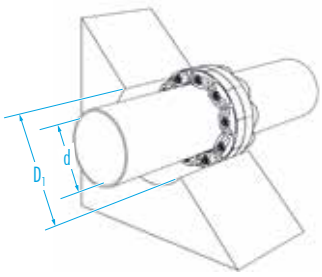
- sealing against pressing water
- for galvanized screws: General application in normal atmosphere, water or humidity. Suitable for electr. insulation and cathode. Corrosion protection
- for stainless steel screws: High resistance to water, against most inorganic substances (acids and alkalis) and most organic substances (e.g. acetic acid and acetone)

MATERIAL

- Pressure plates: glass fiber reinforced polyamide
- Rubber material: softer EPDM rubber in blue (EPDM 40° ± 5°Shore A)
- Version BC: Screws made of galvanized steel
- Version BS316: Stainless steel screws A4-70

DN pipe sleeve / core bore [mm]	for pipe Ø [mm]	Number of elements x module type
80	40	7 x 275
100	32 + 40	5 x 340
	50	6 x 315
125	63	7 x 340
	75	8 x 315
150	63	5 x 410
	90	9 x 340
	110	7 x 310
200	110	7 x 475
	125	9 x 360
	140	13 x 340

Single module



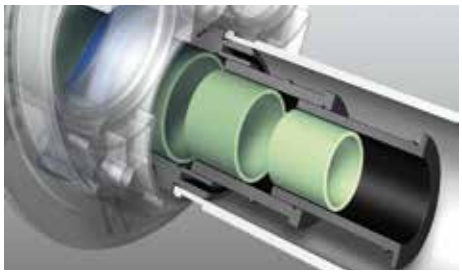
LINK-SEAL® PRODUCTS ARE EXCLUDED FROM THE 25 YEAR DOYMA WARRANTY.
OTHER RUBBER TYPES ON REQUEST. WE WOULD BE HAPPY TO CONSULT YOU: **PHONE 04207/9166-300.**

PROFESSIONAL AND SAFE

Quadro-Secura® building services duct systems

Quadro-Secura® building services duct systems are the safe solution for the installation of gas, district heating, water, electricity and telecommunication lines in single and multi-family houses. For buildings with and without a basement they are the professional design choice: compact - space-saving - gas and water-tight.

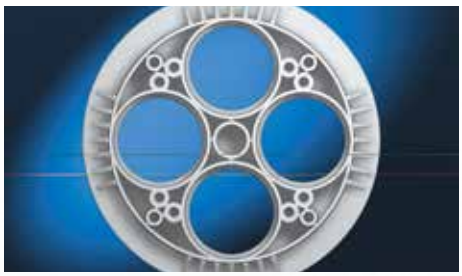
Improvised building services duct systems with pipes which are used for other purposes are not conform to the regulations, and do not correspond to the state of the art.



Modifications: always the right dimension

NEW SECURITY AND ASSEMBLY STANDARDS

The Quadro-Secura® Nova building services duct systems set new standards in terms of safety and ease of assembly. Infinitely variable modules allow a fast adaptation to line dimensions, the unique "turn-stop system" always guarantees the right torque, the special high-performance plastic offers the highest resistance to aggressive media and corrosion.



High-performance plastic: very light and extremely corrosion-resistant, electrically insulated

RANGE OF SERVICES

- approved products with DVGW (VP 601) (B1) approval
- Tested gas and pressing watertightness acc. to DIN 18322
- maximum safety through separation of all supply lines
- compact and space-saving installation of the house / mains connections and associated connection devices
- variable arrangement of the individual divisions
- subsequent replacement of the media line possible (relining)
- supply lines can be installed independently of the construction progress
- Universal sealing for all common media lines
- Cost-effective through a pipe sleeve / core bore
- Laying in a ditch
- Optional installation according to DIN 18195 / DIN 18533 possible
- Bend-resistant jacket pip for compliance with the bending radii

Turn-stop system: always the right torque

Extremely simple installation

A.06.17/MT 149-1-EN

THE SAFE AND CORRECT EXECUTION OF THE BUILDING SERVICES DUCT SYSTEMS FOR SUPPLY LINES

EXAMPLES: NON-STANDARD EXECUTION

In the area of the house and mains connections, pipes are often used in a different way (see pictures). The application as a feed-through system does not correspond to the state-of-the-art and is not suitable for a permanently safe seal according to the following regulations!

EXAMPLES: STANDARD EXECUTION

The safe and correct execution of a multi-compartment building services duct systems using the example Quadro-Secura® Basic R4+.

GUIDELINES YOU SHOULD KNOW!*

This is what the rules say (excerpts): Gas, water, electricity, telecommunication and district heating pipelines must be installed in
buildings, gas and water tightly! DIN 18012 applies to all utilities as a foundation for the planning.

GAS AND WATER HOUSE INSTALLATIONS
according to DVGW G459-1 + DVGW W 400-1 + DVGW VP 601:
building services duct systems are carried out gas and pressing water tight

ELECTRICITY
DIN 18322 VOB part C ATV for cable ducting construction (04/2010):
Cable and pipe entries in buildings are to be produced water and gas tight.

TELECOMMUNICATION
DIN 18322 VOB part C ATV for cable ducting construction (04/2010):
Cable and pipe entries in buildings are to be produced water and gas tight.

DISPOSAL
DIN 1986-100
If lines are routed through the outer walls lying in the ground, these connections must be permanently sealed gas and watertight.

DISTRICT HEATING
AGFW FW 401 + AGFW FW 419
building services duct systems must be sealed with appropriate systems; Reference to DIN 18195

* Depending on the state and the state building code, compliance may be required.

A 06.17/MT 149-1-EN

Quadro-Secura® Nova 1

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- for the utilities gas, water, electricity and telecommunications
- with additional sealing flange according to DIN 18533 (black tank)

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- non-corrosive and non-conductive through manufacturing with high-performance plastic
- gas and watertight (standard)
- Mounting without torque wrench through turn-stop system
- infinitely variable modular gaskets modal for water and energy
- extremely simple installation
- low component weight
- simple allocation of the building sealing through a symbol identification

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings with a basement
- methane gas resistant
- Dry installation
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- the entire component is freely rotatable according to the connection requirements
- relining possible when connecting jacket pipes
- Connection option for rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- all utilities are pre-allocated with gas and pressing water tight blind plugs
- with sealing flange according to DIN 18533

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 204 mm
Wall thickness	190 – 550 mm
Other dimensions on request.	

Quadro-Secura®
Nova 1/breit

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- Utilities: Gas, water, electricity and telecommunications
- with additional sealing flange according to DIN 18533 (black tank)
- Ideal for twin / element walls

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- non-corrosive and non-conductive through manufacturing with high-performance plastic
- gas and watertight (standard)
- infinitely variable modular gaskets modal for water and energy
- extremely simple installation, low component weight
- simple allocation of the building sealing through a symbol identification
- wide exterior waterproofing covering prefabricated concrete shell and core concrete

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings with a basement
- Dry installation
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- the entire component is freely rotatable according to the connection requirements
- relining possible when connecting jacket pipes
- Connection option for rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- all utilities are pre-allocated with gas and pressing water tight blind plugs
- ideal for twin / element walls
- with sealing flange according to DIN 18533

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 203 mm
Wall thickness	240 – 550 mm
Other dimensions on request.	

Quadro-Secura® Nova 2

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- for the utilities gas, water, electricity and telecommunications

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- non-corrosive and non-conductive through manufacturing with high-performance plastic
- gas and watertight (standard)
- Mounting without torque wrench through turn-stop system
- infinitely variable modular gaskets modal for water and energy
- extremely simple installation
- low component weight
- simple allocation of the multi-line sealing through symbol identification

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings with a basement
- methane gas resistant
- Dry installation
- optional installation according to DIN 18195 / DIN 18533 possible
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- the entire component is freely rotatable according to the connection requirements
- relining possible when connecting jacket pipes
- Connection of rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- all utilities are pre-allocated with gas and pressing water tight blind plugs

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 204 mm
Wall thickness	150 – 550 mm
Other dimensions on request.	

Quadro-Secura®
Nova 2/breit

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- for the utilities gas, water, electricity and telecommunications
- Ideal for twin / element walls

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- non-corrosive and non-conductive through manufacturing with high-performance plastic
- gas and watertight (standard)
- infinitely variable modular gaskets modal for water and energy
- extremely simple installation, low component weight
- simple allocation of the multi-line sealing through symbol identification
- wide exterior waterproofing covering prefabricated concrete shell and core concrete

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings with a basement
- Dry installation
- optional installation according to DIN 18195 / DIN 18533 possible
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- the entire component is freely rotatable according to the connection requirements
- relining possible when connecting jacket pipes
- Connection of rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- all utilities are pre-allocated with gas and pressing water tight blind plugs
- ideal for twin / element walls

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 203 mm
Wall thickness	240 – 550 mm
Other dimensions on request.	

Quadro-Secura® Nova 3

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on one side
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- for the utilities gas, water, electricity and telecommunications
- for thin walls

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- space-saving, cost-effective building entry
- gas and watertight (standard)
- non-corrosive and non-conductive through manufacturing with high-performance plastic
- Mounting without torque wrench through turn-stop system
- infinitely variable modular gaskets modal for water and energy
- extremely simple installation
- low component weight
- simple allocation of the multi-line sealing through symbol identification

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings with a basement
- methane gas resistant
- Dry installation
- optional installation according to DIN 18195 / DIN 18533 possible
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- the entire component is freely rotatable according to the connection requirements
- relining possible when connecting jacket pipes
- Connection of rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- all utilities are pre-allocated with gas and pressing water tight blind plugs
- for thin walls

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 204 mm
Wall thickness	90 – 150 mm
Other dimensions on request.	

Quadro-Secura®
Nova 1-M

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- with additional sealing flange according to DIN 18533 (black tank)
- for multiple assignments of different utilities

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- For multiple occupancy of individual different utilities (without gas)
- gas and watertight (standard)
- non-corrosive and non-conductive through manufacturing with high-performance plastic
- Mounting without torque wrench through turn-stop system
- infinitely variable modular gaskets modal for water and energy
- extremely simple installation, low component weight
- simple allocation of the multi-line sealing through symbol identification

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings with a basement
- methane gas resistant
- Dry installation
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- the entire component is freely rotatable according to the connection requirements
- relining possible when connecting jacket pipes
- Connection of rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- all utilities are pre-allocated with gas and pressing water tight blind plugs
- with sealing flange according to DIN 18533

Provability of the utilities		Pipe / cable Ø
optionally	Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
	Electricity	Outer diameter with 26-36 mm
	Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 204 mm
Wall thickness	190 – 550 mm
Other dimensions on request.	

Quadro-Secura® Nova 2-M

for buildings with a basement

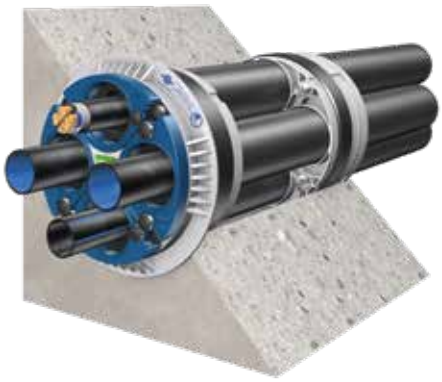
PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- for multiple assignments of different utilities

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee



PRODUCT ADVANTAGES

- For multiple occupancy of individual different utilities (without gas)
- gas and watertight (standard)
- non-corrosive and non-conductive through manufacturing with high-performance plastic
- Mounting without torque wrench through turn-stop system
- infinitely variable modular gaskets modal for water and energy
- extremely simple installation, low component weight
- simple allocation of the building sealing through a symbol identification

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings with a basement
- methane gas resistant
- Dry installation
- optional installation according to DIN 18195 / DIN 18533 possible
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- the entire component is freely rotatable according to the connection requirements
- relining possible when connecting jacket pipes
- Connection of rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- all utilities are pre-allocated with gas and pressing water tight blind plugs

Provability of the utilities		Pipe / cable Ø
optionally	Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
	Electricity	Outer diameter with 26-36 mm
	Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 204 mm
Wall thickness	150 – 550 mm
Other dimensions on request.	

Quadro-Secura® Nova V

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system for wet installation
- Application in preinstalled pipe sleeve or core bore in waterproof concrete (white tank)
- for the utilities gas, water, electricity and telecommunications

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- non-corrosive and non-conductive through manufacturing with high-performance plastic
- gas and watertight (standard)
- Mounting without torque wrench through turn-stop system
- infinitely variable modular gaskets modal for water and energy
- extremely simple installation
- low component weight
- simple allocation of the multi-line sealing through symbol identification

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings with a basement
- methane gas resistant
- Wet installation
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- the entire component is freely rotatable according to the connection requirements
- relining possible when connecting jacket pipes
- Connection of rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- all utilities are pre-allocated with gas and pressing water tight blind plugs

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 204 mm
Wall thickness	180 – 550 mm
Other dimensions on request.	

Quadro-Secura® MF

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- Utilities: Gas, water, electricity and telecommunications
- with additional sealing flange according to DIN 18533 (black tank)
- with an integrated leak test

Test certificate DV-4541 CQ 0532 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- with connection for leak test
- gas and watertight (standard)
- Mounting without torque wrench
- infinitely variable modular gaskets modal for water and energy
- simple installation

TECHNICAL DETAILS

- DVGW approved
- Installation in buildings with a basement
- Dry installation
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- relining possible when connecting jacket pipes
- Connection of rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- the exact contact pressure is indicated by control pins
- with sealing flange according to DIN 18533

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm
Electricity	Outer diameter with 20-34 mm
Telecommunications	Outer diameter: 1 x 5 – 13 mm, 1 x 14 – 21 mm, 3 x 7 – 13 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 203 mm
Wall thickness	130 – 500 mm
Other dimensions on request.	

Quadro-Secura® MG

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- for the utilities gas, water, electricity and telecommunications
- with an integrated leak test

Test certificate
DV-4541 CQ 0532
DVGW

25 years guarantee

PRODUCT ADVANTAGES

- with connection for leak test
- gas and watertight (standard)
- Mounting without torque wrench
- infinitely variable modular gaskets modal for water and energy
- simple installation

TECHNICAL DETAILS

- DVGW approved
- Installation in buildings with a basement
- Dry installation
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- relining possible when connecting jacket pipes
- Connection of rigid or flexible jacket pipes
  DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- the exact contact pressure is indicated by control pins

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm
Electricity	Outer diameter with 20-34 mm
Telecommunications	Outer diameter: 1 x 5 – 13 mm, 1 x 14 – 21 mm, 3 x 7 – 13 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 203 mm
Wall thickness	130 – 500 mm
Other dimensions on request.	

Quadro-Secura® MG 2

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- for the utilities gas, water, electricity and telecommunications
- with an integrated leak test
- for twin / element walls

Test certificate DV-4541 CQ 0532 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- ideal for twin / element walls
- gas and watertight (standard)
- with connection for leak test
- Mounting without torque wrench
- infinitely variable modular gaskets modal for water and energy
- simple installation
- wide exterior waterproofing covering prefabricated concrete shell
  and core concrete

TECHNICAL DETAILS

- DVGW approved
- Installation in buildings with a basement
- Dry installation
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- relining possible when connecting jacket pipes
- Connection of rigid or flexible jacket pipes
  DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- the exact contact pressure is indicated by control pins
- ideal for twin / element walls

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm
Electricity	Outer diameter with 20-34 mm
Telecommunications	Outer diameter: 1 x 5 – 13 mm, 1 x 14 – 21 mm, 3 x 7 – 13 mm

Building	Dimensions
core bore / pipe sleeve Ø	199 – 203 mm
Wall thickness	240 – 500 mm
Other dimensions on request.	

Quadro-Secura®
Nova 1-FW

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- with additional sealing flange according to DIN 18533 (black tank)
- for the utilities gas, water, electricity and telecommunications

25 years guarantee

PRODUCT ADVANTAGES

- infinitely variable modular gaskets modal for water and energy
- gas and watertight (standard)
- extremely simple installation
- space-saving building entry of the supply lines
- simple allocation of the multi-line sealing through symbol identification
- Mounting possible without torque wrench

TECHNICAL DETAILS

- Installation in buildings with a basement
- Dry installation
- Can be installed in core bores or pipe sleeves with an inner diameter of 298 - 304 mm
- District heating supply and return in one or two jacket pipes
- the leak-proofing of the district/geothermal pipes, water pipes, electricity and telecommunication cables is independent from the individual utilities
- variable arrangement of the individual divisions
- infinitely adjustable for wall thicknesses of 200 - 550 mm
- no additional outside seal required
- Connection option for rigid or flexible jacket pipes DN 75 and DN 125. Larger or smaller dimensions are possible via expansion sleeves or reductions
- optical control of the tightening torque via control pins
- with sealing flange according to DIN 18533

Supply lines	Pipe / cable Ø
Local and district heating or Geothermal heating	Outer diameter 75 mm, 90 mm, 110 mm Outer diameter 32 mm, 40 mm, 50 mm (specify when ordering)
Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm
Building	**Dimensions**
core bore / pipe sleeve Ø	298 – 304 mm
Wall thickness	200 – 550 mm
Other dimensions on request.	

Variant: Quadro-Secura® Nova 1-FW/breit for twin / element walls

Quadro-Secura® Nova 2-FW

for buildings with a basement

PRESSING WATER

- Multi-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- for the utilities district/geothermal heating, water, electricity and telecommunications

25 years guarantee

PRODUCT ADVANTAGES

- infinitely variable modular gaskets modal for water and energy
- gas and watertight (standard)
- extremely simple installation
- space-saving building entry of the supply lines
- simple allocation of the multi-line sealing through symbol identification
- Mounting possible without torque wrench

TECHNICAL DETAILS

- Installation in buildings with a basement
- Dry installation
- Can be installed in core bores or pipe sleeves with an inner diameter of 298 - 304 mm
- District heating supply and return in one or two jacket pipes
- the leak-proofing of the district/geothermal pipes, water pipes, electricity and telecommunication cables is independent from the individual utilities
- variable arrangement of the individual divisions
- infinitely adjustable for wall thicknesses of 200 - 550 mm
- no additional outside seal required
- Connection option for rigid or flexible jacket pipes DN 75 and DN 125. Larger or smaller dimensions are possible via expansion sleeves or reductions
- optical control of the tightening torque via control pins

Supply lines	Pipe / cable Ø
Local and district heating or Geothermal heating	Outer diameter 75 mm, 90 mm, 110 mm Outer diameter 32 mm, 40 mm, 50 mm (specify when ordering)
Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm
Building	**Dimensions**
core bore / pipe sleeve Ø	298 – 304 mm
Wall thickness	200 – 550 mm
Other dimensions on request.	

Variant: Quadro-Secura® Nova 2-FW / breit for twin / element walls

A.06.17/MT 149-1-EN

Quadro-Secura® E 1

for buildings with a basement

PRESSING WATER

- Single-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- Utilities: Gas, water, electricity and telecommunications
- with additional sealing flange according to DIN 18533 (black tank)

Test certificate DV-4543 BT 0105 DVGW

25 years guarantee


for water


for telecom.


for electricity


for gas


for X-LWL

PRODUCT ADVANTAGES

- infinitely variable modular gaskets modal for water or energy
- gas and watertight (standard)
- simple installation
- Connection option for rigid or flexible jacket pipes DN 75
- low component weight
- simple allocation of the multi-line sealing through symbol identification

TECHNICAL DETAILS

- DVGW approved
- Installation in buildings with a basement
- methane gas resistant
- Dry installation
- relining possible when connecting jacket pipes
- Connection option for rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- the trade is pre-allocated with gas and pressing water tight blind plugs
- with sealing flange according to DIN 18533

Supply lines	Pipe / cable Ø
Gas or	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water or	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Current or	Outer diameter with 26-36 mm
Telecommunication or	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm
for X-LWL (electricity, water, telecommunication, optical fiber)	Outer diameter: 1 x 23 – 40, 1 x 12 – 16, 2 x 7 – 13 and 2 x 5 – 7 mm

Building	Dimensions
core bore / pipe sleeve Ø	99 – 103 mm
Wall thickness	130 – 550 mm
Other dimensions on request.	


Variant: Quadro-Secura® E 1 / breit for gas for twin / element walls

BUILDING SERVICES DUCT SYSTEMS

Quadro-Secura® E 2

for buildings with a basement

PRESSING WATER

- Single-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- for the utilities gas, water, electricity and telecommunications

Test certificate DV-4543 BT 0105 DVGW

25 years guarantee


for gas


for telecom.


for electricity


for water


for X-LWL

PRODUCT ADVANTAGES

- infinitely variable modular gaskets modal for water or energy
- gas and watertight (standard)
- simple installation
- Connection option for rigid or flexible jacket pipes DN 75
- low component weight
- simple allocation of the building sealing through a symbol identification

TECHNICAL DETAILS

- DVGW approved
- Installation in buildings with a basement
- methane gas resistant
- optional installation according to DIN 18195 / DIN 18533 possible
- Dry installation
- relining possible when connecting jacket pipes
- Connection option for rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- the trade is pre-allocated with gas and pressing water tight blind plugs

Supply lines	Pipe / cable Ø
Gas or	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water or	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Current or	Outer diameter with 26-36 mm
Telecommunication or	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm
for X-LWL (electricity, water, telecommunication, optical fiber)	Outer diameter: 1 x 23 – 40, 1 x 12 – 16, 2 x 7 – 13 and 2 x 5 – 7 mm

Building	Dimensions
core bore / pipe sleeve Ø	99 – 103 mm
Wall thickness	130 – 550 mm
Other dimensions on request.	


Variant: Quadro-Secura® E 2 / breit for X-LWL for twin / element walls

A 06.17/MT 149-1-EN

Quadro-Secura® E-S

for buildings with a basement

PRESSING WATER

- Single-compartment building services duct system sealing on both sides
- Application in preinstalled pipe sleeve or core bore in water-proof concrete (white tank)
- For the trade gas
- without jacket pipe connection

Test certificate
DV-4540 BT 0396
DVGW

25 years guarantee

PRODUCT ADVANTAGES

- additional mechanical fixation is unnecessary
- gas and watertight (standard)
- permanently sealed without the need for subsequent tensioning (maintenance-free)
- weather-independent installation

TECHNICAL DETAILS

- DVGW approved
- Extraction and torsion safety according to DVGW VP 601
- Installation in buildings with a basement
- Installation optional acc. to DIN 18195 / DIN 18533

THE BUILDING SERVICES DUCT SYSTEM CONSISTS OF:

- a gasket insert with large ring, mounted in the interior of the cellar and a gasket insert mounted in the outer area of the building wall

Gas HEK type	DN [mm]	Core bore / pipe sleeve [DN in mm]	Wall thickness [mm]
RMA	25	100	≥ 90
	32 – DN 50	150	≥ 140
Schuck	25	125	≥ 180
	32 – DN 50	150	≥ 140
VAF-Voigt	25	100	≥ 140
	50	150	≥ 140
Burger	25 and 32	100	≥ 140
Other dimensions on request.			

Installation situation Quadro-Secura® E-S

Quadro-Secura® MIS 40

for buildings with a basement

NON PRESSING WATER

- Single-entry building services duct system with injection system
- Application in the most common wall types with a sealing according to DIN 18195-4 / DIN 18533 W1-E or for WP concrete core bore (white tank)
- for fiber optic cables or telecommunication lines

25 years guarantee

PRODUCT ADVANTAGES

- ideal for sealing on existing bitumen coatings
- Compression and sealing with resin injection via an integrated membrane system
- can also be used with common hollow blocks without backfilling
- short assembly times
- ideal for building refurbishment

TECHNICAL DETAILS

- gas and watertight to 1 bar
- for an open construction
- integrated blind seal
- without additional shrinking
- for borings in the most common wall types of DIN 18195-4 / DIN 18533 W1-E or for WP concrete core bore (white tank)

THE BUILDING SERVICES DUCT SYSTEM CONSISTS OF:

- Quadro-Secura® MIS 40
- Wall termination sleeve
- Grid bow
- Expansion resin
- Quick clamping device

Supply lines	Diameter of the lines
Fiber optic cables / pipes	2 x 5 – 7 mm or 1 x 9 – 12 mm

Building	Dimensions
core bore / pipe sleeve Ø	40 – 50 mm
Wall thickness	200 – 900 mm, optional 900 – 1200 mm
Other dimensions on request.	

A 06.17/MT 149-1-EN

Quadro-Secura® MIS 60 D

for buildings with a basement

NON PRESSING WATER

- Single-entry building services duct system with injection system
- Application in the most common wall types with a sealing according to DIN 18195-4 / DIN 18533 W1-E or for WP concrete core bore (white tank)
- for fiber optic cables or telecommunication lines

25 years guarantee

PRODUCT ADVANTAGES

- ideal for sealing on existing bitumen coatings
- Compression and sealing with resin injection via an integrated membrane system
- can also be used with common hollow blocks without backfilling
- short assembly times
- ideal for building refurbishment

TECHNICAL DETAILS

- gas and watertight to 1 bar
- for an open construction
- integrated blind seal
- without additional shrinking
- for borings in the most common wall types of DIN 18195-4 / DIN 18533 W1-E or for WP concrete core bore (white tank)

THE BUILDING SERVICES DUCT SYSTEM CONSISTS OF:

- Quadro-Secura® MIS 60 D
- Wall termination sleeve
- Grid bow (only for cable Ø 5 - 12 mm)
- Expansion resin
- Quick clamping device
- Basic body for cables with a diameter of 30 - 34 mm
- for deviating line diameter with selectable changeover (see accessories)

Supply lines	Diameter of the lines
Fiber optic cable / electric cable	30 – 34 mm or 24 – 30 mm or 18 – 24 mm or 12 – 18 mm or 6 – 12 mm or 4 x 5 mm – 7 mm (please specify when ordering)

Building	Dimensions
core bore / pipe sleeve Ø	62 – 65 mm
Wall thickness	200 – 900 mm optional 900 – 1200 mm
Other dimensions on request.	

Quadro-Secura® MIS 90

for buildings with a basement

NON PRESSING WATER

- Single-entry building services duct system with injection system
- Application in the most common wall types with a sealing according to DIN 18195-4 / DIN 18533 W1-E or for WP concrete core bore (white tank)
- for all cable types or water lines

25 years guarantee

PRODUCT ADVANTAGES

- allows the simultaneous installation of electricity or water and telecommunications
- ideal for sealing on existing bitumen coatings
- Compression and sealing by resin injection via an integrated membrane system
- can also be used with common hollow blocks without back-filling
- short assembly times
- ideal for building refurbishment

TECHNICAL DETAILS

- gas and watertight to 1 bar
- for an open construction
- for the most common pipe and cable diameters
- integrated blind seal
- without additional shrinking
- for borings in the most common wall types of DIN 18195-4 / DIN 18533 W1-E or for WP concrete core bore (white tank)

THE BUILDING SERVICES DUCT SYSTEM CONSISTS OF:

- Quadro-Secura® MIS 90
- Wall termination sleeve
- Expansion resin
- Quick clamping device
- selectable cuff plug (see accessories)

Supply lines	Diameter of the lines
Gas, water, electricity or telecommunications	1 x (24 – 40 mm) and 3 x (7 – 12 mm) or 1 x (24 - 52 mm) (please specify when ordering)

Building	Dimensions
core bore / pipe sleeve Ø	92 – 102 mm
Wall thickness	200 – 900 mm optional 900 – 1200 mm
Other dimensions on request.	

A.06.17/MT 149-1-EN

Quadro-Secura®
MIS 100/58-64

for buildings with a basement

NON PRESSING WATER

- Single-entry building services duct system with injection system
- Application in the most common wall types with a sealing according to DIN 18195-4 / DIN 18533 W1-E or for WP concrete core bore (white tank)
- for the trade gas

Test certificate
DV-4540 CL 0272
DVGW

25 years guarantee

PRODUCT ADVANTAGES

- allows the simultaneous installation of gas building services duct system combinations or fiberglass cables/pipes
- ideal for sealing on existing bitumen coatings
- Compression and sealing by resin injection via an integrated membrane system
- can also be used with common hollow blocks without backfilling
- short assembly times
- ideal for building refurbishment
- additional mechanical fixation is unnecessary

TECHNICAL DETAILS

- DVGW approved
- gas and watertight to 1 bar
- for an open construction
- suitable for gas building services duct system combinations RMA / Schuck
- for borings in the most common wall types of DIN 18195-4 / DIN 18533 W1-E or for WP concrete core bore (white tank)

Supply lines	Gas HEK type
Gas	RMA or Schuck DN 25

Building	Dimensions
core bore / pipe sleeve Ø	99 – 103 mm
Wall thickness	240 – 600 mm

THE BUILDING SERVICES DUCT SYSTEM CONSISTS OF:

- Quadro-Secura® MIS 100/58-64 (packing unit 6 pieces)
- Expansion resin

ACCESSORIES - ABSOLUTELY NECESSARY!

- Quick clamping device
- Wall termination sleeve

Quadro-Secura® Nova BP+

for buildings without a basement

PRESSING WATER

- Multi-compartment building services duct system as a round version
- Use in buildings yet to be built
- For the utilities gas, water, electricity and telecommunications, or for the multiple allocation of individual different utilities (without gas)

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

installation part
Quadro-Secura® Nova BP-I+

Cast-in part
Quadro-Secura® Nova BP-R

PRODUCT ADVANTAGES

- non-corrosive and non-conductive through manufacturing with high-performance plastic
- gas and watertight (standard)
- infinitely variable modular gaskets modal for water and energy
- space-saving building entry of the supply lines, and simple allocation of the industrial seal through a symbol identification
- bend-resistant and leak-proof jacket pipes to maintain the bending radius
- Mounting without torque wrench through turn-stop system
- later replacement of the media line possible (Relining)

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings without a basement
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- the entire component is freely rotatable according to the connection requirements
- Connection option for rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- suitable for the immediate installation in the floor slab or for a later installation in a recess of the floor slab
- variable height adjustment to the finished floor level up to 130 mm is possible
- For supply lines with Ø ≥ 50 mm, we recommend
- Use of jacket pipe DN 110
- optional installation according to DIN 18195 / DIN 18533
- Cast-in part consisting of a plastic pipe sleeve DN 200 and 4 connecting sleeves with integrated bend-proof jacket pip DN 75 (inner diameter 70 mm, 2000 mm long) and a height-adjustable ground spike.
- all utilities are pre-allocated with gas and pressing water tight blind plugs

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm
Other dimensions on request.	

A 06.17/MT 149-1-EN

Quadro-Secura® Basic R4+

for buildings without a basement

PRESSING WATER

- Multi-compartment building services duct system as a series version
- Use in buildings yet to be built
- for four utilities: Gas, water, electricity and telecommunications, or for the multiple allocation of individual different utilities (without gas)

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

installation part
Quadro-Secura® Basic-MB-R4+

Cast-in part
Quadro-Secura® Basic-FUBO-E-R4+

PRODUCT ADVANTAGES

- compact and space saving by means of a row arrangement
- gas and watertight (standard)
- infinitely variable modular gaskets modal for water and energy
- simple installation
- simple allocation of the multi-line sealing through symbol identification
- bend-resistant and leak-proof jacket pipes to maintain the bending radius
- Mounting without torque wrench through turn-stop system
- later replacement of the media line possible (Relining)

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings without a basement
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- Connection option for rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- suitable for the immediate installation in the floor slab or for later installation in a recess of the floor slab
- variable height adjustment to the finished floor level up to 130 mm is possible
- Cast-in part consisting of a plastic pipe sleeve in an in-line configuration, and 4 connecting sleeves with integrated bend-proof jacket pip DN 75 (inner diameter 70 mm, 2000 mm long, other lengths possible) and height-adjustable ground spike.
- all utilities are pre-allocated with gas and pressing water tight blind plugs

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm;
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm
Other dimensions on request.	

Quadro-Secura® Basic R2, R3, R5

for buildings without a basement

PRESSING WATER

- Multi-compartment building services duct system as a series version
- Use in buildings yet to be built
- for 2 - 5 utilities: Gas, water, electricity and telecommunications, or for the multiple allocation of 2 – 5 individual different utilities

Test certificate 06-025-6 SVGW

Test certificate DV-4541 BQ 0130 DVGW

25 years guarantee

PRODUCT ADVANTAGES

- compact and space saving by means of a row arrangement
- gas and watertight (standard)
- infinitely variable modular gaskets modal for water and energy
- simple installation
- simple allocation of the multi-line sealing through symbol identification
- bend-resistant and leak-proof jacket pipes to maintain the bending radius
- Mounting without torque wrench through turn-stop system
- later replacement of the media line possible (Relining)

TECHNICAL DETAILS

- DVGW and SVGW approved
- Installation in buildings without a basement
- 100% trade separation, each department is sealed separately
- variable arrangement of the individual divisions
- Connection option for rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- suitable for the immediate installation in the floor slab or for later installation in a recess of the floor slab
- variable height adjustment to the finished floor level up to 130 mm is possible
- For supply lines with Ø ≥ 50 mm, we recommend the
- Use of jacket pipe DN 110.
- Cast-in part consisting of a plastic pipe sleeve in an in-line configuration, and 2-5 connecting sleeves with integrated bend-proof jacket pip DN 75 (inner diameter 70 mm, 2000 mm long, other lengths possible) and height-adjustable ground spike.
- all utilities are pre-allocated with gas and pressing water tight blind plugs

Supply lines	Pipe / cable Ø
Gas	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water	Outer diameter 32 mm, 40 mm, 50 mm;
Electricity	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm
Other dimensions on request.	

Quadro-Secura® E-BP

for buildings without a basement

PRESSING WATER

- Single-building services duct system as a round version
- Use in buildings yet to be built
- for the utilities gas, water, electricity and telecommunications

Test certificate
DV-4543 BT 0105
DVGW

25 years guarantee

PRODUCT ADVANTAGES

- rule compliant floor slab penetration
- gas and watertight (standard)
- infinitely variable modular gaskets modal for water and energy
- simple installation
- low component weight
- bend-resistant and leak-proof jacket pipes to maintain the bending radius
- later replacement of the media line possible (Relining)

TECHNICAL DETAILS

- DVGW approved
- Installation in buildings without a basement
- methane gas resistant
- optional installation according to DIN 18195 / DIN 18533 possible
- Connection option for rigid or flexible jacket pipes DN 75. Larger or smaller diameters are possible via expansion sleeves or reductions
- suitable for the immediate installation in the floor slab or for a later installation in a recess of the floor slab
- For supply lines with Ø ≥ 50 mm, we recommend the use of jacket pipe DN 110.
- Cast-in part consisting of a plastic pipe sleeve DN 100 and 1 connecting sleeves with integrated bend-proof jacket pip DN 75 (inner diameter 70 mm, 2000 mm long and a height-adjustable ground spike.
- the trade is pre-allocated with gas and pressing water tight blind plugs

Supply lines	Pipe / cable Ø
Gas or	Gas building services duct system RMA, Schuck, VAF Voigt, Burger, Jeschke: DN 25 (other dimensions on request)
Water or	Outer diameter 32 mm, 40 mm, 50 mm; optional outer diameter 63 mm
Current or	Outer diameter with 26-36 mm
Telecommunications	Outer diameter: 2 x 5 – 7 mm, 3 x 7 – 13 mm, 1 x 14 – 18 mm and 1 x 19 – 22 mm
for X-LWL (electricity, water, telecommunication, optical fiber)	Outer diameter: 1 x 23 – 40 mm, 1 x 12 – 16 mm, 2 x 7 – 13 mm and 2 x 5 – 7 mm
Other dimensions on request.	

A 06.17/MT 149-1-EN

Quadro-Secura® SD

for buildings without a basement

NON PRESSING WATER

- Single-entry building services duct system with injection system
- Use as diagonal bushing in concrete floor slabs
- for all cable types or water lines

25 years guarantee

PRODUCT ADVANTAGES

- suitable for the subsequent installation of electricity or water through floor slabs
- short assembly times
- ideal for building refurbishment

TECHNICAL DETAILS

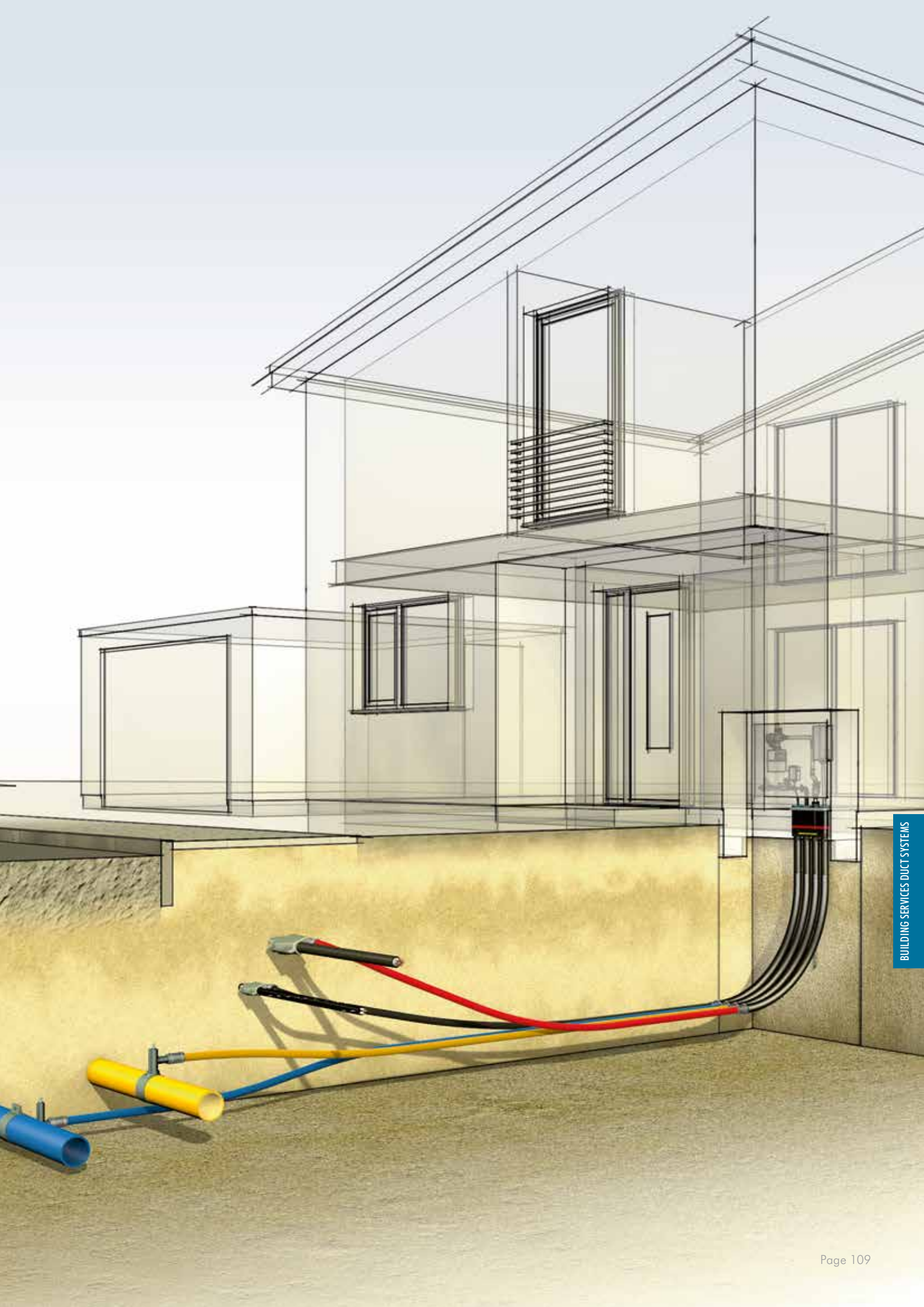
- Installation as inclined entry in floor slabs
- gas and watertight
- for an open construction
- for the most common pipe and cable diameters
- integrated blind seal
- without additional shrinking
- suitable for drilling in concrete floor slabs of the load class 2 according to the WP directive

Supply lines	Cable Ø [mm]
Water or electricity	26 – 50
Building	**Dimensions**
core bore / pipe sleeve Ø	99 – 104 mm
Wall thickness	200 – 1200 mm
Other dimensions on request.	

THE BUILDING SERVICES DUCT SYSTEM CONSISTS OF:

- Quadro-Secura® SD
- Expansion resin

A.06.17/MT 149-1-EN



Accessories for single and multi-compartment building services duct systems

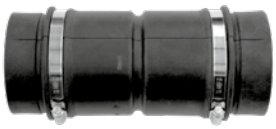
Jacket pip end plugs (2704)
DN 75 for the sealing of jacket pipes and lines

Jacket pip end plugs (2704)
DN 125 for sealing the jacket pipes and lines

Double sleeve (2707)
To connect and extend the cable protection pipes (2775). Not suitable for flexible jacket pips

Threading tips (2711)

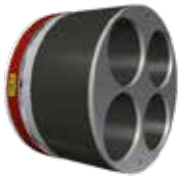
Connecting sleeve (2726)
DN 75 + DN 125 for the extension of the bend-resistant jacket pips



Connecting sleeve (2726)
DN75 + DN90 for the extension of the bend-resistant jacket pips

Transition sleeve (2709)
DN 110 / 75 for the extension of jacket pipes DN 75 to DN 110

Outer seal
Quadro-Secura® Nova 1/breit



Outer seal
for Quadro-Secura®
Nova 2/breit

Outer seal
for Quadro-Secura®
Nova 1-FW / breit

Outer seal
for Quadro-Secura®
Nova 2-FW / breit

Flexible cable ducts (2775)

A.06.17/MT 149-1-EN

flexible cable ducts (2776)

Lubricant, 250 ml pipe (2780)

Insulating washer for
Perimeter insulation (2725)

Curaflex® 3000
Special fibre cement
Pipe sleeve

Curaflex® 3001 Special fibre
cement liner with flange
made of fibre cement

Curaflex® 4006 / 4005
Pipe sleeve with fixed
and loose flanges made
of cast-iron according to
DIN 18195 / DIN 18533

Curaflex® C/2/SD/6/M or
Curaflex® C/2/SD/5/M
Outer seal with fixed /
loose flanges according to
DIN 18195 / DIN 18533

Reusable
grouting device

Gas building services duct system
RMA, type KETH-S / PE

Gas building services duct system combination
Schuck, type HSP ...

We love challenges

DOYMA SPECIAL CONSTRUCTIONS

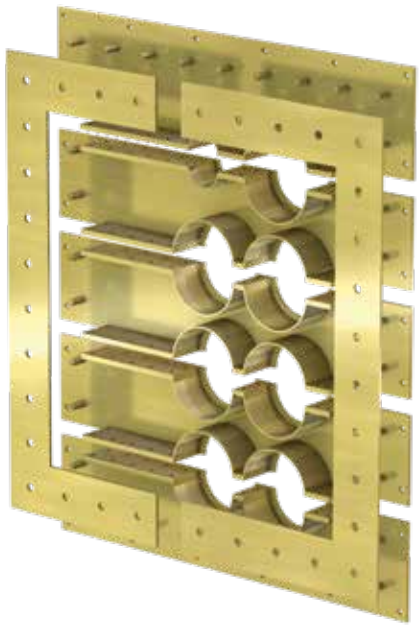
Demanding building types, such as power plants, large industrial plants, reservoirs or airports, often require highly specialized special constructions. They place high demands on the safe and permanently tight penetration of pipes and cables for the building penetration.

As soon as pipes have extraordinary dimensions, special thermal, or chemical, physical requirements exist, sealing systems in the form of a special construction are the only solution. Only they are able to meet these individual conditions regarding the building structure.

DOYMA has the expertise and an experience of nearly 50 years to develop and produce the best solution for your building.
State-of-the-art design and manufacturing methods as well as professional simulation methods will help to ensure safety when using the DOYMA special constructions. And we do this with a 25-year warranty.

WE'RE UP TO THE TASK - PUT US TO THE TEST!

A.06.17/MT 149-1-EN



Curaflex® PIPE SLEEVE 7006/M/T/S

PRODUCT USE / OBJECT: Sealing of several supply and disposal lines. Constructed and manufactured for the renovation of an airport tower.

PRODUCT DESCRIPTION: Split sealing in front of the wall in accordance with DIN 18195 with fixed and loose flange when using plastic-modified bitumen coatings. For sealing already existing pipes; against pressing water. Routing of multiple lines: 7 x DN 200/1 x DN 100.

Material: possibly sanded

Further scope of delivery: Curaflex® gasket inserts C/T/S for sealing the media lines and Curaflex® accessories for thick coating (1776): "Sanding of the contact surfaces"

Note: Sanding not depicted!

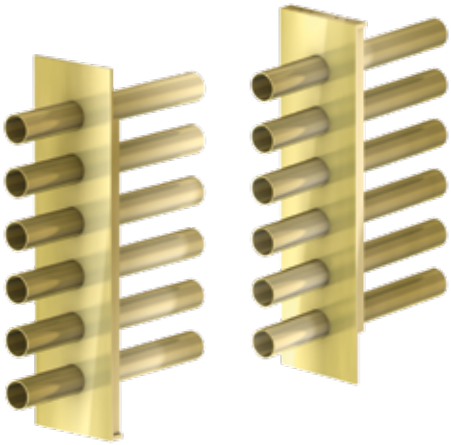
Curaflex® GASKET INSERT A /S

PRODUCT USE / OBJECT: Sealing of the wall duct for a gas line. Constructed and manufactured for a production building of the chemical industry.

PRODUCT DESCRIPTION: Gasket insert DN 3000.
For sealing already existing pipes against non-pressing water.
Fitted with fixing lugs for the fixing.

Material: Frame ring made of stainless steel 1.4301, sealing rubber made of NBR

USE OUR CHECKLISTS TO PROFESSIONALLY PLAN YOUR SPECIAL CONSTRUCTIONS! **THE CHECKLISTS CAN BE FOUND IN PDF FORMAT AT WWW.DOYMA.DE.**



Curaflex® PIPE SLEEVE 9000/M/S

PRODUCT USE / OBJECT: Subsequent sealing of various supply and disposal lines. Constructed and manufactured for the remodeling of an office building.

PRODUCT DESCRIPTION: Split pipe sleeve with center flange.
For sealing already existing pipes; against pressing water. Routing of multiple lines: 12 x DN 80.

Material: ggv

Further scope of delivery: Curaflex® gasket inserts C

Curaflex® PIPE SLEEVE 7006/T/S

PRODUCT USE / OBJECT: Sealing for wall ducts of supply lines. Special requirements: Preservation of the existing building structure despite extensive renovation of the pipes. Constructed and manufactured for the renovation / conversion of a listed residential building.

PRODUCT DESCRIPTION: Split sealing in front of the wall in accordance with DIN 18195 with fixed and loose flange when using tanking membranes. For sealing already existing pipes; against pressing water.
Routing of a DN 250 line.

Material: ggv

Further scope of delivery: Curaflex® Gasket insert C / T / S for sealing the media line

Curaflex® PIPE SLEEVE 5.5002/S

PRODUCT USE / OBJECT: Split sealing of a roof duct with a fixed and loose flange when using tanking membranes. Constructed and manufactured for the expansion of an industrial building.

PRODUCT DESCRIPTION: Roof duct with 2 x fixed and loose flanges when using tanking membranes for two sealing levels; against non-pressing water.
Routing of a DN 80 line.

Material: Stainless steel 1.4301

Further scope of delivery: Curaflex® Gasket insert A

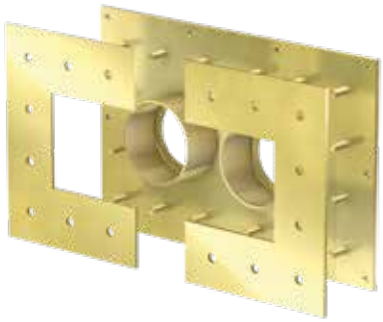
Curaflex® PIPE SLEEVE 7006/M/S

PRODUCT USE / OBJECT: Sealing the inclined wall ducts of several data and power lines.
Constructed and manufactured for the new construction of a computer form.

PRODUCT DESCRIPTION: Split sealing in front of the wall in accordance with DIN 18195 with fixed and loose flange when using tanking membranes; against pressing water. Routing of multiple lines: 4 x DN 400.

Material: ggv

Further scope of delivery: Curaflex® gasket inserts C



Curaflex® PIPE SLEEVE 7006/M/S

PRODUCT USE / OBJECT: Multiple sealing for wall ducts. Respectively a district heating supply and return line in the form of plastic jacket pipes. Constructed and manufactured for the renovation of an administration building.

PRODUCT DESCRIPTION: Sealing in front of the wall in accordance with DIN 18195 with fixed and loose flange when using tanking membranes. For sealing already existing pipes; against pressing water. Routing of multiple lines: 2 x DN 200.

Material: ggv

Further scope of delivery: Curaflex® Gasket inserts Quick In C 40 for sealing the media lines

Curaflex® PIPE SLEEVE 5.500/M/S

PRODUCT USE / OBJECT: Multiple sealing of various supply and disposal lines. Constructed and manufactured for the renovation of an educational institution.

PRODUCT DESCRIPTION: Sealing with fixed and loose flange when using tanking membranes; against non-pressing water. Routing of multiple lines: 2 x DN 200.

Material: Stainless steel 1.4571/1.4404

Further scope of delivery: Curaflex® gasket inserts C

BASICS - INTRODUCTION

"Nothing in life, besides health and virtue, is more valuable than knowledge and experience. Also, nothing is so easy to achieve and so easy to maintain: the entire effort is to preserve calmness and not to waste the time that we are unable to save."

Johann Wolfgang von Goethe

In the sense of Johann Wolfgang von Goethe, we would like to provide you with important information regarding building penetrations on the following pages.

On the basis of selected **installation examples** you can get an idea about the assembly of our quality products.
The evidence for the quality and functionality of our products can be found under **Approvals, test certificates, expert opinions**.

Technical foundations, DIN standards and rule code drafts provide you with an overview of the generally accepted state of the art. The Special Report on **Renovation** shows you what must be considered especially for the implementation in existing structures. **Regulations, guidelines and standards, pipe tables** and the **glossary** can provide useful information for the planning and execution.

If something is missing, let us know and ask!

OVERVIEW

CHAPTER 1: INSTALLATION EXAMPLES

INSTALLATION EXAMPLE OF GASKET INSERTS:
Curaflex® C/2/SD/6

Curaflex® C/2/SD/6 is a gasket insert with a fixed and loose flange. The system seals pipes and cables against pressing water, and is suitable for buildings with tanking membranes or thick coatings.

PLEASE OBSERVE

- The wall must be clean, level and dry in the mounting area.
- On the wall surface, no cracks, cracks and breakouts may be present in the mounting area.
- Masonry walls must be created with pipe sleeves in any case.
- The seals and the pipe surfaces must be clean and free from damages.
- Curaflex® Gasket inserts are maintenance-free. When properly installed, a re-tightening of the bolt is not necessary.
- Does the gasket insert fit? Compare the media line and pipe sleeve/core bore diameter with the specifications on the gasket insert.
- Gasket inserts do not act as fixing points or support bearings, but rather serve exclusively to elastically seal pipes and cables.
- Slight axial movements of the pipes and cables are allowed.
- We recommend to seal the core bore with Aquagard.

NOTICES

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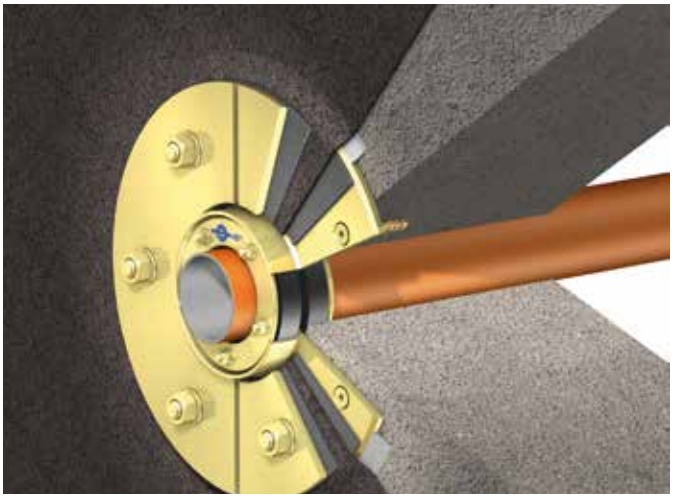


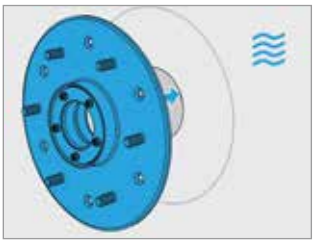
Gasket insert Curaflex® C/2/SD/6 built into the core bore

MAXIMUM TORQUES FOR

Bolt Ø	Wrench width	Max. Torque values [Nm]
M 5	8	3
M 6	10	8
M 8	13	12
M 10	17	25
M 12	19	30

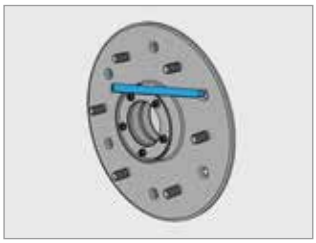
INSTALLATION STEPS

1



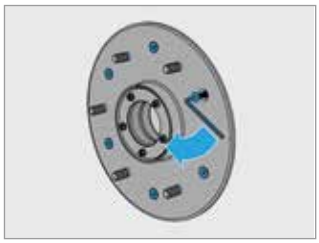
Position and center the gasket insert in the recess.

2



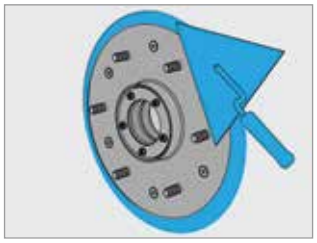
Mark the dowel holes, drill the holes and insert the dowels.

3



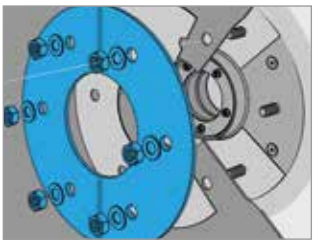
Tighten the countersunk screws.

4



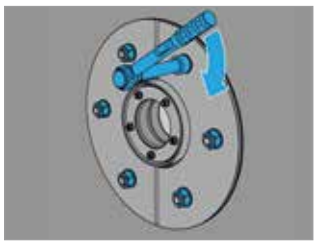
Compensation of the transition from the fixed flange to the wall with mortar.

5



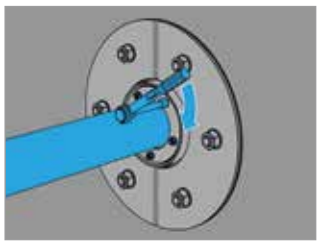
If necessary, install the tanking membrane with packings and loose flange halves.

6



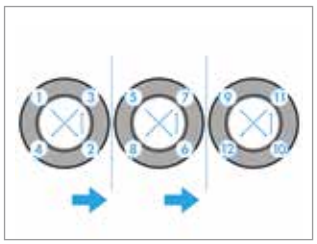
Tighten the loose flange with a torque wrench. Observe the torque according to DIN 18195 / DIN 18533.

7



Assemble the cable and tighten the gasket insert with the torque wrench (observe Fig. 8).

8



Tighten the nuts crosswise. Observe the maximum torque.

INSTALLATION EXAMPLE OF PIPE SLEEVES:

Curaflex® 8000 in connection with butyl sealing tape (1753)

Curaflex® 8000 is a steel pipe sleeve for sealing buildings with an existing thick coating (black tank), sealing against non-pressing water / soil moisture (not according to DIN 18195-9 / DIN 18533-1). The sealant is butyl sealing tape (1753). The mounting of the pipe sleeve is performed on to the existing, hardened thick coating.

PLEASE OBSERVE

- The existing thick coating must be in a clean and dry condition in the area of the steel pipe sleeve.
- The steel pipe sleeve must be clean, free of dust and grease.
- If there is a pipe sleeve in the wall, it must terminate flush with the wall.
- The diameter of the core bore / wall pipe sleeve must be smaller than the pipe connection of the steel pipe sleeve. Otherwise a special construction will be necessary.
- If the pipe / cable is not centered on the steel pipe sleeve, a special construction may be necessary after a consultation with DOYMA.
- To seal the annular space between pipe / cable and pipe sleeve, you will need a sealing element. We recommend installing a Curaflex® gasket insert (not included in the scope of delivery).
- To ensure that the butyl sealing tape (1753) adheres better to the steel pipe sleeve, additional accessories are required, for example, Sika® Haftreiniger-1 (yield per liter: approx. 8-9 m^2). Not included in the scope of delivery.

NOTICES

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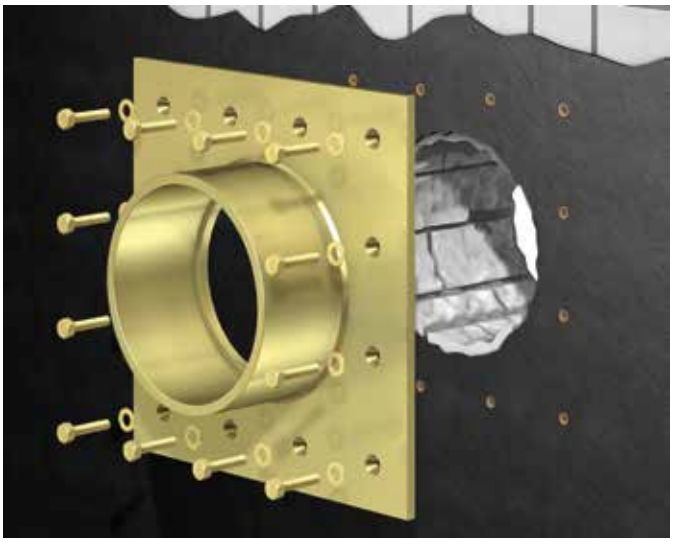


Steel pipe sleeve Curaflex® 8000

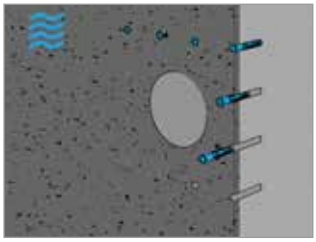
A 06.17/MT 149-1-EN

INSTALLATION STEPS

1

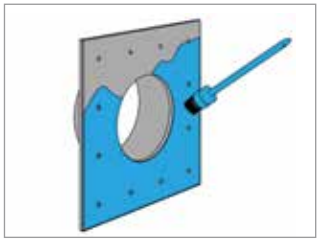
Position the steel pipe sleeve on the wall and mark the dowel holes. Important: If piping is already installed, position the pipe sleeve centrally to the pipeline!

2



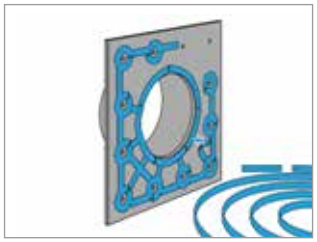
Drill the dowel holes, and insert the dowels.

3



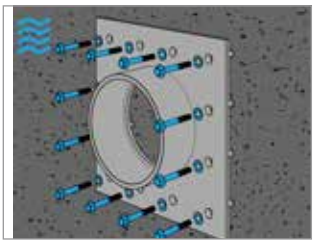
Apply “Sika Haftreiniger” to the back of the steel plate.

4



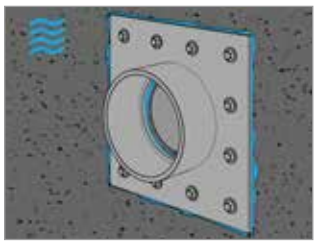
The stick the butyl-sealing tape (1753) to the back of the steel plate in a spider web manner. Leave a diameter of approx. 25 mm in the area of the holes. Here, the collar of the dowel is positioned as a spacer between the wall and the plate. A prerequisite for a durable seal is the seamless application of the sealing tape.

5



Slide the plastic washer onto the special screw, and slide the steel pipe sleeve onto the wall by setting and tightening the screws.

6



The installation is proper when butyl emerges circumferentially on the inside and outside when the screws are tightened. Remove the overlapping butyl from the sleeve.

INSTALLATION EXAMPLE FOR LINK CHAINS:
Link-Seal® version C

The link chain type C is suitable for the sealing of steel pipes which are routed through walls, ceilings and soles. An advantage of this seal is the possibility of performing a subsequent installation.

PLEASE OBSERVE

- The wall must be clean, level and dry in the mounting area.
- On the wall surface, no cracks, cracks and breakouts may be present in the mounting area.
- Masonry walls must be created with pipe sleeves in any case.
- The seals and the pipe surfaces must be clean and free from damages.
- Ensure that the pipe to be sealed is centered in the core bore or in the pipe sleeve, and that no radial forces act on the sealing modules.
- The pressure plates must be evenly distributed.
- The number of sealing modules to be installed according to the calculation program must be strictly adhered to.

Link chain Link-Seal® C

NOTICES

The products are continually further developed and technical modifications are implemented without prior notice. Detailed installation instructions are included with the product. They are also available on the Internet at www.doyma.de.

MINIMUM WALL THICKNESSES

Module type	Wall thickness [mm]
LS 200	75
LS 265	
LS 275	
LS 300	100
LS 310	
LS 315	
LS 325	120
LS 340	
LS 360	

Module type	Wall thickness [mm]
LS 400	140
LS 410	
LS 425	
LS 440	
LS 475	
LS 500	150
LS 525	
LS 575	
LS 625	
LS 700	

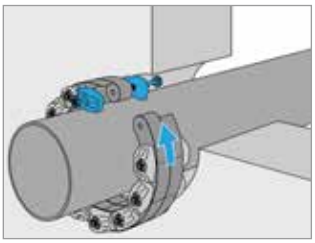
MAXIMUM TORQUES FOR THE SEALING OF STEEL / CAST IRON PIPES

Module type	Versions C, S316 [Nm]
LS 200 – LS 275	2
LS 300 – LS 360	8
LS 400 – LS 475	27
LS 500 – LS 575	65
LS 615	110

A 06.17/MT 149-1-EN

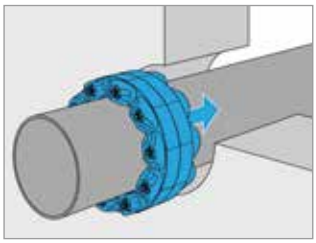
INSTALLATION STEPS

1



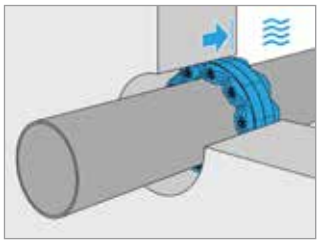
Lay the link chain with the appropriate number of modules around the cable, and close it by means of a screw connection.

2



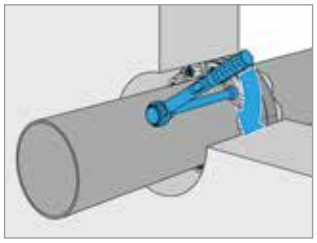
Push the link chain into the ring chamber.

3



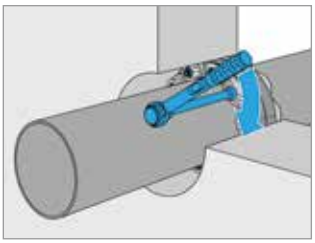
Place the link chain on the water side.

4



Tighten the link chain with the torque wrench in several steps and clockwise.

5



After approx. 2 hours repeat the assembly as described under point 4.

INSTALLATION EXAMPLE OF A BUILDING SERVICES DUCT SYSTEM:

Quadro-Secura® Nova 1

Quadro-Secura® Nova 1 is a multi-compartment building services duct system for buildings with a basement with additional sealing on the outside wall for sealing with black coats and thick coatings.

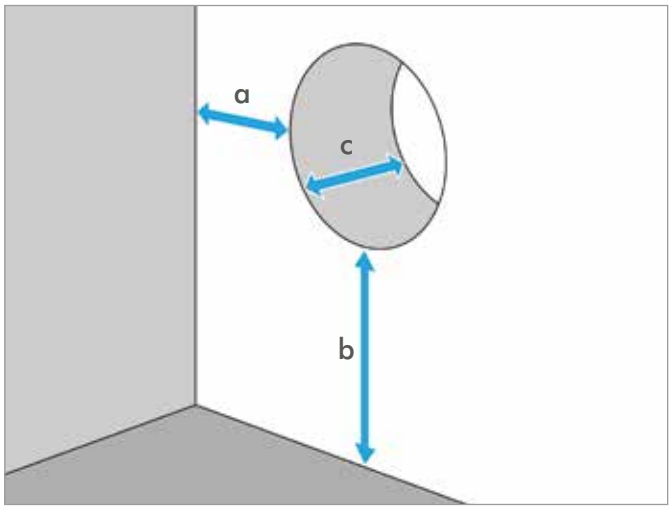
PLEASE OBSERVE

- The wall must be clean, level and dry in the mounting area.
- On the wall surface, no cracks, cracks and breakouts may be present in the mounting area.
- Masonry walls must be created with pipe sleeves in any case.
- The seals and the pipe surfaces must be clean and free from damages.
- We recommend sealing the core bore with Aquagard (primer 1710/1711 and special paint 1715/1716).
- The following minimum wall / floor distances must be observed (see picture below right).

NOTICES

The DOYMA products are continually developed and technical modifications are implemented without prior notice. Detailed installation instructions are included with the product. They are also available on the Internet at www.doyma.de.

Quadro-Secura® Nova 1



Minimum distances: a ≥ 50 mm, b ≥ 50 mm, c: 190 – 550 mm

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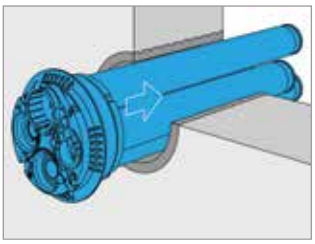
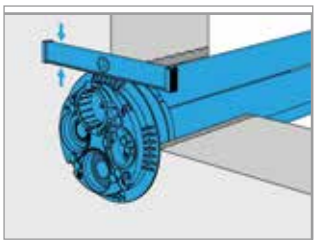
INSTALLATION STEPS

1



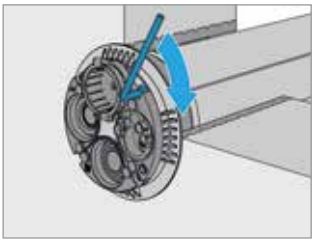
Insert the inner seal into the recess.

2



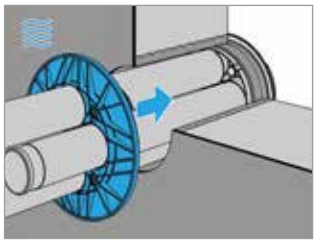
Align the inside seal.

3



Tighten the inner seal.

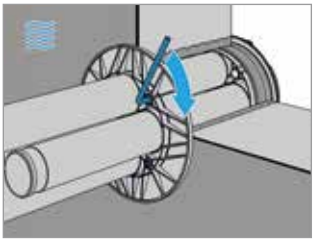
4



Push the outer seal over the sleeve pipes into the recess.

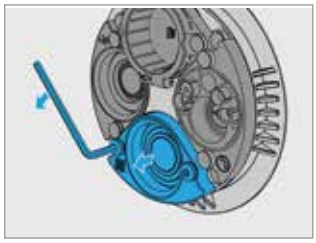
Example installation of a trade: Water

5



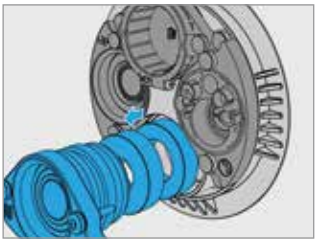
Seal the outside seal.

6



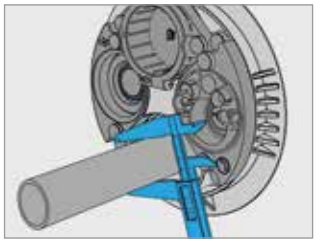
Loosen the fixing screws (hexagon socket head cap screws) of the "water supply" packing flange.

7



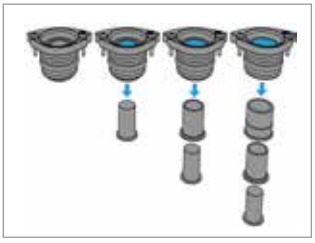
Remove sealing unit with ring plugs behind it (two pieces, "secondary seals").

8



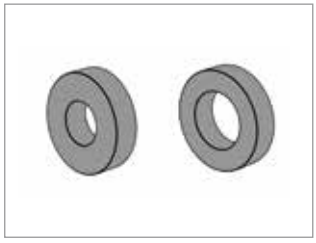
Push the pipes through and determine the pipe diameter.

9



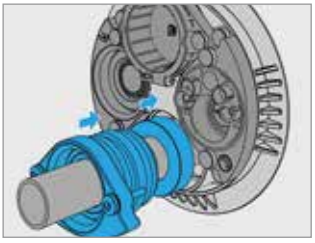
Remove the blind plug from the sealing unit and adjust the modifying direction according to the diameter of the water line.

10



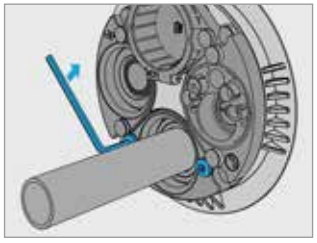
Select appropriate ring plugs (secondary seal) for the water supply.

11



Install the sealing unit: first the appropriate ring plug (secondary seal) afterwards the sealing unit.

12



Tighten the fastening screws (hexagon socket head cap screws) alternately until the packing flange bears flat against the anchor plate.

CHAPTER 2: APPROVALS, TEST REPORTS, EXPERT OPINIONS

Curaflex® pipe sealing systems

PRESSURE AND LEAKAGE TESTS

Cons.-No.	Testing Institute	Standard	Check result classification	Product
1	iro Oldenburg Reg.-No. G 30661	-	>= 0.1 bar	Curaflex® A
2	iro Oldenburg Reg.-No. G 30661	-	up to 6.4 bar	Curaflex® Nova Uno, -Uno/0, -Uno/T, -Multi as well as Curaflex® C and -C/0
3	iro Oldenburg Reg.-No. G 30662	-	1.0 bar	Curaflex® Nova Senso
4	iro Oldenburg Reg.-No. G 30663	-	5.0 bar	Curaflex® Nova Uno
5	iro Oldenburg Reg.-No. G 30663	-	10.0 bar	Curaflex® F
6	TÜV Nord Reg.-No.: 44 799 11 399783		5 bar	Curaflex® 3000 (DN 200)
7	MPA NRW Reg.-No.: 22 1295 797-01	DIN 18195	1.5 bar	Curaflex® C/2/SD/6 or Curaflex® F/2/SD/6 + Superflex 10, Deitermann
8	MPA NRW Reg.-No.: 22 1618 296-01-3ka	DIN 18195	1.5 bar	Curaflex® 3001 + Superflex 10, Deitermann
9	MPA NRW Reg.-No.: 22 1618 296-01-4k	DIN 18195	1.5 bar	Curaflex® 4000 + Superflex 10, Deitermann
10	MPA NRW Reg.-No.: 22 1618 296-01-5k	DIN 18195	1.5 bar	Curaflex® 5000 + Superflex 10, Deitermann
11	Infraserv Reg.-No.: 14-11-2008	DIN EN 1779 B3	$1.1*10^{-4}$ mbar*l/s (Helium test)	Curaflex® A
12	Infraserv Reg.-No.: 18-11-2008	DIN EN 1779 B3	$1.5*10^{-4}$ mbar*l/s (Helium test)	Curaflex® C

ELASTOMER TESTS

Cons.-No.	Testing Institute*	Test content	Check result classification	Product
1	OFI Reg.-No. 412.470/1	Cold water (23°C)	Elastomer guide line UBA	DOYMA-Grip – EPDM-TW
2	OFI Reg.-No. 408.093/5	Microbial growth	DVGW W270	DOYMA-Grip – EPDM-TW
3	IAF 20.11.2015 / 11.12.2015	Radio diffusion constant	R > 3, radon tight	Curaflex Nova® Uno, Curaflex Nova® Uno/T, Curaflex Nova® Uno/breit, Curaflex Nova® Multi, Curaflex® C, Curaflex® Quick In C, Curaflex® C/M, Curaflex® C/M/T, Curaflex® C/0, Curaflex® C/S, Curaflex® F, Curaflex® C/2/SD/6, Curaflex® A, Curaflex® Quick In A, Curaflex® A/M, Curaflex® A/M/T, Curaflex® A/0, Curaflex® A/S, Curaflex® B, Curaflex® C/2/SD/5

SOUND INSULATION TESTS

Cons.-No.	Testing Institute	Standard	Check result classification	Product
1	IBMB Reg.-No.: 2075/5673-DK/br	DIN 52210	Rw = 49 dB	Curaflex® A, Curaflex® A/0, Curaflex® C Curaflex® C/0 , Curaflex® 3000

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Quadro-Secura® building services duct systems

TIGHTNESS, PULL-OUT, TORSION, HTB TEST

Cons.-No.	Testing Institute	Standard	Check result classification	Product
1	DVGW Reg.-No.: DV-4541BQ 0130	DVGW VP601	granted	Quadro-Secura® Nova Quadro-Secura® Basic R2-R5
2	DVGW Reg.-No.: DV-4543BT 0105			Quadro-Secura® E
3	DVGW Reg.-No.: DG-4540BT 0396			Quadro-Secura® E-S
4	DVGW Reg.-No.: DV-4540BL 0436			Quadro-Secura® MG Quadro-Secura® MF
5	SVGW Reg.-No.: 06-025-6			Quadro-Secura® Nova

DVGW: German Association for Gas and Water, Bonn
IAF: IAF – Radioökologie GmbH, Radeberg
IBMB: Institute for Building Materials, Concrete and Fire Protection, Braunschweig
IFAM: Fraunhofer Institute for Manufacturing Engineering and Applied Materials Research IFAM, Bremen
Infraserv: InfraServ Wiesbaden Technik GmbH & Co. KG
iro Oldenburg: iro GmbH Oldenburg
MPA NRW: Material Testing Office North-Rhine Westphalia, Dortmund
OFI: OFI Technologie & Innovation GmbH
SVGW: Swiss Gas and Water Association, Zurich
TÜV Nord: TÜV Nord AG, Hannover
TZW: Technologie Zentrum Wasser, Karlsruhe

SENDING THE TEST PRODUCTS UPON REQUEST

Principles for sustainable and professional building penetrations

1 | INTRODUCTION

The supply and disposal of a building is generally carried out with underground pipes. In order to introduce these lines into the building, the building envelope must be penetrated.

The building envelope, in turn, is provided with a seal in order to protect the people, objects, and also the building itself from external influences, in particular from penetrating water. The building penetration thus also penetrates the seal layer.

A gas and watertight transition from the building seal to the pipe is to be established by means of appropriate sealing systems, or else by means of feed systems. Thus the building seal is restored. Therefore, the building sealing and hence the penetration system is located on the outside of the building. Thus, the access to the penetration system is often limited or not possible at all. The majority of the duct systems must therefore function without maintenance.

Depending on the type of building utilization, the service life - and thus also of the duct system - can be up to 50 years. This demonstrates the high quality requirements for such a system.

2 | LOAD CASES - WATER EFFECT

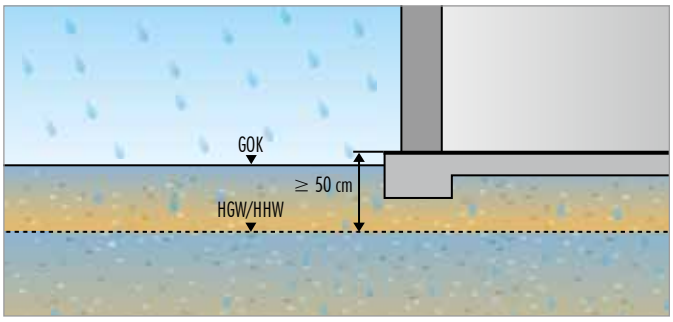
The type of building sealing depends on the load case (the water effect) acting on the building. The planner decides what the load case is by determining the rated water level (maximum expected base or high water level + 30 cm safety margin). As a basic rule, a minimum period of 20-30 years must be assumed. Furthermore, the water management factors should also be considered. Irrespective of this, changes (increase) in the moisture load can occur, for example, through:

- Extreme weather conditions with high amounts of rainfall,
- Increase of the ground water level through a refurbishing of sewers,
- Sealing of surfaces,
- Lowering of soil (e.g. in mining areas) or
- Water management factors (e.g. shutdown of pumps).

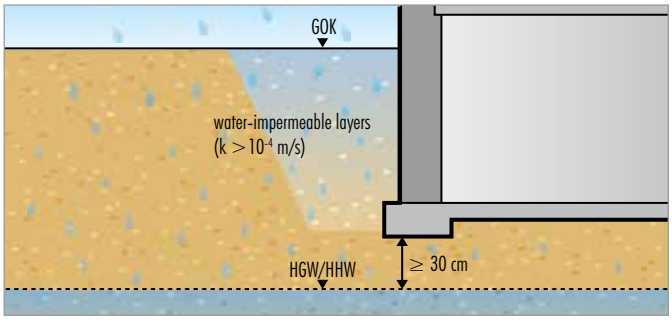
The E DIN 18533 describes the following water effect classes:

- W1-E - ground moisture and non-pressing water
- W2-E - pressing water
- W3-E - non-pressing water on ground-covered ceilings
- W4-E - splash water at the wall base, as well as capillary water in and under the ground-touching walls

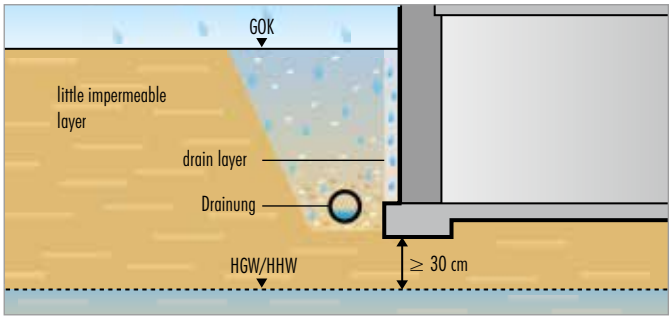
The individual water effect class are described in greater detail in the following:



W1.1-E / ground moisture with floor slabs



W1.2-E / without drainage, situation 1



W1.2-E / with drainage, situation 2

2.1 | W1-E - GROUND MOISTURE AND NON-PRESSING WATER

W1-E is subdivided into two subclasses:

2.1.1 | W1.1-E – ground moisture with floor slabs

Floor slabs on a very permeable construction ground, wducts upper edge (raw floor slab) is at the same height or above the upper edge of the terrain, and wducts lower edge is at least 50 cm above the rated water level.[1]

2.1.2 | W1.2-E - ground moisture and non-pressing water on ground-touching walls and floor slabs

Situation 1: Ground-touching walls and floor slab in a strong water-permeable building ground, and with very water-permeable excavation pit filling (k> 10-4m/s) and if the building parts to be protected are above the rated water level.[1]

Situation 2: Ground-touching walls and floor slab in a little water-permeable building ground, but if this reliably avoids a permanently functional drainage according to DIN 4095 backwater, and if the building parts to be protected lie above the rated water level.[1]

2.2 | W2-E - PRESSING WATER

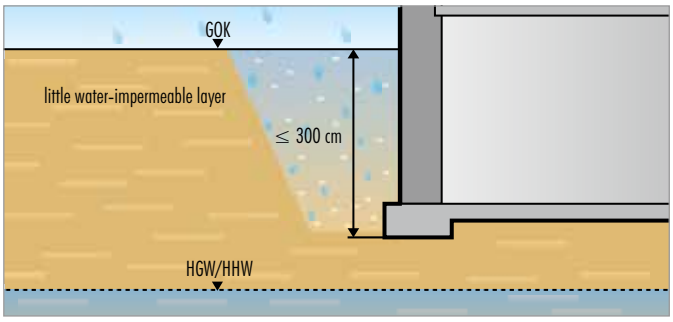
W2-E is subdivided into two subclasses:

2.2.1 W2.1-E - morate exposure to pressing water

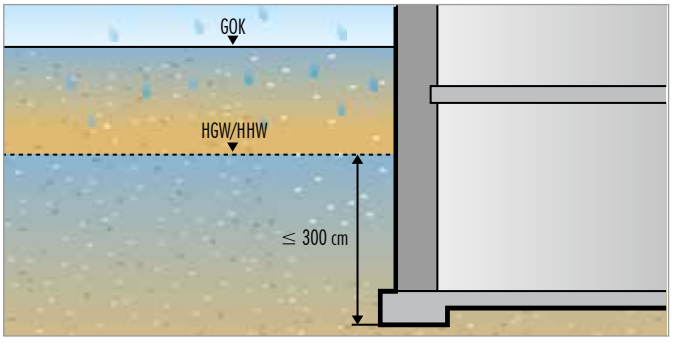
Situation 1: back water exposure up to 3 m - The sealing level is/spans less than 3 m below the upper edge of the ground surface. The ground-touching building parts without drainage according to DIN 4095 are located in a low permeable soil, so that backwater can be expected. [1]

Situation 2: ground water exposure ≤ 3 m - The sealing level is within the groundwater-effecting range of ≤ 3 m height.[1]

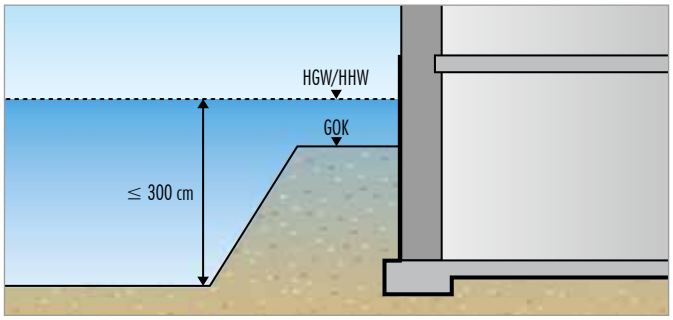
Situation 3: flood water exposure ≤ 3 m - The sealing level is within the flood water effecting range of water bodies located on the surface. The pressure water effect is ≤ 3 m.[1]



W2.1-E / without drainage, situation 1



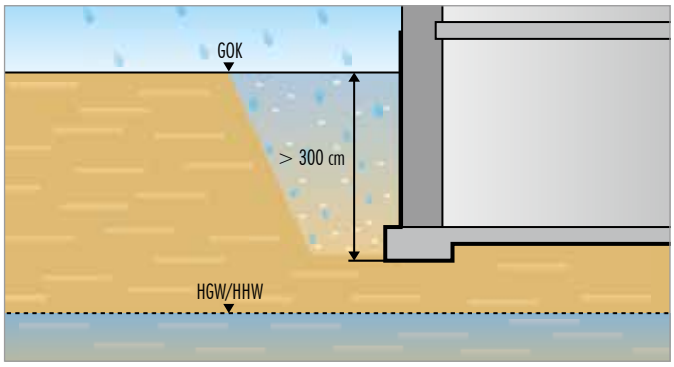
W2.1-E / situation 2



W2.1-E / situation 3

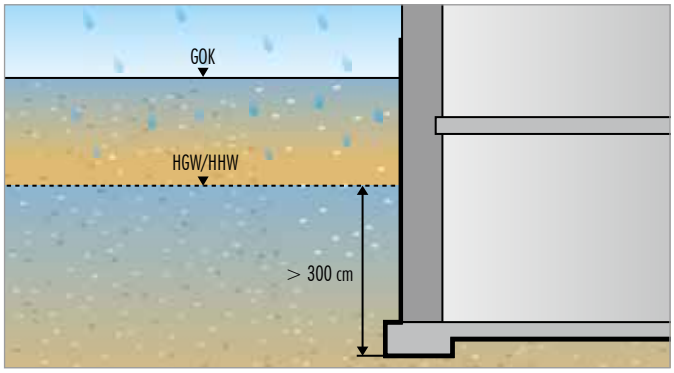
2.2.2 | W2.2-E - high impact of pressing water

Situation 1: back water exposure > 3 m - The sealing level is/spans > 3 m below the upper edge of the ground surface. The components which are in contact with the earth are located in a low permeable soil without draining according to DIN 4095, so that in the worst case more than 3 m high backwater can act upon it. [1]



W2.2-E / without drainage, situation 1

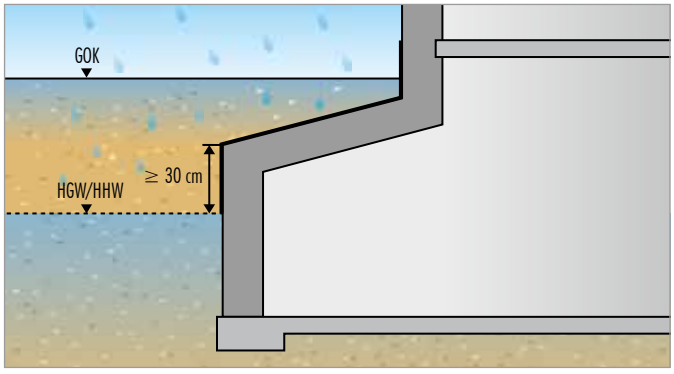
Situation 2: Ground water or high-water effect > 3 m - The sealing level is burdened by pressing water at a maximum water level of more than 3 m.[1]



W2.2-E / situation 2

2.3 | W3-E - NON-PRESSING WATER ON GROUND-COVERED CEILINGS

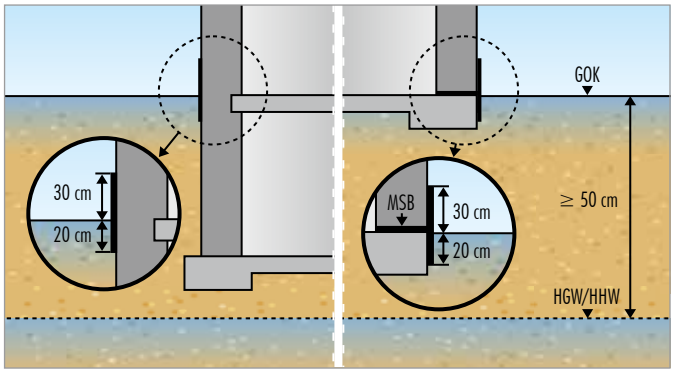
Precipitation water, which drains through the covered earth down to the sealing, and is dissipated there without the formation of backwater. Whereas an accumulation height of 100 mm which may not be exceeded. [1]



W3-E

2.4 | W4-E - SPLASH WATER AT THE WALL BASE, AS WELL AS CAPILLARY WATER IN AND UNDER THE GROUND-TOUCHING WALLS

Spray and seepage water which acts on the base surfaces, floor slabs and foundations. Furthermore, it is possible that capillary water can ascend in and under base walls, and in ground-touching walls. At the wall base in a two-layered masonry, the participation water can seep into the cavity space. W4-E is defined for a range of approx. 0.20 m below the upper edge of the terrain, up to approx. 0.30 m above the upper edge of the terrain, and if impacts according to W2.1-E are not to be expected.[1]



W4-E

3 | TYPES OF BUILDING WATERPROOFING

3.1 | WHITE TANK - WATERPROOF CONCRETE STRUCTURES (WP CONCRETE)

The execution of penetrations in water-impermeable structures made of concrete is regulated by the German Committee for Reinforced Concrete by the **DAfStb Guideline - Watertight Structures of Concrete**. In general, these building seals are referred to as "White Tub". The directive provides for the following specifications on the topic of penetrations:

"All structural joints and penetrations must, in principle, be constructed according to plan with mutually compatible systems which are impermeable to water, adapted to the respective stress class. [3]"

The WP directive distinguishes two load classes:

Class 1: pressing and non-pressing water as well as temporarily accumulating seepage water

Class 2: ground moisture and non-accumulating seepage water

Specifications regarding the execution of penetrations are not stated, just like there are no specifications for the requirements.

The wall thicknesses are determined by the expected water load (immersion depth) and by the concrete quality (crack sizes and cracking frequencies).

For this type of building sealing, it must be particularly observed that this is not a watertight but a water-impermeable wall structure. The water can penetrate the concrete up to 25 mm across the entire surface in the form of pressing water. Subsequently a maximum of further 70 mm penetration to the existing capillary. On the non-water facing side of the wall, water can penetrate or diffuse into the wall up to 80 mm depending on the moisture state.

Only if a wall thickness of ≥ 200 mm (depending on concrete load, grain size, covering for the reinforcement, etc.) is selected, can a core area can be created which prevents water transport from the water side to the air side (impermeable).

For this reason, the feed-through system must have a wide sealing surface corresponding to the load situation.

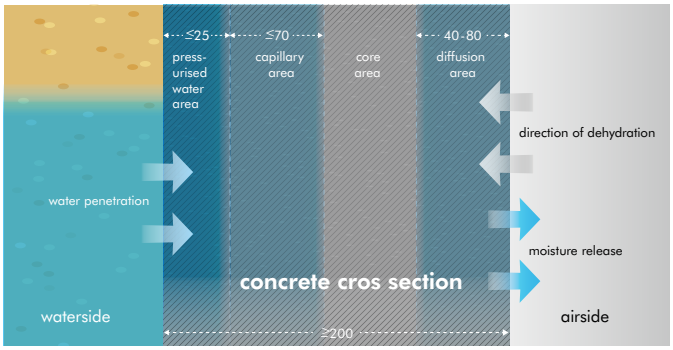
Furthermore, it must be installed on the water-facing side in order not to allow the water to penetrate deeper into the wall, and thus lose the core area.

The reinforcement is severed during the creation of the recesses for the penetrations through core bores. This can lead to cracks. These cracks must be repaired before the installation system is installed and the exposed reinforcing steel must be protected against corrosion. Therefore, the use of pipe sleeves is strongly recommended. Usually, pipe sleeves are molded in when the building part concrete is poured.

Penetrations, in particular the recesses therefor, may never be located on structural joints. A distance of ≥ 300 mm is recommended.

Recommended minimum thickness of components					
No.	Cast-in part	Load class	Version		
			In-situ concrete	Prefabricated walls	Finished parts
1	Walls	1[1]	240 mm	240 mm	200 mm
2		2[2]	200 mm	240[3] mm	100 mm
3	Floor slab	1[1]	250 mm	-	200 mm
4		2[2]	150 mm	-	100 mm

[1] Load class 1: Pressing and non-pressing water as well as temporarily accumulating seepage water | [2] load class 2: Soil moisture and non-accumulating seepage water | [3] under consideration of special concrete engineering and design measures, will enable a reduction down to 200 mm

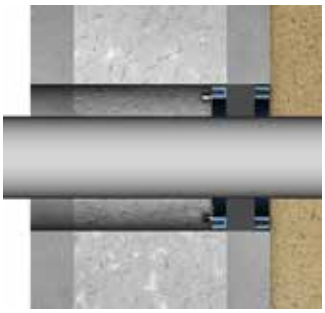


Working model for moisture conditions in a concrete component cross section with unilateral impingement of pressing water (concrete C30/37 (B35 WP) w/z ≤ 0.55) in accordance with Beddoe/Springenschmid

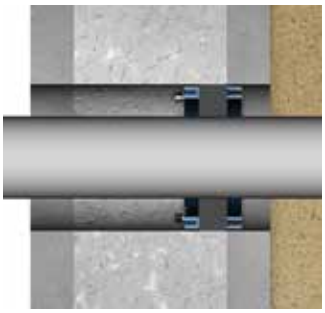
3.1.1 | Element walls - Combination wall

Element walls represent a **combination of prefabricated concrete and in-situ concrete.** Thereby, two finished parts are held apart by lattice girders and the cavity between them is then poured on site (construction site) with in-situ concrete. The requirements and measures to be taken are laid down in the **WP Directive**.

With regard to the position of the feed-through system, this must be positioned in the sealing plane. This is generally the in-situ concrete. However, this can also be the outer surface if surface seals or special designs of the finished parts are present. A clarification with the planner or installer of the wall is thereby necessary in advance. In case of doubt, special feed-through systems which cover all sealing planes can be used.



Sealing layer finished component



Sealing layer in-situ concrete

3.2 | BLACK TANK SEALING OF NON-WATERTIGHT STRUCTURES

The penetration of the sealing of ground-touching structural parts for cable and pipe ducts will essentially be regulated by **DIN 18533** in the future. DIN 18533 will then replace **DIN 18195**, which has been in force since 1983. The validity scope of the E DIN 18533 (12/2015) refers to the waterproofing of non-watertight ground-touching structures or components. Building seals of this type are commonly referred to as **"black tank"**.

Penetrations (pipe penetrations, drains, anchors) must be arranged in such a way that the building seal can be connected in a proper manner [1].

Penetrations with lines that are made in the area of responsibility of third parties (e.g. utilities) should be designed so that a clear allocation of responsibilities is possible in the event of leakages. It is therefore advisable to use pipe sleeves to which the building seal can be connected. The dense feed-through of the pipe(s) through the pipe sleeve must then be designed and carried out by third-party contractors. This type of construction must be coordinated with third parties in advance, and can only be applied if the position and orientation of the penetration can be defined [1].

In the case of lines, as far as possible, grouped sealing systems should be applied (multi-point house entry, plate construction for loose and fixed flanges). The building should be penetrated at right angles along the shortest possible path. The type of penetration must be adapted to the building structure, the type of surface sealing and the type of penetrating pipe used [1].

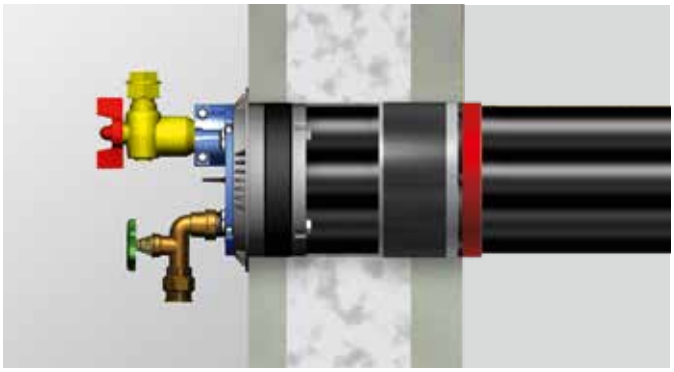
The opening for the penetration has to be adapted to the respective penetration system. For this purpose, pipe sleeves or recesses produced by formworks are preferably suitable. The opening shall be designed in such a way as to ensure the functional and operational viability of the building waterproofing and of the cable, as well as the stability and suitability for use of the building. In the case of core bores, ensure that the surface sealing is not irreparably damaged [1].

The outer edges of the connecting elements of the bonding flange, weld flange and cuff constructions should be at least 150 mm away from structural edges and building fillets, and at least 300 mm of building joints. For loose and fixed flanged constructions the distance should be at least 300 cm away from other building fillets and building edges, and at least 500 cm from building joints. If these distances cannot be adhered to, special constructions must be planned.

Penetrations may not lose their functionality, even if there are movements of the components or adjacent ground layers are expected. If necessary, special measures (proper compaction, supports made of lean concrete, etc.) must be taken.

3.2.1 | Types of penetrations

Depending on the water effect class, the following feed-through systems should be used:



Overlapping sealing system

3.2.1.1 For tanking membranes

A) Penetrations at W1-E

For W1-E, the seal must be connected to the penetration by means of a bonding flange, a weld-on flange, a cuff with a clamp, or with materials which must be processed in a liquid form. The flange width of the bonding and welded flange structures must be between 40 mm and 120 mm depending on the material used.[1]

B) Penetrations with W2-E

For W2-E, the seal must be connected to the penetration with the help of a loose and fixed flange construction.

The loose and fixed flange construction must consist of steel, and have the following dimensions:

- Loose flange width min. 150 mm
- Fixed flange width min. 160 mm
- Material thickness min. 10 mm
- Clamping bolts or clamping screws min. M20 with a spacing of 75 to 150 mm [1]

The torques with which the design is to be clamped are specified in DIN 18533 part 1 Annex A depending on the type of tanking membrane. If in doubt, please consult the manufacturer of the tanking membrane.

When using bituminous sheets, a steel ring must be provided to limit the outflow of bitumen. In the area of the flanges, the sealing strips may not have creases, kinks or any other kind of unevenness.

In the case of a single-layered seal, an admixture of at least 2 mm thick of the same material or compatible elastomer is required on both sides of the tanking membrane. In the case of a correspondingly hard sealing path, packings must be provided in the same way. A fleece backing under a tanking membrane must be removed within the flange construction.

With W2.1-E, the connections to penetrations can also be carried out with tested building services duct systems (test pressure 1 bar), which have a sealing flange with a width ≥ 30 mm. A prerequisite for this is a flat and solid wall and sealing surface in the area of the sealing flange. In order to compensate masonry unevenness, a corresponding flange can be required as a sealing subsoil, as well as a pipe sleeve can also be required system-dependent [1].

C) Penetrations with W3-E

For W3-E, the seal must be connected to the penetration by means of a bonding flange, a weld-on flange, a cuff with a clamp or a loose and fixed flange construction.[1]

The loose and fixed flange construction must consist of steel, and have the following dimensions:

- Loose flange width min. 60 mm
- Fixed flange width min. 70 mm
- Material thickness min. 6 mm
- Clamping bolts or clamping screws min. M12 with a spacing of 75 to 150 mm [1]

The requirements or stipulations with respect to the torques, limitation against the outflow of bitumen, state of the webs in the area of the flanges and of the packings applies analogously here.

3.2.1.2 In the case of plastic modified bitumen coatings (KMB/PMBC)

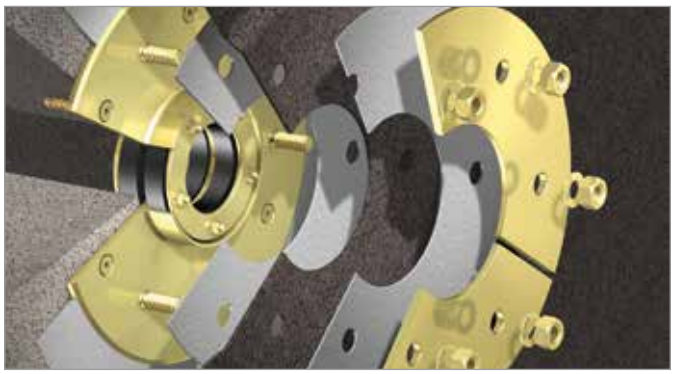
If the seal is created in the form of fillable plastic-modified bitumen coatings (KMB/PMBC), the penetration can be carried out as follows depending on the water effect class:

A) Penetrations at W1-E

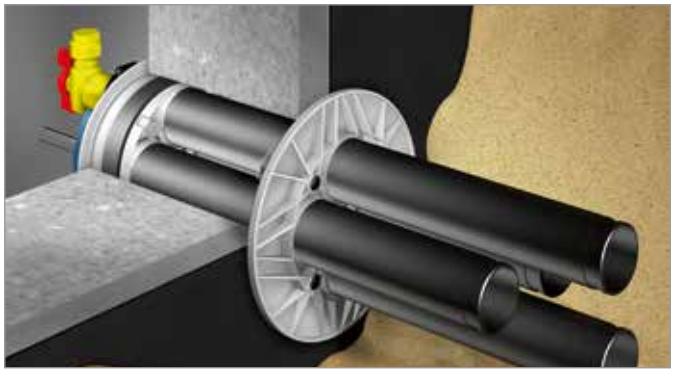
The connection of the KMB/PMBC to the component to be penetrated must be created with a bonding flange with a flange width of ≥ 5 cm. The precondition for this is that the surface and the material of the bonding flange ensure a sufficient adhesion. The KMB/PMBC must be fitted with a centered reinforcing insert at least in the width of the bonding flange.[2]

If the surface and the material of the pipe or the pipe sleeve ensure a sufficient adhesion for the KMB/PMBC, and is also bitumen-compatible, the KMB / PMBC can alternatively be incorporated into the pipe or the pipe sleeve in a hollow core fashion. A prerequisite for the execution variant is:

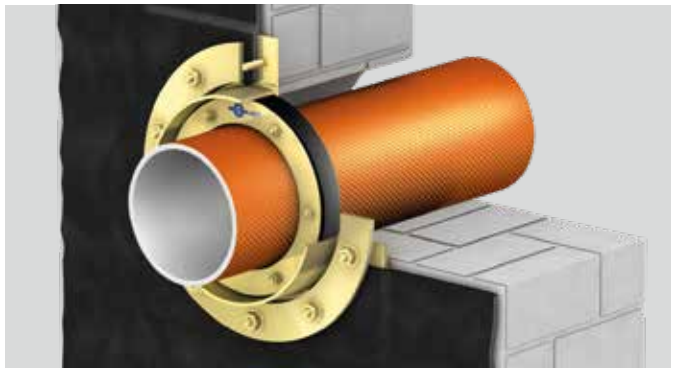
- there may be no axial and radial movements of the pipes over the entire operating period
- the measures must be agreed in advance with the line operator in order to prevent damage to the lines



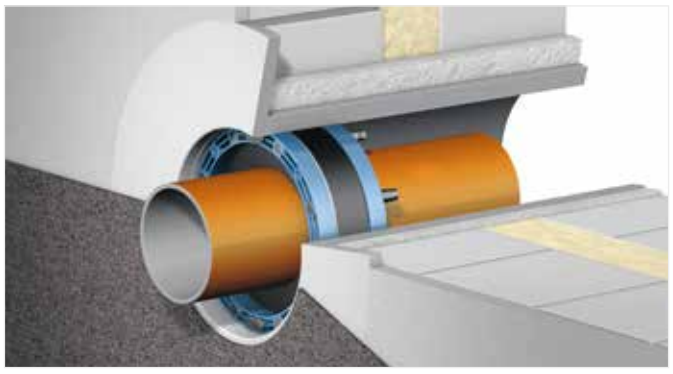
Tanking membranes with packings (Curaflex C/2/SD/6)



Building services duct system with sealing flange (Quadro-Secura Nova 1)



Example of a fixed / loose flange design



Sealing system with bonding flange for KMB/PMBC

b) Penetrations with W2.1-E

The connection of the KMB/PMBC to the component to be penetrated must be created as follows:

- with bonding flanges or cuffs according to DIN 18533-1 Annex A.2
- with building services duct systems with a sealing flange according to DIN 18533-1 Annex A.8
- with loose and fixed flange designs according to DIN 18533-1 Annex A.6 with a strip-shaped sealing collar or
- with a tested loose and fixed flange design for KMB/PMBC

The latter must have the following property or structure:

- the contact surfaces of the loose and fixed flanges must be designed in such a way as to prevent the KMB/PMBC from slipping off, through suitable measures (e.g. sanding).
- an increased dry layer thickness of 5 mm is to be applied to the fixed flange
- after the PMBC has dried out, ensure that a gap of 4 mm (minimum dry film thickness) between the loose and the fixed flange is established after tightening the loose flange, and that a run-out at the spacers is excluded by suitable measures (e.g. O-rings) [2]

3.2.1.3 For crack-bridging mineral sealing sludges (MDS)

The connection of the MDS to the component to be penetrated must be created with a bonding flange with a flange width of ≥ 5 cm. The precondition for this is that the surface and the material of the bonding flange ensure a sufficient adhesion.

Alternatively, the MDS for W1-E can be connected to the line to be sealed with an insert made of a sealing collar that is compatible to the sealing system. A prerequisite for the execution variant is:

- there may be no axial and radial movements of the pipes over the entire operating period

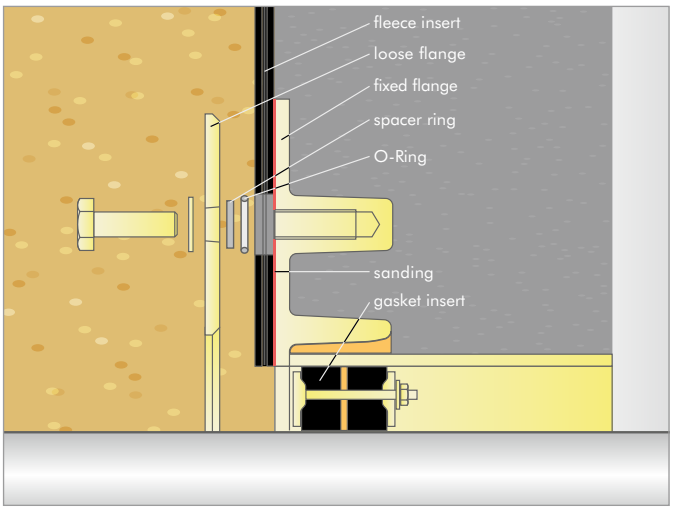
Sealing slurries may be highly alkaline under certain circumstances. Here, the compatibility of the materials used must be checked in advance.[2]

3.2.1.4 For liquid plastic materials (FLK)

The connection of the FLK for W3-E to the component to be penetrated must be created with a bonding flange with a flange width of ≥ 5 cm. The precondition for this is that the surface and the material of the bonding flange ensure a sufficient adhesion.[2]

Alternatively, FLK for W3-E can also be routed directly to the line. The connection must be ≥ 100 mm.[2] A prerequisite for the execution variant is:

- there may be no axial and radial movements of the pipes over the entire operating period



DOYMA type Curaflex® 1776

Sealing system with bonding flange for MDS

Sealing system with bonding flange for FLK

4 | SUPPORTS AND SERVICE LINE MOVEMENTS

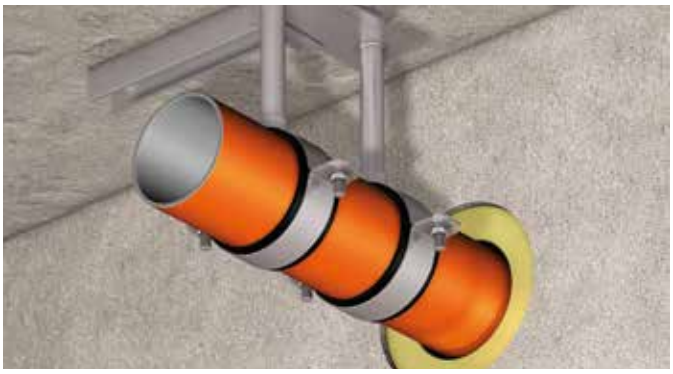
4.1 | SUPPORTS
BASIC TYPES OF MOUNTING

The sealing inserts and building services duct systems are usually unable to absorb any radial movements. In this case, they may not be used as supports.

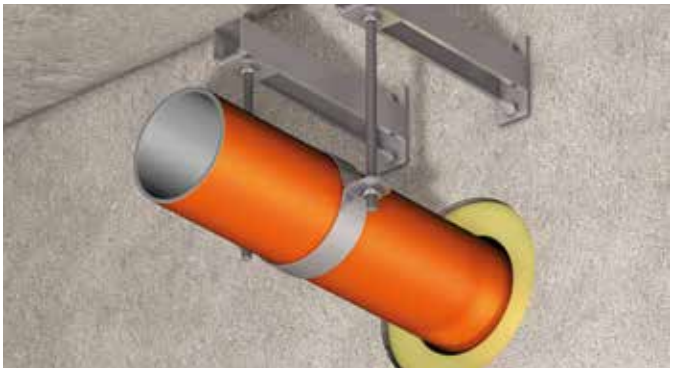
The pipes must be adequately supported (adequate compaction, pipe clamps, etc.). Various mounting systems are used to absorb high bearing forces.

These mounting systems can be attached directly to the wall and behind the penetration. If it is not possible to mount it on the wall for static or sealing purposes, a cantilevered concrete bearing can be erected in front of the wall.

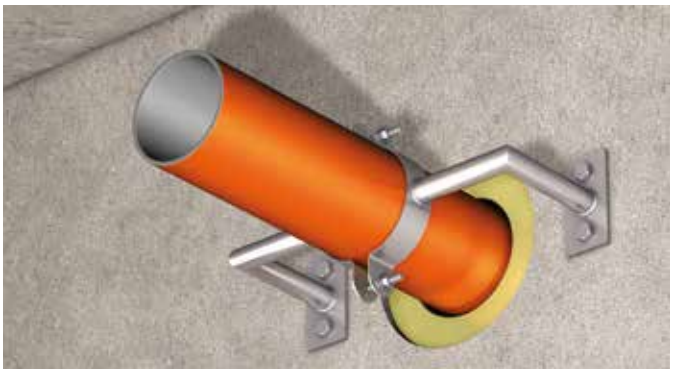
If axial movements are to be expected for the pipes, special mounting systems with corresponding sliding elements and guide bearings can also be used.



Bearing with hanging mechanism and sliding element



Support with hanging mechanism

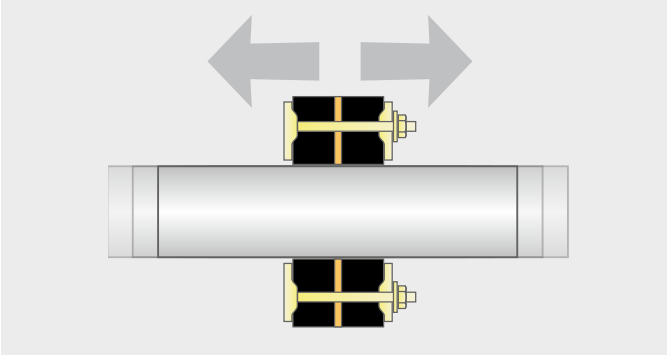


Support with lateral mechanism

4.2 | SERVICE LINE MOVEMENTS - POSSIBLE SERVICE LINE MOVEMENTS IN THE GASKET INSERT

Axial displacement

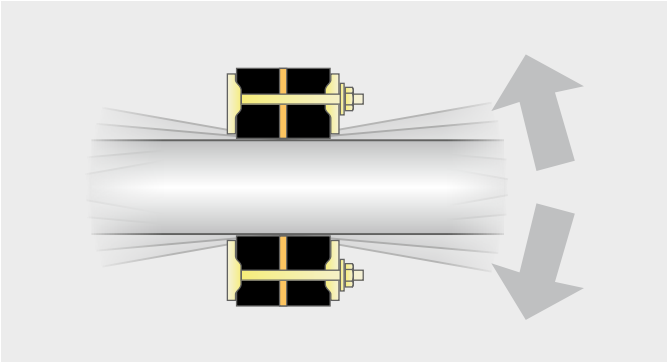
Movement in the direction of the pipe axis / longitudinal axis. This movement can possibly receive gasket inserts. The clarification with experts in the individual case is indispensable.



Axial displacement

Angling

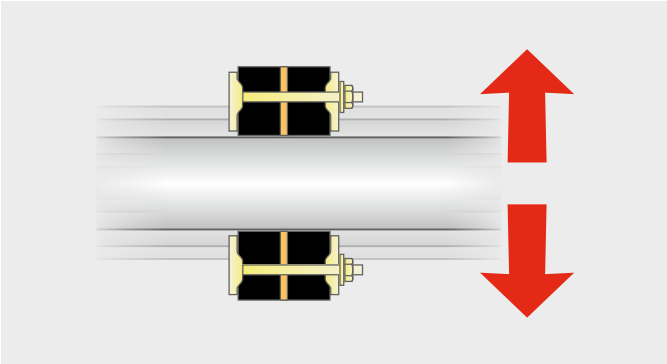
Inclination of the pipe axis. The center of rotation must be in the center of the gasket insert. This movement can possibly receive gasket inserts. The clarification with experts in the individual case is indispensable.



Angling

Lateral movement

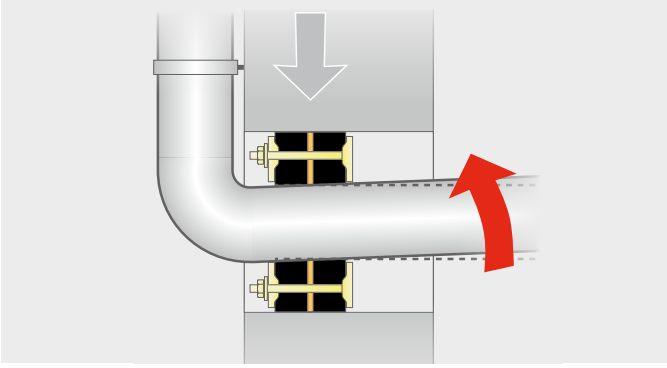
Lateral displacement of the pipe (radial movement). The gasket insert cannot bear the lateral displacement. This movement must therefore be excluded through constructive measures.



Lateral movement

Subsidences

Settling of buildings may lead to a misalignment or twisting of the pipe. The gasket insert cannot bear the displacement/twisting. This displacement must therefore be excluded through constructive measures.



Subsidences

5 | LITERATURE

[1] Standards Committee Construction in the DIN German Institute for Standardization: Draft DIN 18533 Sealing of ground-touching components - Part 1: Requirements, planning and implementation principles. Beuth Verlag GmbH, Berlin December 2015

[2] Standards Committee Construction in the DIN German Institute for Standardization: Draft DIN 18533 Sealing of ground-touching components - Part 3: When used with sealants to be processed in liquid form. Beuth Verlag GmbH, Berlin December 2015

[3] Standards Committee Construction in the DIN German Institute for Standardization: DAfStb guideline, waterproof structures made of concrete (WP Directive). Beuth Verlag GmbH, Berlin November 2003

A 06.17/MT 149-1-EN

CHAPTER 4: TUBING TABLES

STANDARD DIAMETER NON-COMBUSTIBLE PIPES

		Material / type of pipe									
		Copper	Steel								
		DIN EN 12449 Current as of 07/12	DIN EN 1057 Current as of 06/10	DIN EN 10255 Current as of 07/07	DIN 2460 Current as of 08/09	DIN EN 10220[1] Current as of 03/03			Precision steel pipes		for sewage water
									seamless	welded	
						Series 1	Series 2	Series 3	DIN EN 10305-1 Current as of 05/10	DIN EN 10305-3 Current as of 05/10	DIN EN 1123-2 Current as of 12/07
Diameter [inch]	DN / NW [mm]	actual outer pipe diameter [mm] (please specify when ordering)									
	4	from 3 to 450 mm possible				10.2			4		
	5						12		5		
1/8	6		6	10.2			12.7		6	6	
	7					13.5			7		
1/4	8		8	13.5				14	8	8	
	9						16		9		
3/8	10		10	17.2		17.2			10	10	
								18			
							19				
	12		12				20		12	12	
	14		14			21.3			14		
1/2	15		15	21.3				22	15	15	
							25				
								25.4			
	16		16			26.9			16	16	
	18		18					30	18	18	
	19						31.8			19	
3/4	20			26.9			32		20	20	
						33.7					
								35			
	22		22				38		22	22	
1	25		25	33.7			40		25	25	
	26					42.4			26		
	28		28					44.5	28	28	
	30					48.3			30	30	
1¼	32			42.4			51		32	32	
	35		35					54	35	35	
	38						57		38	38	
1½	40		40	48.3		60.3			40	40	42
							63.5				
	44						70			44	
	42		42					73	42	42	
	45					76.1			45	45	
	48							82.5	48		
						88.9					
2	50			60.3			101.6		50	50	53
								108			
						114.3					
							127				
							133				
						139.7					
								141.3			
								152.4			

[1] Is not assigned to any DN or nominal diameter. | [2] The average outer diameter of the jacket pip may be increased by up to 2% after foaming. | [3] No guarantee for correctness

DIAMETER UP TO 2" OR DN 50

		Material / type of pipe								
		Stainless steel pipes					Molding			District heating mains
							SML	ductile		
		DIN ISO 1127[*1)], Current as of 03/97			DIN 11 850, Current as of 06/16		DIN EN 877 Current as of 01/10, DIN 19522 Current as of 12/10	DIN EN 969 Current as of 07/09	DIN EN 598 Current as of 10/09, DIN EN 545 Current as of 09/11	DIN EN 253 Current as of 12/15 With PE[1,2,3]
		Series 1	Series 2	Series 3	Series 1	Series 2				
Diameter [inch]	DN / NW [mm]	actual outer pipe diameter [mm] (please specify when ordering)								
	4		6							
	5		8							
1/8	6		10							
	7	10.2								
1/4	8		12							
	9		12.7							
3/8	10	13.5			12	13				
				14						
			16							
	12	17.2								
	14			18						
1/2	15		19		18	19				
			20							
		21.3								
	16			22						
	18		25							
	19			25.4						
3/4	20	26.9			22	23				
				30						
			31.8							
	22		32							
1	25	33.7			28	29				
	26			35						
	28		38							
	30		40							
1¼	32	42.4			34	35	48	56		
	35			44.5						
	38	48.3								
1½	40		51		40	41				
				54						
	44		57							
	42	60.3								
	45	76.1	63.5							
	48		70	82.5						
		88.9								
2	50		101.6		52	53	58	66		
		114.3								
		139.7								

STANDARD DIAMETER NON-COMBUSTIBLE PIPES

		Material / type of pipe									
		Copper	Steel								
		DIN EN 12449 Current as of 07/12	DIN EN 1057 Current as of 06/10	DIN EN 10255 Current as of 07/07	DIN 2460 Current as of 08/09	DIN EN 10220[1] Current as of 03/03			Precision steel pipes		for sewage water
									seamless	welded	DIN EN 1123-2 Current as of 12/07
									DIN EN 10305-1 Current as of 05/10	DIN EN 10305-3 Current as of 05/10	
						Series 1	Series 2	Series 3			
Diameter [inch]	DN / NW [mm]	actual outer pipe diameter [mm] (please specify when ordering)									
2½		from 3 to 450 mm possible		76.1				159			
						168.3					
								177.8			
								193.7			
	70		70			219.1					73
	75							244.5			
	76					273				76	
	76.1		76.1			323.9					
						355.6					
3	80		88.9	88.9	88.9	406.4			80	80	89
	85					457			85		
	88.9					508					
	90							559	90	90	
	95					610			95		
4	100			114.3	114.3			660	100	100	102
						711					
							762				
						813					
								864			
	125				139.7	914					133
5						1016					
	127					1067				127	
	130					1118			130		
	133		133				1168			133	
	139.7			139.7		1219				139.7	
	140						1321		140		
6	150			165.1	168.3	1422			150		159
	159		159				1524			159	
	160					1626			160		
							1727				
						1829					
							1930				
						2032					
	193.7						2134			193.7	
8	200				219.1	2235			200		219
	219		219				2337				
	220						2438		220		
	225					2540					
	240								240		
10	250				273						273
	260								260		
	267		267								
12	300				323.9						324
14	350				355.6						
16	400				406.4						

[1] Is not assigned to any DN or nominal diameter. | [2] The average outer diameter of the jacket pip may be increased by up to 2% after foaming. | [3] No guarantee for correctness

DIAMETER UP TO 2½“ OR DN 70

		Material / type of pipe								
		Stainless steel pipes					Molding			District heating mains
							SML	ductile		
		DIN ISO 1127[1] Current as of 03/97			DIN EN ISO 11850 Current as of 06/16		DIN EN 877 Current as of 01/10, DIN 19522 Current as of 12/10	DIN EN 969 Current as of 07/09	DIN EN 598 Current as of 10/09, DIN EN 545 Current as of 09/11	DIN EN 253 Current as of 12/15 with PE[1,2,3]
		Series 1	Series 2	Series 3	Series 1	Series 2				
Diameter [inch]	DN / NW [mm]	actual outer pipe diameter [mm] (please specify when ordering)								
2½										75
		168.3								90
										110
										125
	70	219.1				70	78			140
	75						83			160
	76	273								180
	76.1	323.9								200
		355.6								225
3	80	406.4				85		98		250
	85	457								280
	88.9	508								315
	90									355
	95	610								400
4	100					104	110	118	118	450
		711								500
										560
		813								630
										710
	125	914				129	135		144	800
5										900
	127	1016								1000
	130									1100
	133									1200
	139.7									1400
	140									
6	150					154	160	170	170	
	159									
	160									
	193.7									
8	200					204	210	222	222	
	219									
	220									
	225									
	240									
10	250						274	274	274	
	260									
	267									
12	300						326	326	326	
14	350							378	378	
16	400						490	429	429	

STANDARD DIAMETER NON-COMBUSTIBLE PIPES

	Material / type of pipe						
	PE-HD, PE 63, PE 80, PE 100	PE		Cylinders for pipe post systems (PVC-U)	HT-pipe		
					PP		PVC-C
	DIN 8074[1] Current as of 12/11	DIN EN 12201-02 Current as of 12/13	DIN EN 1519-1 Current as of 01/00	DIN 6660[1] Current as of 04/96	DIN EN 1451-1[2], Current as of 10/98 DIN 19560-10[2], Current as of 03/99 (invalid)	DIN 8077[1] Current as of 09/08	DIN 8079 Current as of 10/09
DN / NW [mm]	actual outer pipe diameter [mm] (please specify when ordering)						
5							
6							
8							
10	10					10	10
12	12					12	12
15							
16	16	16				16	16
20	20	20				20	20
25	25	25				25	25
32	32	32	32		32	32	32
34					34		
38			38				
40	40	40	40		40	40	40
41					41		
44			44				
50	50	50	50		50	50	50
54					54		
56			56				
57			57				
60							
63	63	63	63	63	63	63	63
65							
70				70			
75	75	75	75		75	75	75
80			80	80	80		
90	90	90	90	90	90	90	90
100			100		100		
108				108			
110	110	110	110	110	110	110	110
125	125	125	125		125	125	125
132				132			
140	140	140			140	140	140
150							
160	160	160	160	160	160	160	160
180	180	180			180	180	180
200	200	200	200	200	200	200	200
225	225	225			225	225	225
250	250	250	250		250	250	250
280	280	280			280	280	280
300							
315	315	315	315		315	315	315
350							
355	355	355				355	355
400	400	400				400	400
450	450	450				450	450

[1] Is not assigned to any DN or nominal diameter. | [2] No guarantee for correctness

	Material / type of pipe				
	Rigid PVC		PVC pipe		PB pipes
	DIN 19531[2] Current as of 12/99	DIN EN 1452-2 Current as of 04/10	DIN 8062[1] Current as of 10/09	DIN EN 1565-1[2] Current as of 12/99	DIN 16969[1], Current as of 11/12 DIN 16968[2], Current as of 11/12
DN / NW [mm]	actual outer pipe diameter [mm] (please specify when ordering)				
5			5		
6			6		
8			8		
10			10		10
12		12	12		12
15					
16		16	16		16
20		20	20		20
25		25	25		25
32		32	32	32	32
34					
38					
40	40	40	40	40	40
41					
44					
50	50	50	50	50	50
54					
56					
57					
60					
63		63	63	63	63
65					
70	75				
75		75	75	75	75
80				80	
90		90	90	90	90
100	110			100	
108					
110		110	110	110	110
125	125	125	125	125	125
132					
140	140	140	140		140
150	160				
160		160	160	160	160
180		180	180		180
200	200	200	200		200
225		225	225		225
250	250	250	250		250
280		280	280		280
300	315				
315		315	315		315
350					
355		355	355		355
400	400	400	400		400
450		450	450		450

CHAPTER 5: GLOSSARY

DOYMA-GRIP
Particularly non-slip and aging-resistant elastomer mixture especially developed for DOYMA. This mixture prevents friction-reducing substances, for example, that mineral oils used as softening agents, cause the gasket insert to slide.

DDE
(Doyma Diameter Extension) With this system media lines are sealed across a broad range of dimensions without any tools. The adaptation to the different pipe or cable diameters is achieved by means of rubber modules of different sizes which can be pulled out on both sides.

DPS
(Double Profile System) Name for DOYMA's two-sided, asymmetrical profiling of the steel rings on the inside of the gasket inserts.

PRESSING WATER
water, which exerts a hydrostatic pressure on the seal.
- Corresponds to load class 1 according to WP guideline
- Corresponds to the load cases "partially accumulating seepage water" and "pressing water" according to DIN 18195
- Corresponds to the Water effect class W2-E "pressing water" according to DIN 18333 - draft

GASTIGHT
Describes the following property of a gasket insert: Tight against all gases which do not attack the material (e.g. air, nitrogen, inert gases, etc.)

ITL
(Integrated Torque Limiter) always guarantees the correct torque during the tightening. Nuts which were precisely developed for this purpose, will separate quickly and reliably at a predefined torque.

KMB/PMBC
Plastic modified bitumen coating

KTW-RECOMMENDATION
Health assessment of plastics and other non-metallic materials within the scope of the food and consumer goods legislation for the drinking water sector.

WET ROOMS
Interior spaces, where water accrues in such an amount that a floor drainage is required for its removal. Bathrooms in the residential construction without floor drain are not included in the wet rooms. These are referred to as humid rooms.

NOMINAL WIDTH
(short code DN) characteristic size, which corresponds to the actual inner diameter of DOYMA products.

NON-PRESSING WATER
does not exert any pressure on the seal, or only temporarily exerts a slight hydrostatic pressure.
- Corresponds to load class 2 according to WP guideline
- Corresponds to the load cases "soil moisture and non-accumulating seepage water" and "non-pressing water" according to DIN 18195
- Corresponds to the water effect class W1-E "ground moisture and non-pressing water" according to DIN 18333 - draft

SPECIAL FIBRE CEMENT PIPE SLEEVES
(short code SFZ) consists of cement reinforced with artificial fibers. Special feature of this material: nearly the same coefficient of expansion as concrete.

STS
(Soft Tight System) solves the sealing problem for heavily structured pipe surfaces with absolute ease: A gasket insert, which uses a soft butyl tape to reach deep into the grooves of the pipe surface, where it performs a reliable and permanent sealing function.

BLACK TANK
Not watertight structures must be protected against penetrating water through a seal. This sealing is carried out in the form of a web, a spatula or a liquid to be processed, and thus creates a skin-like seal. Since the material bitumen plays an important role here, these seals are also referred to as "black tank".

WHITE TANK
Watertight or water impermeable structures do not require an additional web sealing. These include above all the structures made of waterproof reinforced concrete (WP concrete). These building seals are also referred to as "white tank".

WP CONCRETE
Waterproof concrete

PACKINGS
In accordance with DIN 18195/DIN 18533, single-layered, loose-laid tanking membranes must be fitted with permanently compatible packings arranged on both sides. The additives may either consist of the material of the tanking membrane or be made of material-compatible elastomers.

PLUS X AWARD

EXCELLENT SEALING SYSTEMS

GASKET INSERT
Curaflex Nova® Multi

PLUS X AWARD® honored as: BEST PRODUCT OF THE YEAR 2014

PLUS X AWARD® 2014 achieved for: Innovation

PLUS X AWARD® 2014 achieved for: Functionality

PLUS X AWARD® 2014 achieved for: High Quality

GASKET INSERT
Curaflex Nova® Senso

PLUS X AWARD® honored as: BEST PRODUCT OF THE YEAR 2014

PLUS X AWARD® 2014 achieved for: Innovation

PLUS X AWARD® 2014 achieved for: Functionality

PLUS X AWARD® 2014 achieved for: High Quality

BUILDING SERVICES DUCT SYSTEM
Quadro-Secura® E X-LWL

E 2 X-LWL Electricity

E 2 X-LWL Water

PLUS X AWARD® honoured as: BEST PRODUCT 2015/2016

PLUS X AWARD® 2015 ausgezeichnet für: Innovation, High Quality, Funktionalität

25 years guarantee

on ALL DOYMA products.

CERTIFICATE

In addition to the legal rights of the customer, DOYMA will guarantee the proper functioning of your DOYMA product for 25 years from the date of purchase. The cutoff date of the validity is 01.01.2007. If the DOYMA product nevertheless fails during this time due to a deficiency of the product, and therefore there is a defect follow-up, DOYMA will:

- Replace the defective DOYMA product.
- The costs necessary for the installation and removal will be reimbursed by DOYMA up to a maximum amount of €10,000 after prior consultation with DOYMA. DOYMA reserves the right to carry out the necessary work within the framework of the maximum amount itself or to have it carried out by a reliable third party.
- Reimburse any damage to your property resulting from a deficiency of the DOYMA product, in particular any required drying, painting and masonry work, upon prior agreement with DOYMA, up to a maximum sum of 100.000 € in each individual case, to the extent that the damages were foreseeable for DOYMA. DOYMA reserves the right to execute the work necessary for the elimination of damages by itself, or have the work executed by a reliable third party.

This warranty is valid only in the event that the DOYMA product is actually defective, that is, as far as the DOYMA product's failure is attributable to the fact that the product was installed contrary to the recognized rules of technology or our installation and use guidelines. The warranty shall also not be applicable if the failure of the DOYMA product is attributable to a damage to the product caused by you. If you cannot refute a reasoned objection from DOYMA that one of the above-mentioned grounds of exclusion is applicable, the rights from the warranty shall expire.

The warranty can only be asserted upon presentation of the invoice for the contested DOYMA product. Without this invoice it will not be possible to assert any rights from this warranty.

Please send this invoice together with your complaint to:

DOYMA GmbH & Co
Industriestraße 43-57
D-28876 Oyten
Fax: 0049 (4207) 91 66-199

The scope of validity of this guarantee is limited to the territory of the European Union and Switzerland. If you purchased or used the DOYMA product outside the European Union or Switzerland, this warranty shall not apply, in which case the customer is referred to the legal provisions.
For all legal relations between DOYMA and the customer under this guarantee agreement, only the law applicable to the legal relationship of domestic parties to our domicile (German law) shall apply under exclusion of foreign law; The validity of the UN Convention on the International Sale of Goods (CISG) is excluded. For all disputes arising from this warranty the exclusive place of jurisdiction is Oyten, Federal Republic of Germany.

A.06.17/MT 149-1-EN

NOTES

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DOYMA PRODUCT OVERVIEW

SEALING | SYSTEMS

PIPE DUCTS

GASKET INSERTS

PIPE SLEEVES

A06.17/MT 149-1-EN

LINK CHAINS

BUILDING SERVICES DUCT SYSTEM

SINGLE & MULTI-COMPARTMENT BILLING SERVICES DUCT SYSTEM

LOAD CASES

NON-PRESSING WATER
CORRESPONDS TO THE LOAD CLASS 2, W1-E OR W3-E
>>> PAGE 144

PRESSING WATER
CORRESPONDS TO THE LOAD CLASS 1, W2-E, W2.1-E OR W1-B TO W3-B
>>> PAGE 144

TESTS

EXAMPLE:
TIGHTNESS TEST WITH SPECIFICATION OF THE CERTIFICATE NO. AND THE TEST INSTITUTE
>>> PAGE 126 - 127

RADON TIGHTNESS
>>> PAGE 126

FHRK STANDARDS

EXAMPLE:
FHRK STANDARD 20
>>> PAGE 7

DOYMA

DOUBLE PROFILE SYSTEM
>>> PAGE 144

INTEGRATED TORQUE LIMITER
>>> PAGE 144

DOYMA-GRIP
>>> PAGE 144

DOYMA DIAMETER EXTENSION
>>> PAGE 144

SOFT TIGHT SYSTEM
>>> PAGE 144

WARRANTY PROMISE
FOR ALL DOYMA PRODUCTS
>>> PAGE 146

PLUS X AWARD
DISTINCTION OF DOYMA PRODUCTS
>>> PAGE 145

LOAD CASES

NON-PRESSING WATER
CORRESPONDS TO THE LOAD CLASS 2, W1-E OR W3-E
>>> PAGE 144

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CORRESPONDS TO THE LOAD CLASS 1, W2-E, W2.1-E OR W1-B TO W3-B
>>> PAGE 144

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>>> PAGE 126 - 127

RADON TIGHTNESS
>>> PAGE 126

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EXAMPLE:
FHRK STANDARD 20
>>> PAGE 7

DOYMA

DOUBLE PROFILE SYSTEM
>>> PAGE 144

INTEGRATED TORQUE LIMITER
>>> PAGE 144

DOYMA-GRIP
>>> PAGE 144

DOYMA DIAMETER EXTENSION
>>> PAGE 144

SOFT TIGHT SYSTEM
>>> PAGE 144

WARRANTY PROMISE
FOR ALL DOYMA PRODUCTS
>>> PAGE 146

PLUS X AWARD
DISTINCTION OF DOYMA PRODUCTS
>>> PAGE 145

We will gladly consult you!

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