



MASTERTEC

SPECIAL ARTICLES FOR REINFORCED CONCRETE CONSTRUCTION

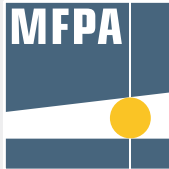


PRESSURE WATER-TIGHT SERVICE DUCTS

PRODUCT RANGE 2020 2021

Product safety

Our products are certified by testing institutes for the various areas of application.



Dr. J. Kemschi

Sachverständigenbüro

o.b.u.v. Sachverständiger für Radon (IHK Bonn/Rhein-Sieg)

IAF - Radioökologie GmbH

Labor für Radionuklidanalytik
Radiologische Gutachten
Consulting

Our pictograms

Testing of impermeability to pressurised water



Testing of resistance to various media



Testing of impermeability to the naturally-occurring radioactive inert gas Radon



PRODUCT RANGE

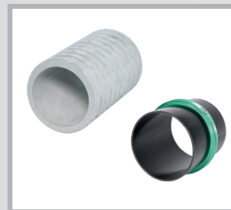
RONDO sealing collars pages 4 – 8

- RONDO Standard
- RONDO Protect
- RONDO Ecco
- RONDO Base



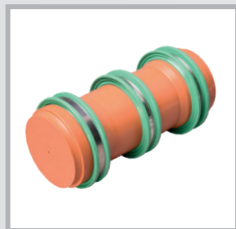
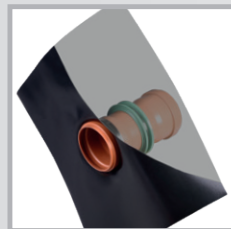
Lining pipes pages 9 – 15

- FASO lining pipe
- WELLO active lining pipe
- DURO Plus high-pressure lining pipes
- STEELO stainless steel lining pipe
- MASTERTEC cable bushing



Sewage pipe bushing systems pages 16 – 24

- Double socket type (DM)
- Flow direction (FR) type
- Flow direction Universal (FRU) type
- Foil flange (FFL) type
- Double socket double wall (DM DW) type
- Ground drains
- Universal type
- Accessories for lining pipes and pipe bushings



Gasket inserts pages 25 – 28

- MASTER-RING
- MASTER-RING Multi
- MASTER-RING Multiple



FLEX 2000 pages 29

- Sealing compound for waterproofing of pipe and cable ducts



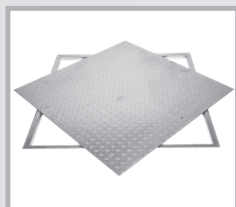
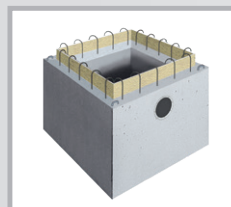
MASTER-SEAL pages 30 – 31

- Modular seal



PILO Pump sump pages 32 – 35

- PILO Pump sump Multi "Standard"
- PILO Pump sump "Spezial"
- Shaft cover for pump sump



RONDO Standard sealing collar



YouTube



Dimensions

Art. no.	Type	for pipe outer diameters mm	Suitable for outer dia. from (mm) to (mm)		PU	Secondary packaging	Weight per pc.
090890	RO 10	For lightning protection round conductors	8	10	1 pc.	Carton of 100 pcs.	0.13 kg
090892	RO flat	For earthing strap	30x3.5	+ 30x3	1 pc.		0.15 kg
090988	RO EFP	For hexagon fixed earthing terminal			1 pc.	Bag of 25 pcs.	0.04 kg
090900	RO 25	25	25	25	1 pc.		0.25 kg
090902	RO 32	32	31	32	1 pc.		0.25 kg
090904	RO 40	40	39	42	1 pc.		0.26 kg
090906	RO 50	50	48	53	1 pc.		0.29 kg
090908	RO 63	63	61	64	1 pc.		0.32 kg
090910	RO 75	75	72	80	1 pc.		0.36 kg
090912	RO 90	90	87	92	1 pc.		0.45 kg
090914	RO 110	Sewage pipe DN 100 110	107	115	1 pc.	Carton of 50 pcs.	0.48 kg
090916	RO 125	Sewage pipe DN 125 125	123	130	1 pc.	Carton of 40 pcs.	0.51 kg
090918	RO 140	140	137	147	1 pc.		0.54 kg
090920	RO 160	Sewage pipe DN 150 160	157	166	1 pc.	Carton of 35 pcs.	0.62 kg
090921	RO 170	170	167	177	1 pc.		0.66 kg
090922	RO 180	180	177	187	1 pc.		0.68 kg
090924	RO 200	Sewage pipe DN 200 200	197	207	1 pc.	Carton of 30 pcs.	0.70 kg
090926	RO 225	225	220	230	1 pc.		0.81 kg
090928	RO 250	Sewage pipe DN 250 250	245	260	1 pc.		0.89 kg
090930	RO 280	280	275	290	1 pc.		0.92 kg
090932	RO 315	Sewage pipe DN 300 315	310	324	1 pc.		1.07 kg
090934	RO 355	355	350	365	1 pc.		1.18 kg
090936	RO 400	Sewage pipe DN 400 400	395	410	1 pc.		1.31 kg
090938	RO 450	450	440	460	1 pc.		1.90 kg
090940	RO 500	Sewage pipe DN 500 500	495	515	1 pc.		2.15 kg
090942	RO 560	560	555	580	1 pc.		2.60 kg
090944	RO 630	630	625	650	1 pc.		2.90 kg
090946	RO 710	710	705	735	1 pc.		3.00 kg
090948	RO 800	800	795	830	1 pc.		3.40 kg
090950	RO 900	900	895	930	1 pc.		4.25 kg
090952	RO 1000	1000	995	1030	1 pc.		4.45 kg
090954	RO 1200	1200	1195	1240	1 pc.		5.75 kg

The sealing collars are even easier to install if placed in warm water beforehand (10 minutes).

RONDO Protect



The sealing collar with maximum media and pressure resistance

The RONDO Protect sealing collar offers the following advantages compared to the RONDO Standard:

Water pressure test

- High-pressure test up to 80 m water column

Resistance

In addition to use in agricultural slurry/liquid manure/silage effluent systems and biogas systems, the red TPE mixture offers effective protection against many aggressive media, e.g.:

- Animal excretions
- Diluted sulphuric acid
- Silage effluent
- Methane gas



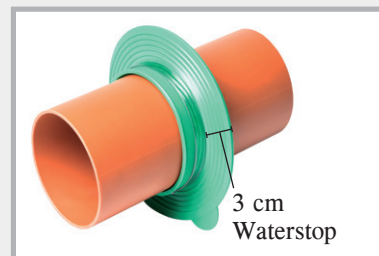
Dimensions

Art. no.	Type	for pipe outer diameters mm	Suitable for outer dia. from (mm) to (mm)	PU	Weight per pc.
091225	ROPRO 10	For lightning protection round conductors	8 10	1 pc.	0.13 kg
091226	ROPRO flat	For earthing strap	30x3.5 + 30x3	1 pc.	0.15 kg
091227	ROPRO 25	25	25 25	1 pc.	0.25 kg
091228	ROPRO 32	32	31 32	1 pc.	0.25 kg
091229	ROPRO 40	40	39 42	1 pc.	0.26 kg
091230	ROPRO 50	50	48 53	1 pc.	0.29 kg
091231	ROPRO 63	63	61 64	1 pc.	0.32 kg
091232	ROPRO 75	75	72 80	1 pc.	0.36 kg
091233	ROPRO 90	90	87 92	1 pc.	0.45 kg
091234	ROPRO 110	Sewage pipe DN 100 110	107 115	1 pc.	0.48 kg
091235	ROPRO 125	Sewage pipe DN 125 125	123 130	1 pc.	0.51 kg
091236	ROPRO 140	140	137 147	1 pc.	0.54 kg
091237	ROPRO 160	Sewage pipe DN 150 160	157 166	1 pc.	0.62 kg
091238	ROPRO 170	170	167 177	1 pc.	0.66 kg
091239	ROPRO 180	180	177 187	1 pc.	0.68 kg
091240	ROPRO 200	Sewage pipe DN 200 200	197 207	1 pc.	0.70 kg
091241	ROPRO 225	225	220 230	1 pc.	0.81 kg
091242	ROPRO 250	Sewage pipe DN 250 250	245 260	1 pc.	0.89 kg
091243	ROPRO 280	280	275 290	1 pc.	0.92 kg
091244	ROPRO 315	Sewage pipe DN 300 315	310 324	1 pc.	1.07 kg
091245	ROPRO 355	355	350 365	1 pc.	1.18 kg
091246	ROPRO 400	Sewage pipe DN 400 400	395 410	1 pc.	1.31 kg

The sealing collars are even easier to install if placed in warm water beforehand (10 minutes).

RONDO Ecco

The low-priced sealing collar
for waterproofing of pipes and cables



Supplied ready for installation with
stainless steel fastening straps

Dimensions

Art. no.	Type	Suitable for outer dia. from to	PU	Secondary packaging	Weight per pc.
091050	RO Ecco 110	107-115 mm	1 pc.	Carton of 80 pcs.	0.30 kg
091053	RO Ecco 125	122-130 mm	1 pc.	Carton of 70 pcs.	0.34 kg
091056	RO Ecco 160	157-170 mm	1 pc.	Carton of 60 pcs.	0.40 kg
091059	RO Ecco 200	197-210 mm	1 pc.	Carton of 50 pcs.	0.47 kg

RONDO Base



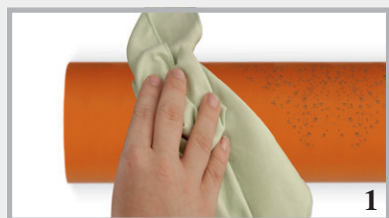
High-pressure
sealing collar

70 m water column with only
one fastening strap

Dimensions

Art. no.	Type	for pipe outer diameters/mm	PU	Secondary packaging	Weight per pc.
090970	RO Base 90	90	1 pc.	Carton of 25 pcs.	0.13 kg
090978	RO Base 110	110	1 pc.	Carton of 25 pcs.	0.16 kg
090980	RO Base 125	125	1 pc.	Carton of 25 pcs.	0.17 kg
090984	RO Base 160	160	1 pc.	Carton of 25 pcs.	0.22 kg
090990	RO Base 200	200	1 pc.	Carton of 25 pcs.	0.24 kg
090994	RO Base 250	250	1 pc.	Carton of 10 pcs.	0.32 kg
090998	RO Base 315	315	1 pc.	Carton of 10 pcs.	0.40 kg

Installation RONDO Base



Clean outside of pipe



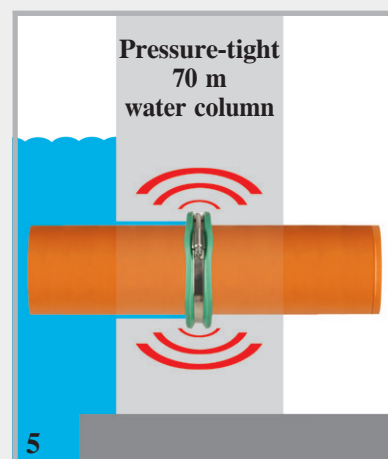
Pull on RONDO Base



Position sealing collar, ideally at
centre of wall or foundation



Tighten fastening strap to approx.
5-6 Nm.

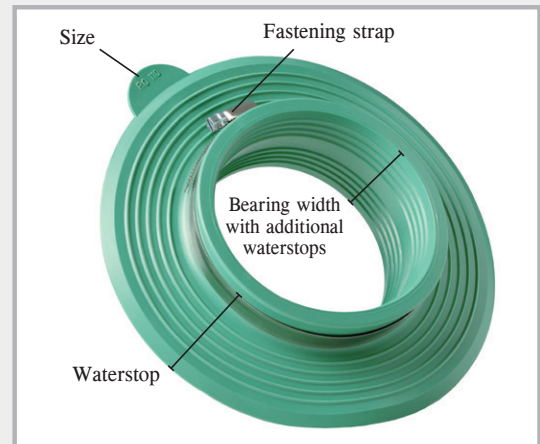


RONDO Base installation
complete

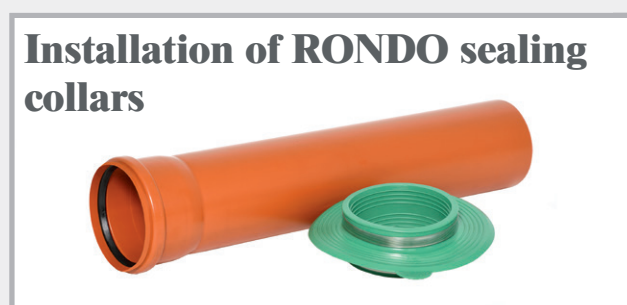
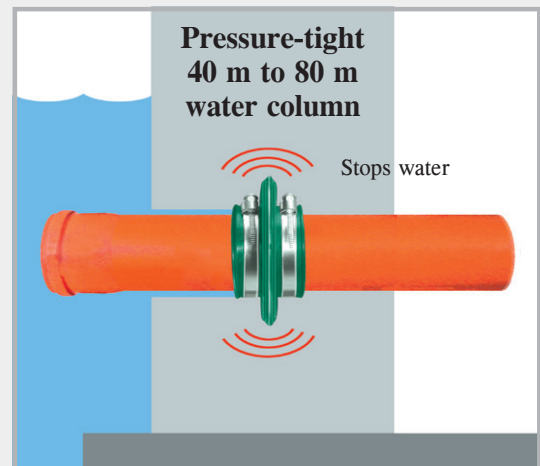
RONDO Standard + RONDO Protect Product description

RONDO sealing collars securely seal pipes and cables made of plastic, steel, fibre cement and vitrified clay against a water column of up to **40 metres** (Standard) or **80 metres** (Protect). The bushings in concrete foundations and walls are securely sealed against groundwater and pressurised water.

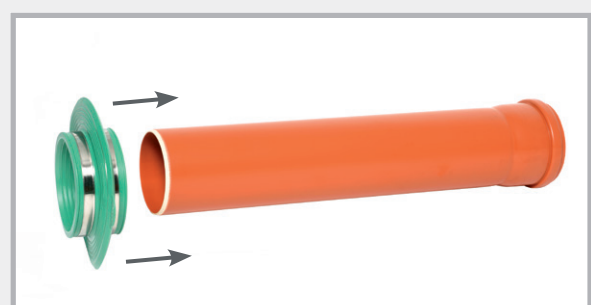
	RONDO Protect	RONDO Standard	
Colour	red	green	black
Material	modified TPE	TPE	EPDM
Size	10-400 mm	10-400 mm	450-1200 mm
Height of waterstop	4 cm	4 cm	4 cm
Number of waterstops	1	1	2
Bearing width	6 cm	6 cm	8 cm
Pressure test	80 m water column	50 m water column	40 m water column
Resistance			
Diluted acids	✓	✓	✓
Alkalis	✓	✓	✓
Ground water	✓	✓	✓
Radon	✓	✓	✓
Liquid manure	✓	✓	✓
Slurry	✓	✓	✓
Fermentation mash	✓		
Methane gas	✓		
Animal excretions	✓		
Silage effluent	✓		
Diluted sulphuric acid	✓		
Further resistances are available on request			



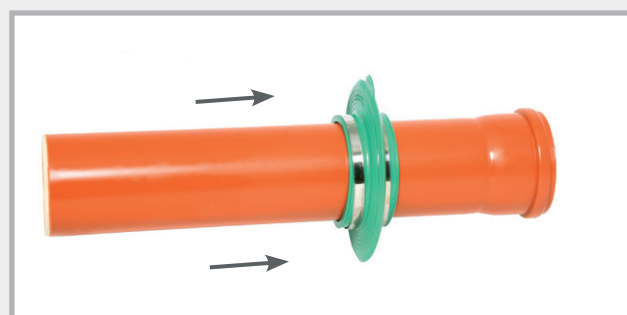
The sealing collar is supplied with fastening straps, ready for installation



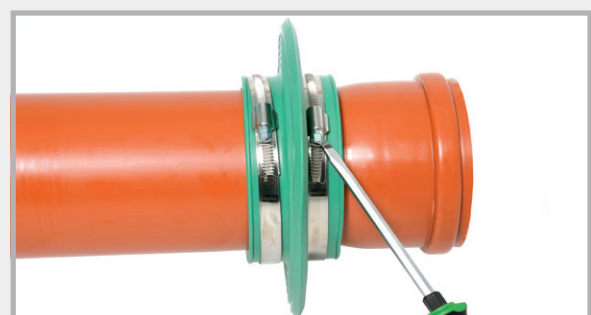
Sewage pipe and Rondo 110



Pushing on the sealing collar



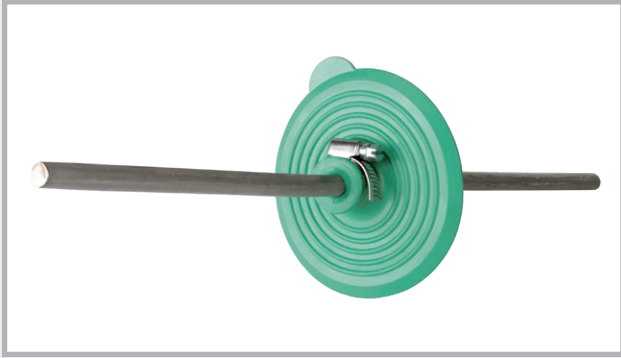
Positioning the sealing collar



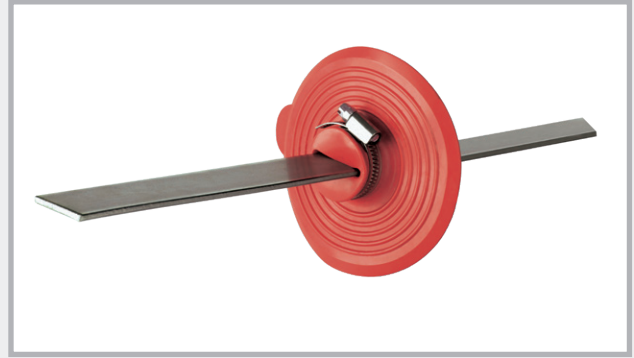
Securing by tightening the fastening straps

The surface of the pipe should be cleaned, if dirty.

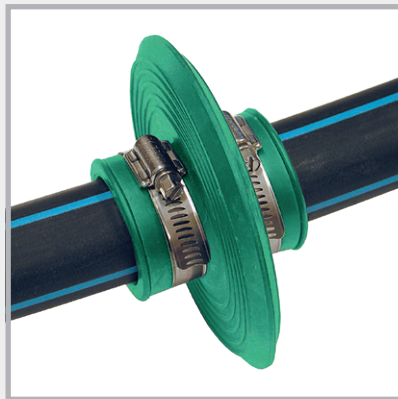
RONDO Sealing Collars practical applications



RONDO for lightning protection round conductor



RONDO Protect for lightning protection flat conductor



The sealing collar can be used for almost all pipe types. Regardless of whether your pipes are made of plastic, vitrified clay, concrete, cast iron, or steel – the collar ensures perfect sealing.

At the construction site



The RONDO, shortly before placement of concrete. The drainpipes are securely and permanently sealed against rising moisture.

Lining pipes

Pressure water-tight recess pipes for installation flush with formwork



FASO lining pipe



WELLO active lining pipe



DURO Plus high-pressure lining pipes + double-wall DW3 type



STEELLO stainless steel lining pipe

For the subsequent, professional introduction of pipes and lines into buildings, the use of lining pipes is essential. The built-in components are manufactured for the corresponding wall thickness, enable installation flush with the formwork and form a pressure water-tight bond with the surrounding concrete component.

They leave a circular recess with a smooth surface in the wall, into which pipes and cables can subsequently be fed then sealed with MASTER-Ring gasket inserts or MASTER-SEAL modular seals.

FASO lining pipe



Our fibre cement lining pipes are available immediately ex stock in sizes DN 80 to DN 600.

The pipe is smooth on the inside and corrugated and rough on the outside. The bond formed by the corrugated exterior of the pipe with the concrete prevents water permeation.

If you wet the lining pipes prior to placement of the concrete, the bond with the concrete will be even more effective.



FASO inner Ø mm	outer Ø mm	Standard lengths											
		200 mm	240 mm	250 mm	300 mm	350 mm	365 mm	400 mm	500 mm	600 mm	800 mm	1000 mm	1250 mm
DN 80 Weight/pc.	120	080210 2.4 kg	080211 2.8 kg	080212 3.0 kg	080213 3.5 kg	080214 4.1 kg	080215 4.3 kg	080216 4.7 kg	080217 5.9 kg	080218 7.0 kg	080918 9.4 kg	080950 11.7 kg	080219 14.6 kg
DN 100 Weight/pc.	140	080220 2.9 kg	080221 3.4 kg	080222 3.6 kg	080223 4.3 kg	080224 5.0 kg	080225 5.2 kg	080226 5.7 kg	080227 7.1 kg	080228 8.5 kg	080921 11.4 kg	080952 14.2 kg	080229 17.8 kg
DN 125 Weight/pc.	165	080230 3.6 kg	080231 4.3 kg	080232 4.5 kg	080233 5.4 kg	080234 6.3 kg	080235 6.6 kg	080236 7.2 kg	080237 9.0 kg	080238 10.7 kg	080922 14.3 kg	080954 17.9 kg	080239 22.4 kg
DN 150 Weight/pc.	190	080240 4.1 kg	080241 4.9 kg	080242 5.1 kg	080243 6.1 kg	080244 7.1 kg	080245 7.4 kg	080246 8.1 kg	080247 10.1 kg	080248 12.1 kg	080924 16.2 kg	080956 20.1 kg	080249 25.1 kg
DN 200 Weight/pc.	250	080250 6.5 kg	080251 7.8 kg	080252 8.1 kg	080253 9.7 kg	080254 11.3 kg	080255 11.8 kg	080256 12.9 kg	080257 16.1 kg	080258 19.3 kg	080926 25.8 kg	080958 32.2 kg	080259 40.2 kg
DN 250 Weight/pc.	300	080260 8.1 kg	080261 9.7 kg	080262 10.1 kg	080263 12.1 kg	080264 14.2 kg	080265 14.8 kg	080266 16.2 kg	080267 20.2 kg	080268 24.2 kg	080928 32.3 kg	080960 40.1 kg	080269 50.2 kg
DN 300 Weight/pc.	350	080270 9.8 kg	080271 11.8 kg	080272 12.3 kg	080273 14.7 kg	080274 17.1 kg	080275 17.9 kg	080276 19.6 kg	080277 24.4 kg	080278 29.3 kg	080930 39.1 kg	080962 48.9 kg	080279 61.1 kg
DN 350 Weight/pc.	400	080280 11.2 kg	080281 13.4 kg	080282 14.0 kg	080283 16.7 kg	080284 19.5 kg	080285 20.4 kg	080286 22.3 kg	080287 27.9 kg	080288 33.4 kg	080932 44.6 kg	080964 55.7 kg	080289 69.6 kg
DN 400 Weight/pc.	460	080290 15.4 kg	080291 18.5 kg	080292 19.3 kg	080293 23.1 kg	080294 26.9 kg	080295 28.1 kg	080296 30.8 kg	080297 38.5 kg	080298 46.1 kg	080934 61.5 kg	080966 76.9 kg	080299 96.1 kg
DN 450 Weight/pc.	510	080300 17.5 kg	080301 21.0 kg	080302 21.9 kg	080303 26.2 kg	080304 30.6 kg	080305 31.9 kg	080306 35.0 kg	080307 43.7 kg	080308 52.4 kg	080936 69.6 kg	080968 87.4 kg	080309 109.3 kg
DN 500 Weight/pc.	570	080310 22.4 kg	080311 26.8 kg	080312 28.0 kg	080313 33.5 kg	080314 39.1 kg	080315 40.8 kg	080316 44.7 kg	080317 55.9 kg	080318 67.0 kg	080938 89.4 kg	080970 111.7 kg	080319 139.6 kg
DN 600 Weight/pc.	670	080320 26.8 kg	080321 32.1 kg	080322 33.5 kg	080323 40.1 kg	080324 45.9 kg	080325 48.8 kg	080326 53.5 kg	080327 66.9 kg	080328 80.2 kg	080940 107.0 kg	080972 133.7 kg	080329 167.1 kg
DN 700 Weight/pc.	780	080330 38.0 kg	080331 45.6 kg	080332 47.5 kg	080333 57.0 kg	080334 66.5 kg	080335 69.4 kg	080336 76.0 kg	080337 95.0 kg	080338 114.0 kg	080942 152.0 kg	080974 190.0 kg	080339 237.5 kg
DN 800 Weight/pc.	880	080340 42.5 kg	080341 51.0 kg	080342 53.2 kg	080343 63.8 kg	080344 74.7 kg	080345 77.6 kg	080346 85.0 kg	080347 106.3 kg	080348 127.5 kg	080944 170.0 kg	080976 212.5 kg	080349 265.6 kg

Special lengths: Any intermediate lengths can be supplied.

Lead time for DN 700 and DN 800: 10 days

DN 80 to DN 600 can be extended up to 1600 mm: 40% surcharge

Delivery: From DN 250 only by forwarding agent; up to DN 200 by parcel service with restrictions, clarify dispatch method

We recommend installation with closure plugs

WELLO active lining pipe



When the use of sealing collars is not possible, lining pipes are installed, which enable the subsequent water-tight lead-through of the medium pipe into the building.

The cost-efficient PE lining pipe is available at short notice ex stock in dia. 100 to 400 mm. Its inner surface is smooth. The corrugated outside ensures a firm bond with the concrete. Two swelling tapes applied centrally around the lining pipe act as waterstops.



Tested for impermeability up to 20 m water column

WELLO inner Ø mm	Standard lengths								
	200 mm	240 mm	250 mm	300 mm	350 mm	365 mm	400 mm	500 mm	600 mm
DN 100 Weight/pc.	080130 0.28 kg	080131 0.31 kg	080132 0.32 kg	080133 0.35 kg	080134 0.39 kg	080135 0.40 kg	080136 0.43 kg	080137 0.50 kg	080138 0.57 kg
DN 125 Weight/pc.	080140 0.33 kg	080141 0.36 kg	080142 0.37 kg	080143 0.42 kg	080144 0.46 kg	080145 0.48 kg	080146 0.51 kg	080147 0.60 kg	080148 0.69 kg
DN 150 Weight/pc.	080150 0.44 kg	080151 0.49 kg	080152 0.51 kg	080153 0.57 kg	080154 0.64 kg	080155 0.66 kg	080156 0.70 kg	080157 0.84 kg	080158 1.01 kg
DN 200 Weight/pc.	080160 0.67 kg	080161 0.75 kg	080162 0.77 kg	080163 0.88 kg	080164 0.99 kg	080165 1.02 kg	080166 1.10 kg	080167 1.31 kg	080168 1.53 kg
*DN 250 Weight/pc.	080170 0.94 kg	080171 1.07 kg	080172 1.10 kg	080173 1.27 kg	080174 1.43 kg	080175 1.48 kg	080176 1.59 kg	080177 1.92 kg	080178 2.24 kg
DN 300 Weight/pc.	080180 1.19 kg	080181 1.36 kg	080182 1.41 kg	080183 1.62 kg	080184 1.83 kg	080185 1.90 kg	080186 2.04 kg	080187 2.47 kg	080188 2.89 kg
*DN 350 Weight/pc.	080190 1.70 kg	080191 1.96 kg	080192 2.02 kg	080193 2.35 kg	080194 2.67 kg	080195 2.77 kg	080196 3.00 kg	080197 3.65 kg	080198 4.30 kg
DN 400 Weight/pc.	080200 2.14 kg	080201 2.47 kg	080202 2.56 kg	080203 2.98 kg	080204 3.40 kg	080205 3.52 kg	080206 3.82 kg	080207 4.66 kg	080208 5.50 kg

Special lengths: Any intermediate lengths can be supplied.
Maximum length of lining pipe: 2000 mm

* DN 250 + DN 350 waterproofing with modular seal only

We recommend installation with closure plugs

DURO Plus high-pressure lining pipes



DURO Plus are high pressure-resistant lining pipes for secure and permanent routing of pipes and cables in buildings. A collar which can withstand water pressures of up to 7 bar is fitted to the lining pipes at the factory.

The diameters DN 50 to DN 300 are available within a few days. When ordering, please state whether you require the lining pipes with or without plugs.



DURO Plus with and without foil flange

DURO inner Ø mm	outer Ø mm	Standard lengths											
		200 mm	240 mm	250 mm	300 mm	350 mm	365 mm	400 mm	500 mm	600 mm	800 mm	1000 mm	1200 mm
DN 50 Weight/pc.	54	090010 0.31 kg	090013 0.37 kg	090016 0.39 kg	090019 0.46 kg	090022 0.54 kg	090025 0.56 kg	090028 0.62 kg	090031 0.78 kg	090034 0.93 kg	090037 1.24 kg	090040 1.56 kg	090043 1.87 kg
DN 80 Weight/pc.	85	090050 0.30 kg	090053 0.36 kg	090056 0.38 kg	090059 0.45 kg	090062 0.53 kg	090065 0.55 kg	090068 0.60 kg	090071 0.76 kg	090074 0.91 kg	090077 1.21 kg	090080 1.52 kg	090083 1.82 kg
DN 100 Weight/pc.	110	090110 0.60 kg	090113 0.72 kg	090116 0.76 kg	090119 0.91 kg	090122 1.06 kg	090125 1.10 kg	090128 1.21 kg	090131 1.52 kg	090134 1.82 kg	090137 2.43 kg	090140 3.04 kg	090143 3.64 kg
DN 125 Weight/pc.	137	090150 0.75 kg	090153 0.90 kg	090156 0.94 kg	090159 1.12 kg	090162 1.31 kg	090165 1.37 kg	090168 1.50 kg	090171 1.88 kg	090174 2.25 kg	090177 3.00 kg	090180 3.76 kg	090183 4.51 kg
DN 150 Weight/pc.	162	090210 0.86 kg	090213 1.03 kg	090216 1.08 kg	090219 1.29 kg	090222 1.51 kg	090225 1.57 kg	090228 1.72 kg	090231 2.16 kg	090234 2.59 kg	090237 3.45 kg	090240 4.32 kg	090243 5.18 kg
DN 200 Weight/pc.	214	090250 1.31 kg	090253 1.57 kg	090256 1.64 kg	090259 1.96 kg	090262 2.29 kg	090265 2.39 kg	090268 2.62 kg	090271 3.28 kg	090274 3.93 kg	090277 5.24 kg	090280 6.56 kg	090283 7.87 kg
DN 250 Weight/pc.	264	090310 1.63 kg	090313 1.95 kg	090316 2.04 kg	090319 2.44 kg	090322 2.85 kg	090325 2.97 kg	090328 3.26 kg	090331 4.08 kg	090334 4.89 kg	090337 6.52 kg	090340 8.16 kg	090343 9.79 kg
DN 300 Weight/pc.	316	090350 2.48 kg	090353 2.98 kg	090356 3.11 kg	090359 3.73 kg	090362 4.35 kg	090365 4.54 kg	090368 4.97 kg	090371 6.22 kg	090374 7.46 kg	090377 9.95 kg	090380 12.44 kg	090383 14.92 kg

Any intermediate lengths can be supplied

Lengths up to 3000 mm are available

We recommend installation with closure plugs

DURO Plus high-pressure lining pipes

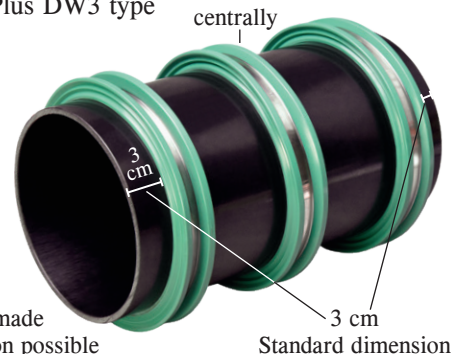
Double-wall (DW) type



DURO Plus double-wall type high-pressure lining pipes are specially designed for use in double-wall elements.

The waterstops in the edge zone prevent water permeation of the pipe bushing directly in the outer shells. The centrally mounted waterstop provides an additional seal in the core concrete.

DURO Plus pipe bushing
DURO Plus DW3 type



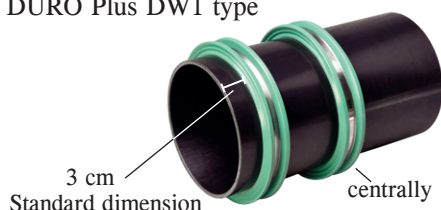
DURO Plus DW3 type product range

DURO-Ø DN mm	Wall thicknesses						
	200 mm	240 mm	250 mm	300 mm	350 mm	365 mm	400 mm
DN 80 Weight/pc.	090600 0.56 kg	090602 0.62 kg	090604 0.64 kg	090606 0.71 kg	090608 0.79 kg	090610 0.81 kg	090612 0.86 kg
DN 100 Weight/pc.	090614 0.92 kg	090616 1.04 kg	090618 1.08 kg	090620 1.23 kg	090622 1.38 kg	090624 1.42 kg	090626 1.53 kg
DN 125 Weight/pc.	090628 1.09 kg	090630 1.24 kg	090632 1.28 kg	090634 1.46 kg	090636 1.65 kg	090638 1.71 kg	090640 1.84 kg
DN 150 Weight/pc.	090642 1.30 kg	090644 1.47 kg	090646 1.52 kg	090648 1.73 kg	090650 1.95 kg	090652 2.01 kg	090654 2.16 kg
DN 200 Weight/pc.	090656 1.79 kg	090658 2.05 kg	090660 2.12 kg	090662 2.44 kg	090664 2.77 kg	090666 2.87 kg	090668 3.10 kg
DN 250 Weight/pc.	090670 2.27 kg	090672 2.59 kg	090674 2.68 kg	090676 3.08 kg	090678 3.49 kg	090680 3.61 kg	090682 3.90 kg
DN 300 Weight/pc.	090684 3.28 kg	090686 3.78 kg	090688 3.91 kg	090690 4.53 kg	090692 5.15 kg	090694 5.34 kg	090696 5.77 kg

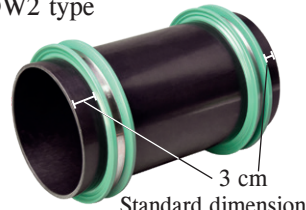
Any intermediate lengths can be supplied
Lengths up to 3000 mm are available

We recommend installation with the closure plug

Additional version:
DURO Plus DW1 type



Additional version:
DURO Plus DW2 type



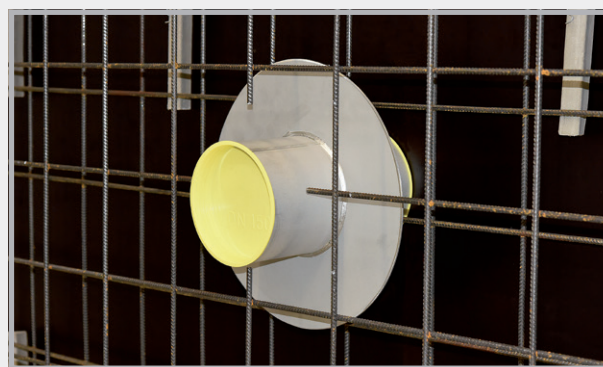
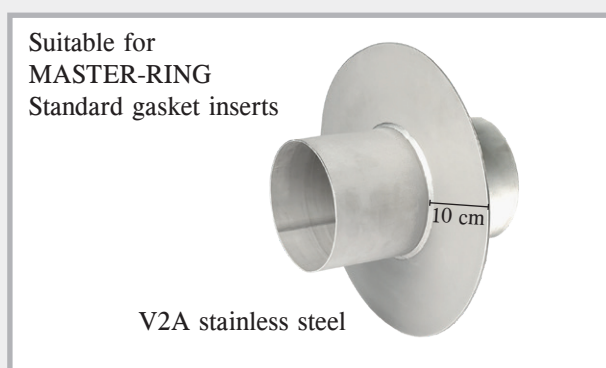


STEELO stainless steel lining pipe

with watertight centre flange against
pressurised and non-pressurised water

STEELO lining pipes are manufactured from V2A or V4A stainless steel. The centre flange is welded watertight.

The lining pipes are installed in locations where high stresses, e.g. chemical or thermal, are anticipated.



Dimensions

Always supplied with 2 closure plugs with inner diameter up to 400 mm

STEELO V2A lining pipe

STEELO inner Ø mm	Standard lengths always with closure plugs							Further lengths
	200 mm	240 mm	250 mm	300 mm	350 mm	365 mm	400 mm	
DN 80 Weight/pc.	081200 2.18 kg	081240 2.34 kg	081250 2.37 kg	081300 2.56 kg	081350 2.76 kg	081365 2.79 kg	081400 2.92 kg	on request
DN 100 Weight/pc.	082200 2.55 kg	082240 2.75 kg	082250 2.82 kg	082300 3.05 kg	082350 3.30 kg	082365 3.38 kg	082400 3.54 kg	on request
DN 125 Weight/pc.	083200 2.96 kg	083240 3.21 kg	083250 3.27 kg	083300 3.52 kg	083350 3.80 kg	083365 3.87 kg	083400 4.07 kg	on request
DN 150 Weight/pc.	084200 3.43 kg	084240 3.72 kg	084250 3.84 kg	084300 4.06 kg	084350 4.42 kg	084365 4.68 kg	084400 4.78 kg	on request
DN 200 Weight/pc.	085200 4.37 kg	085240 4.82 kg	085250 4.85 kg	085300 5.35 kg	085350 5.79 kg	085365 5.96 kg	085400 6.35 kg	on request
DN 250 Weight/pc.	086200 5.40 kg	086240 5.65 kg	086250 6.01 kg	086300 6.54 kg	086350 6.87 kg	086365 7.44 kg	086400 7.80 kg	on request
DN 300 Weight/pc.	087200 7.54 kg	087240 8.40 kg	087250 8.55 kg	087300 9.62 kg	087350 10.70 kg	087365 11.04 kg	087400 11.80 kg	on request
DN 400 Weight/pc.	088200 on request	088240 on request	088250 on request	088300 on request	088350 on request	088365 on request	088400 on request	on request
DN 500 Weight/pc.	089200 on request	089240 on request	089250 on request	089300 on request	089350 on request	089365 on request	089400 on request	on request
DN 600 Weight/pc.	089520 on request	089524 on request	089525 on request	089530 on request	089535 on request	089536 on request	089540 on request	on request

V4A = on request

MASTERTEC MKD 150 cable bushing

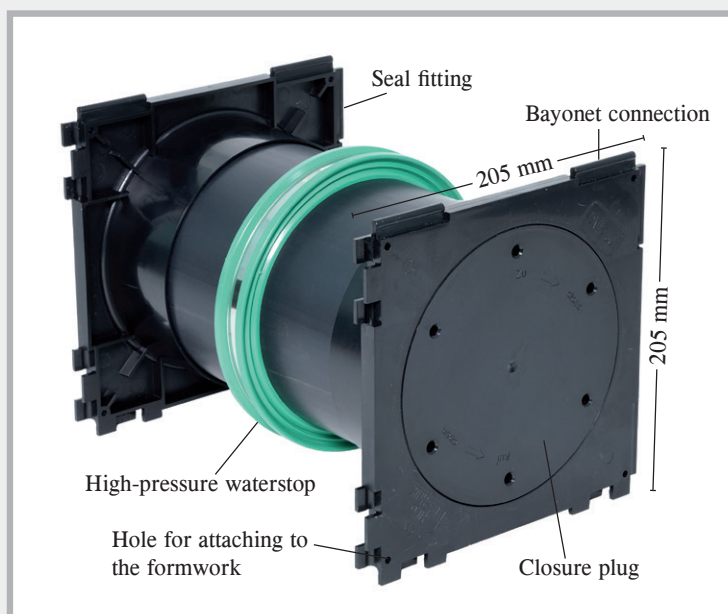


Stay flexible with the MKD 150 cable bushing

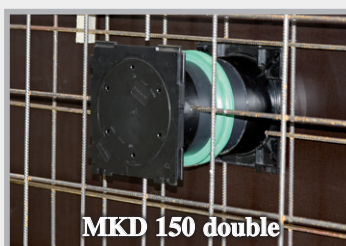
Product description

The MKD 150 cable bushing is manufactured in the corresponding wall thickness and consists of 2 seal fittings, a factory-installed high-pressure waterstop and a closure plug which is pressure-tight up to 3 bar. The bayonet connections are compatible with all standard systems.

- Flexible connection of cables in new buildings
- Sealed with the MASTERTEC high-pressure collar
- Stable design due to solid wall material
- Compatible with all standard systems



We recommend using gasket inserts for the waterproofing. You can achieve maximum pressure resistance using this system.





Seal fitting on both sides



Seal fitting on one side; closure plug on the other side

Product range

MKD 150 – double version				MKD 150 – single version			
Art. no.	Wall thickness	PU	Weight per pc.	Art. no.	Wall thickness	PU	Weight per pc.
162410	180 mm	1 pc.	1.30 kg	162460	180 mm	1 pc.	1.10 kg
162415	200 mm	1 pc.	1.40 kg	162465	200 mm	1 pc.	1.20 kg
162420	240 mm	1 pc.	1.50 kg	162470	240 mm	1 pc.	1.30 kg
162425	250 mm	1 pc.	1.60 kg	162475	250 mm	1 pc.	1.30 kg
162430	300 mm	1 pc.	1.70 kg	162480	300 mm	1 pc.	1.50 kg
162435	350 mm	1 pc.	1.90 kg	162485	350 mm	1 pc.	1.70 kg
162440	365 mm	1 pc.	2.00 kg	162490	365 mm	1 pc.	1.70 kg
162445	400 mm	1 pc.	2.10 kg	162495	400 mm	1 pc.	1.90 kg
162400	Key for opening the closure plug			 			

Other wall thicknesses are available on request

MASTER-RING gasket inserts are available on request. You will need to let us know the outer diameters of the cables and pipes to be led through.

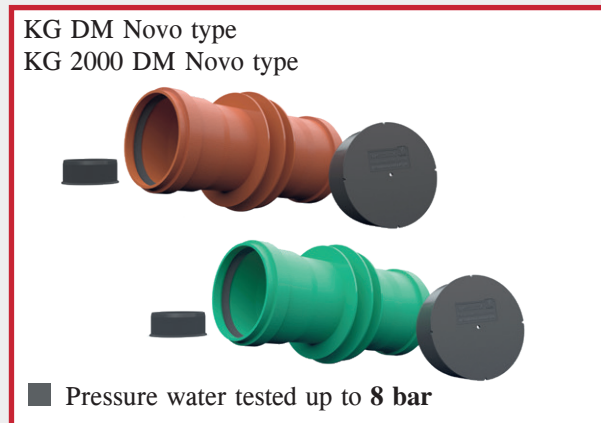
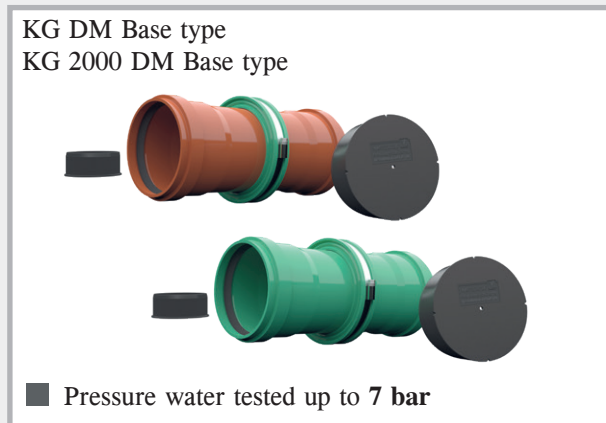
Sewage pipe bushing systems

Double socket type (DM)



Advantages of the Base and Novo double socket

- Delivered as solid wall version
- With lip seal
- Manufactured for corresponding wall thickness
- Radon-tight
- incl. 2 covers as installation aid
- Pre-installed water barrier



KG DM type product range

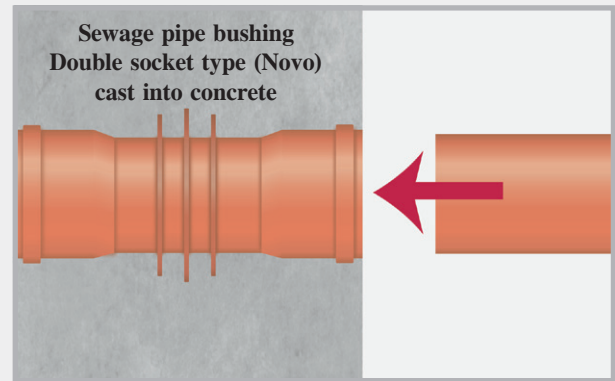
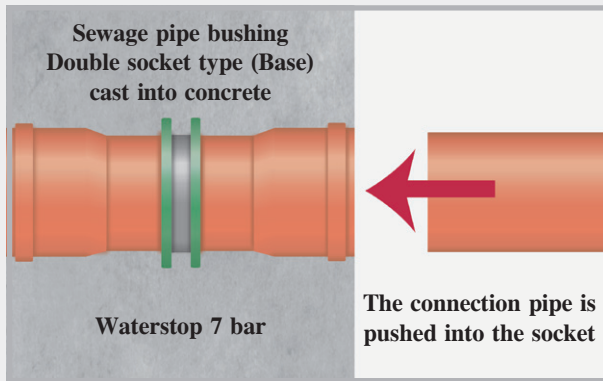
Sewage pipe Ø DN mm	Wall thicknesses						
	180 mm	200 mm	240 mm	250 mm	300 mm	365 mm	400 mm
	Base double socket		Novo double socket				
DN 110 Weight/pc.	080404 0.75 kg	080405 0.80 kg	080350 0.60 kg	080351 0.62 kg	080352 0.70 kg	080353 0.77 kg	080354 0.81 kg
DN 125 Weight/pc.	080419 1.00 kg	080420 1.00 kg	080355 0.77 kg	080356 0.82 kg	080357 0.91 kg	080358 0.98 kg	080359 1.04 kg
DN 160 Weight/pc.	not producible	080433 1.75 kg	080434 1.85 kg	080436 1.85 kg	080438 2.05 kg	080440 2.25 kg	080442 2.50 kg
DN 200 Weight/pc.	not producible	080443 2.80 kg	080444 3.00 kg	080445 3.00 kg	080446 3.35 kg	080448 3.60 kg	080450 3.70 kg

KG 2000 DM type product range

KG 2000-Ø DN mm	Wall thicknesses					
	200 mm	240 mm	250 mm	300 mm	365 mm	400 mm
	Base double socket	Novo double socket				
DN 110 Weight/pc.	080750 0.80 kg	080800 0.60 kg	080801 0.62 kg	080802 0.68 kg	080803 0.77 kg	080804 0.81 kg
DN 125 Weight/pc.	080762 1.10 kg	080805 0.77 kg	080806 0.82 kg	080807 0.91 kg	080808 0.98 kg	080809 1.04 kg
DN 160 Weight/pc.	080774 1.60 kg	080776 1.80 kg	080778 2.00 kg	080780 2.30 kg	080782 2.60 kg	080784 2.80 kg
DN 200 Weight/pc.	080786 2.80 kg	080788 3.00 kg	080790 3.20 kg	080792 3.40 kg	080794 3.70 kg	080796 3.85 kg

The Base double socket version is available for further wall thicknesses.

Function of KG type Base and Novo double socket

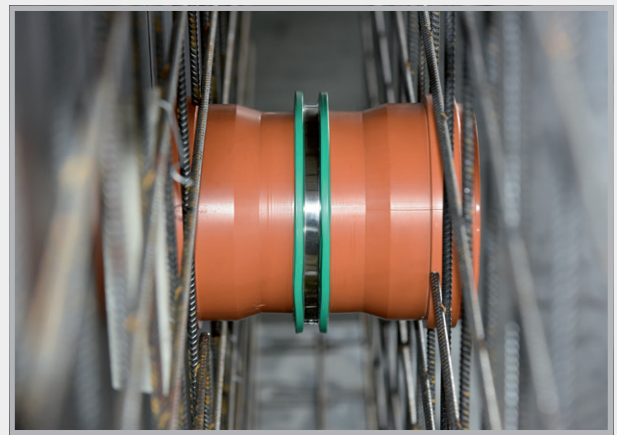


The double socket is cast into concrete. After concreting, the closure plugs are removed and the seals inserted. The next pipe can be connected.

KG type Base double socket on the construction site



Front view, pipe bushing installed



Side view in the formwork

Sewage pipe bushing systems

Flow direction (FR) type



The flow direction types are manufactured in one piece for the corresponding wall thickness. You can also manufacture any wall thickness yourself on the building site with a ground drain and socket ring. The FR type conveys the wastewater flow in one direction.

KG FR type product range

Sewage pipe Ø DN mm	Wall thicknesses						
	180 mm	200 mm	240 mm	250 mm	300 mm	365 mm	400 mm
DN 110 Weight/pc.	090710 0.75 kg	090713 0.80 kg	090716 0.90 kg	090719 0.90 kg	090722 1.00 kg	090725 1.10 kg	090728 1.20 kg
DN 125 Weight/pc.	090731 1.00 kg	090734 1.00 kg	090737 1.10 kg	090740 1.10 kg	090743 1.25 kg	090749 1.45 kg	090752 1.60 kg
DN 160 Weight/pc.	not producible	not producible	090758 1.85 kg	090761 1.85 kg	090764 2.05 kg	090770 2.25 kg	090773 2.50 kg
DN 200 Weight/pc.	not producible	not producible	090779 3.00 kg	090782 3.00 kg	090785 3.35 kg	090788 3.60 kg	090791 3.70 kg

Other wall thicknesses available

KG 2000 FR type product range

KG 2000-Ø DN mm	Wall thicknesses					
	200 mm	240 mm	250 mm	300 mm	365 mm	400 mm
DN 110 Weight/pc.	080820 0.80 kg	080825 0.85 kg	080830 0.90 kg	080835 1.10 kg	080845 1.30 kg	080850 1.40 kg
DN 125 Weight/pc.	080855 1.10 kg	080860 1.20 kg	080865 1.20 kg	080870 1.30 kg	080880 1.50 kg	080885 1.65 kg
DN 160 Weight/pc.	not producible	080890 1.80 kg	080895 2.00 kg	080905 2.30 kg	080915 2.60 kg	080920 2.80 kg
DN 200 Weight/pc.	not producible	080923 3.10 kg	080925 3.20 kg	080933 3.20 kg	080935 3.70 kg	080945 3.85 kg

Other wall thicknesses available

Sewage pipe bushing systems

Flow direction Universal (FRU) type

The product for stock keeping

KG FRU type product range

Sewage pipe Ø DN mm	Art. no.	Marked cutting lengths / mm (400 mm = standard version)								PU	Weight per pc.
DN 110	090800	180	200	240	250	300	350	365	400	1 pc.	1.20 kg
DN 125	090801	180	200	240	250	300	350	365	400	1 pc.	1.60 kg
DN 160	090802	*	*	240	250	300	350	365	400	1 pc.	2.50 kg
DN 200	090803	*	*	240	250	300	350	365	400	1 pc.	3.70 kg

* = cannot be produced

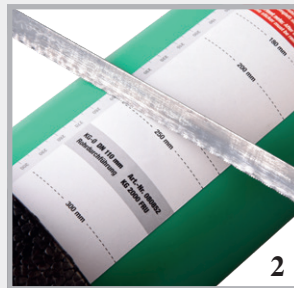
KG 2000 FRU type product range

KG 2000-Ø DN mm	Art. no.	Marked cutting lengths / mm (400 mm = standard version)								PU	Weight per pc.
DN 110	080360	180	200	240	250	300	350	365	400	1 pc.	1.40 kg
DN 125	080362	180	200	240	250	300	350	365	400	1 pc.	1.65 kg
DN 160	080364	*	*	240	250	300	350	365	400	1 pc.	2.80 kg
DN 200	080365	*	*	240	250	300	350	365	400	1 pc.	3.85 kg

* = cannot be produced



The flow direction universal pipe bushing is pre-produced for the wall thickness 400 mm.



A length scale is affixed to the pipe bushing so it can be cut to the required wall thickness on site.



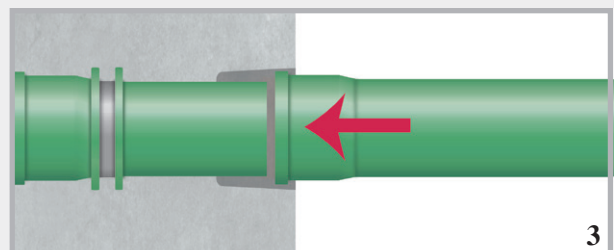
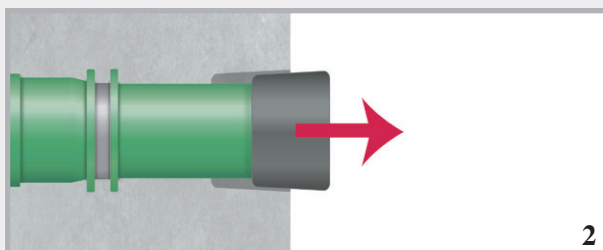
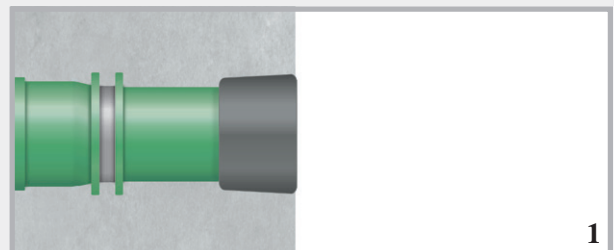
The adhesive label containing the length scale must be removed after cutting and the cut edge bevelled.



The pipe bushing is ready to install after pushing on the socket ring.

FR + FRU type function

1. KG 2000 flow direction type pipe bushing, concreted into the wall
2. The socket ring is removed before the next pipe is connected.
3. The next pipe is connected. The flow direction of the water is retained.



Sewage pipe bushing systems

Foil flange (FFL) type

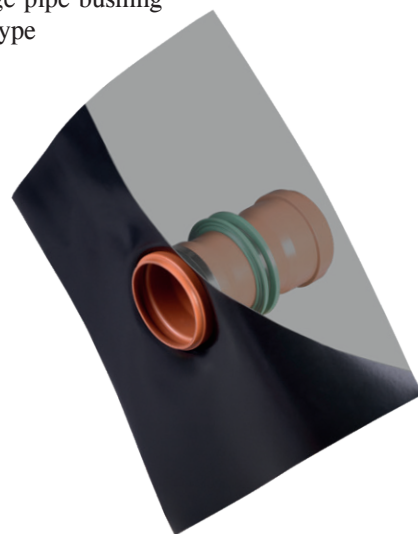
In addition to the pressure water and radon-resistant seal in the concrete provided by the RONDO

Base, the foil flange enables the pipe bushing to be integrated into an outer sealing plane.

Foil flange made of 1.5 mm PVC foil, size: 60 x 60 cm, weldable with hot air gun, bondable with solvent welding agent, resistant to oil and bitumen



Sewage pipe bushing
FFL type



KG FFL type product range

Sewage pipe Ø DN mm	Wall thicknesses						
	180 mm	200 mm	240 mm	250 mm	300 mm	365 mm	400 mm
DN 110	080810	080812	080814	080816	080818	080822	080824
Weight/pc.	1.45 kg	1.50 kg	1.60 kg	1.60 kg	1.70 kg	1.80 kg	1.90 kg
DN 125	080826	080832	080834	080836	080838	080840	080842
Weight/pc.	1.70 kg	1.70 kg	1.80 kg	1.80 kg	1.95 kg	2.15 kg	2.35 kg
DN 160	not producible	080844	080846	080848	080852	080854	080856
Weight/pc.		2.45 kg	2.55 kg	2.55 kg	2.75 kg	2.95 kg	3.20 kg
DN 200	not producible	080858	080862	080864	080866	080868	080872
Weight/pc.		3.50 kg	3.70 kg	3.70 kg	4.05 kg	4.30 kg	4.40 kg

Other wall thicknesses available

KG 2000 FFL type product range

KG 2000-Ø DN mm	Wall thicknesses					
	200 mm	240 mm	250 mm	300 mm	365 mm	400 mm
DN 110	080074	080075	080076	080077	080078	080079
Weight/pc.	1.50 kg	1.55 kg	1.60 kg	1.80 kg	2.00 kg	2.10 kg
DN 125	080080	080081	080082	080083	080084	080085
Weight/pc.	1.80 kg	1.90 kg	1.90 kg	2.00 kg	2.20 kg	2.30 kg
DN 160	080086	080087	080088	080089	080090	080091
Weight/pc.	2.30 kg	2.50 kg	2.70 kg	3.00 kg	3.30 kg	3.50 kg
DN 200	080092	080093	080094	080095	080096	080097
Weight/pc.	3.50 kg	3.70 kg	3.90 kg	4.10 kg	4.40 kg	4.55 kg

Other wall thicknesses available

Sewage pipe bushing systems

Double socket double wall (DM DW) type



Sewage pipe bushing
DM DW type



KG 2000 pipe bushing
DM DW type



The double-socket double-wall type sewage pipe bushing system is specially designed for use in double-wall elements. The waterstops in the edge zone prevent water permeation of the pipe bushing directly in the outer shells. The centrally mounted waterstop provides an additional seal in the core concrete.

KG DM DW type product range

Sewage pipe Ø DN mm	Wall thicknesses						
	180 mm	200 mm	240 mm	250 mm	300 mm	365 mm	400 mm
DN 110 Weight/pc.	080480 1.07 kg	080482 1.12 kg	080484 1.22 kg	080486 1.22 kg	080488 1.32 kg	080490 1.42 kg	080492 1.52 kg
DN 125 Weight/pc.	080494 1.34 kg	080496 1.34 kg	080498 1.44 kg	080502 1.44 kg	080504 1.59 kg	080506 1.79 kg	080508 1.99 kg
DN 160 Weight/pc.	not producible	080512 2.19 kg	080514 2.29 kg	080516 2.29 kg	080518 2.49 kg	080522 2.69 kg	080524 2.94 kg
DN 200 Weight/pc.	not producible	080526 3.29 kg	080528 3.49 kg	080532 3.49 kg	080534 3.84 kg	080536 4.09 kg	080538 4.19 kg

Other wall thicknesses available

KG 2000 DM DW type product range

KG 2000-Ø DN mm	Wall thicknesses					
	200 mm	240 mm	250 mm	300 mm	365 mm	400 mm
DN 110 Weight/pc.	080098 1.12 kg	080099 1.17 kg	080100 1.22 kg	080101 1.42 kg	080102 1.62 kg	080103 1.72 kg
DN 125 Weight/pc.	080104 1.42 kg	080105 1.54 kg	080106 1.54 kg	080107 1.64 kg	080108 1.84 kg	080109 1.94 kg
DN 160 Weight/pc.	080110 1.94 kg	080111 2.14 kg	080112 2.44 kg	080113 2.74 kg	080114 3.04 kg	080115 3.24 kg
DN 200 Weight/pc.	080116 3.24 kg	080117 3.44 kg	080118 3.69 kg	080119 3.89 kg	080120 4.19 kg	080121 4.34 kg

Other wall thicknesses available

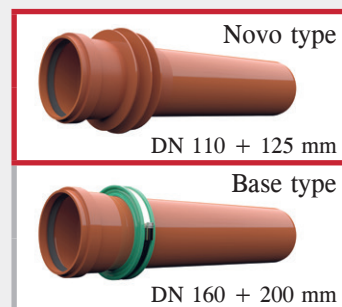
Ground drains



Sewage ground drains – solid wall pipes

Sewage pipe, 0.5 m long, with waterstop and socket on one end

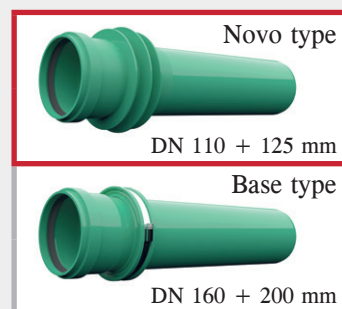
Art. no.	Type	Sewage pipe Ø DN mm	Length	Weight per pc.
080366	DL 110/500	110	500 mm	0.76 kg
080368	DL 125/500	125	500 mm	0.93 kg
080470	DL 160/500	160	500 mm	2.45 kg
080475	DL 200/500	200	500 mm	3.85 kg



KG 2000 sewage ground drains – solid wall pipes

Sewage pipe, 0.5 m long, with waterstop and socket on one end

Art. no.	Type	Sewage pipe Ø DN mm	Length	Weight per pc.
080827	DL 110/500	110	500 mm	0.76 kg
080828	DL 125/500	125	500 mm	0.93 kg
080986	DL2000 160/500	160	500 mm	2.40 kg
080989	DL2000 200/500	200	500 mm	3.80 kg



Sewage ground drains with foil flange

Foil flange made of PVC foil 1.5 mm, size: 50 x 50 cm, weldable with hot air gun, bondable with solvent welding agent, resistant to oil and bitumen

KG sewage ground drains with foil flange – solid wall pipes

Sewage pipe, 0.5 m long, with waterstop and socket on one end

Art. no.	Type	Sewage pipe Ø DN mm	Length	Weight per pc.
080451	DLF 110/500	110	500 mm	1.70 kg
080452	DLF 125/500	125	500 mm	2.15 kg
080454	DLF 160/500	160	500 mm	3.00 kg
080456	DLF 200/500	200	500 mm	4.40 kg



KG 2000 sewage ground drains with foil flange

KG 2000 pipe, 0.5 m long, with waterstop and socket on one end

Art. no.	Type	KG 2000-Ø DN mm	Length	Weight per pc.
080992	DLF2000 110/500	110	500 mm	1.70 kg
080994	DLF2000 125/500	125	500 mm	2.00 kg
080996	DLF2000 160/500	160	500 mm	2.90 kg
080998	DLF2000 200/500	200	500 mm	4.20 kg



Sewage pipe bushing systems

Universal type



The universal pipe bushing is supplied with an overall length of 40 cm. The pipe bushing can be shortened on-site to match the desired wall thickness.

Always supplied with plugs at both ends.

KG Universal type product range

incl. plug (installation aid) and seal

Art. no.	Type	Sewage pipe Ø DN mm	Element length	for wall thickness from to	PU	Weight per pc.
160100	KGU 110	110	40 cm	20-40 cm	1 pc.	1.95 kg
160110	KGU 125	125	40 cm	20-40 cm	1 pc.	2.00 kg
160120	KGU 160	160	40 cm	24-40 cm	1 pc.	3.10 kg
160130	KGU 200	200	40 cm	24-40 cm	1 pc.	4.25 kg

KG 2000 Universal type product range

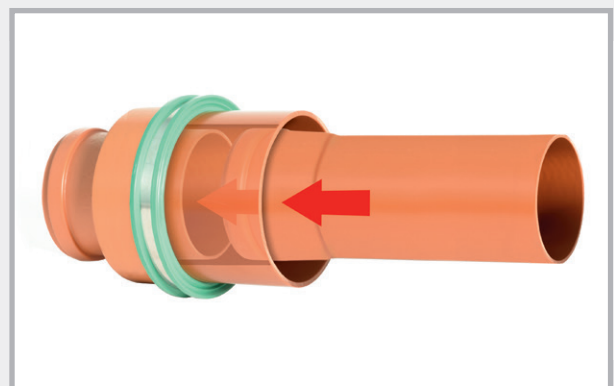
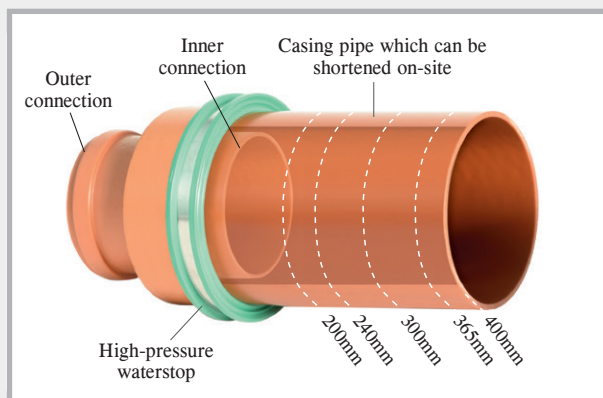
incl. plug (installation aid) and seal

Art. no.	Type	KG 2000-Ø DN mm	Element length	for wall thickness from to	PU	Weight per pc.
161100	KG2000 U110	110	40 cm	20-40 cm	1 pc.	1.70 kg
161110	KG2000 U125	125	40 cm	20-40 cm	1 pc.	1.80 kg
161120	KG2000 U160	160	40 cm	24-40 cm	1 pc.	2.80 kg

We will shorten the Universal sewage pipe bushing for you to suit the required wall thickness.

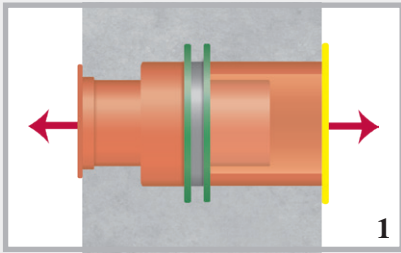
Function

The illustration shows how the connection works. As the socket is pushed onto the spigot end, the flow of water is not interrupted.

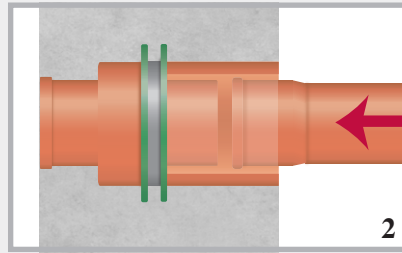


The casing pipe can be shortened on-site to match the desired wall thickness.

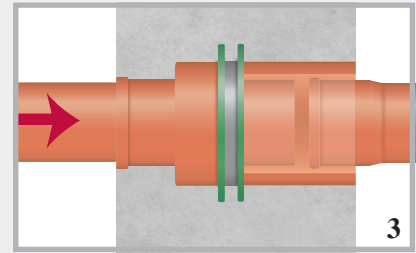
Universal installation type



The universal pipe bushing is manufactured to match the corresponding wall thickness. It is sealed with plugs on the left and right.



The plugs are removed following placement of the concrete.



The connection pipes can be continued to the left and right. The flow direction of the water is retained.

Accessories for lining pipes and pipe bushings

Socket ring for sewage pipe bushings

Flow direction type

Art. no.	Type	PU	Weight per pc.
080476	MFR 110	1 pc.	0.02 kg
080477	MFR 125	1 pc.	0.03 kg
080478	MFR 160	1 pc.	0.04 kg
080479	MFR 200	1 pc.	0.07 kg

Socket ring



Socket ring on pipe bushing



Closure plug + installation aid for lining pipes

DN	Art. no.	PU	Weight per pc.
50	090403	1 pc.	0.02 kg
80	090401	1 pc.	0.02 kg
100	090400	1 pc.	0.02 kg
125	090402	1 pc.	0.04 kg
150	090404	1 pc.	0.04 kg
200	090406	1 pc.	0.10 kg
250	090408	1 pc.	0.16 kg
300	090410	1 pc.	0.24 kg
350	090412	1 pc.	0.39 kg
400	090414	1 pc.	0.45 kg

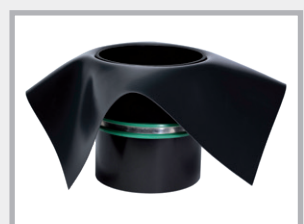


Reusable



Foil flange for lining pipes incl. mounting strap

DN	Art. no.	Flange dimensions	PU	Weight per pc.
50	090388	40 x 40 cm	1 pc.	0.19 kg
80	090389	40 x 40 cm	1 pc.	0.20 kg
100	090390	50 x 50 cm	1 pc.	0.43 kg
125	090391	50 x 50 cm	1 pc.	0.45 kg
150	090392	50 x 50 cm	1 pc.	0.47 kg
200	090393	60 x 60 cm	1 pc.	0.70 kg
250	090394	60 x 60 cm	1 pc.	0.70 kg
300	090395	70 x 70 cm	1 pc.	1.00 kg



Foil flange made of 1.5 mm PVC foil, resistant to oil and bitumen, weldable with hot air gun, bondable with solvent welding agent

MASTER-RING

Stainless steel V2A gasket inserts

Gasket inserts for lining pipes and core drill holes

- One seal against pressurised and non-pressurised water
- Pressure-tight up to 30 m water column, in fixed and secure position up to 50 m
- Rubber thickness 40 mm
- Temperature range -30°C to +120°C
- Steel parts and screws made of V2A stainless steel
- Satisfy the requirements of the FHRK testing principles GE 101



Installation: Once the gasket insert has been inserted and the medium pipe has been led through, the screws are tightened crosswise. Give each screw one turn and repeat this procedure several times so the rubber is pressed out uniformly. Maximum torque M6 = 5 Nm, M8 = 10 Nm, M10 = 15 Nm, M12 = 20 Nm. Retighten the nuts after 2-3 hours.

Core drill hole mm Lining pipe FASO/ WELLO/DURO Plus	Art. no.	Medium pipe in mm		PU	Weight per pc.
		from	to		
50	120080	6	12	1	0.38 kg
80	120100	20	28	1	0.41 kg
80	120105	32	40	1	0.42 kg
80	120095	48	50	1	0.41 kg
100	120107	15	22	1	0.59 kg
100	120110	20	28	1	0.59 kg
100	120112	25	32	1	0.59 kg
100	120115	32	40	1	0.64 kg
100	120120	36	44	1	0.64 kg
100	120125	46	56	1	0.54 kg
100	120130	55	65	1	0.52 kg
125	120140	45	54	1	1.05 kg
125	120145	55	64	1	0.84 kg
125	120150	70	78	1	0.75 kg
150	120152	46	54	1	1.37 kg
150	120153	56	66	1	1.32 kg
150	120155	69	78	1	1.22 kg
150	120160	79	91	1	1.18 kg
150	120165	85	94	1	1.07 kg
150	120170	98	110	1	0.96 kg
200	120172	88	103	1	2.00 kg
200	120175	108	115	1	1.96 kg
200	120180	116	126	1	1.88 kg
200	120185	132	141	1	1.63 kg
200	120190	135	144	1	1.46 kg
200	120192	150	160	1	1.40 kg
250	120195	135	144	1	2.90 kg
250	120197	140	149	1	2.90 kg
250	120200	150	159	1	2.60 kg
250	120205	157	162	1	2.60 kg
250	120210	174	181	1	2.55 kg
250	120215	178	187	1	2.15 kg
250	120216	197	202	1	2.10 kg
250	120218	204	210	1	2.05 kg
300	120225	193	204	1	3.50 kg
300	120230	218	226	1	3.15 kg
350	120235	224	233	1	5.25 kg
350	120240	249	258	1	4.85 kg
350	120242	270	282	1	4.55 kg
400	120245	270	280	1	5.70 kg
400	120250	279	288	1	5.65 kg
400	120255	304	313	1	5.10 kg
400	120260	314	323	1	4.60 kg
400	120265	320	330	1	4.20 kg

Note:

Additional supply options:

Split version available for additional charge.

Steel parts + screws in V4A stainless steel; rubber made of NBR or compliant with potable water quality standards

MASTER-RING Multi

Gasket inserts with “onion ring” technology

A large number of installation options with only 4 sizes

YouTube



Product description of MASTER-RING Multi



Pressure-resistant: 30 metre water column = 3 bar

Pressure plate material: V2A

Screws and nuts: V2A


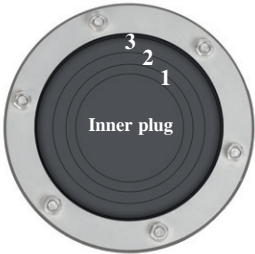
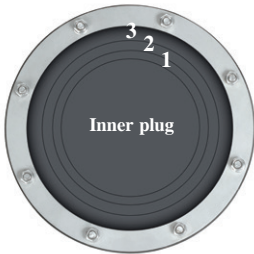
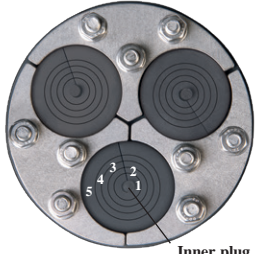
Design: Closed ring

Rubber material: EPDM

Width of rubber: 40 mm

Temperature range: -30°C to +120°C

Resistances: Excellent resistance to ageing, weathering and ozone

				
	MASTER-RING Multi 100 Art. no. 120135 Medium pipe in mm from to	MASTER-RING Multi 150 Art. no. 120171 Medium pipe	MASTER-RING Multi 200 Art. no. 120193 Medium pipe	MASTER-RING Multiple Multi 100 Art. no. 120270 Split version
After removing the inner plug	18-20 mm	63 mm	110 mm	4 mm
1st ring	21-25 mm	76 mm	125 mm	11 mm
2nd ring	26-30 mm	90 mm	140 mm	15 mm
3rd ring	31-35 mm	110 mm	160 mm	20 mm
4th ring	36-40 mm			25 mm
5th ring	41-45 mm			32 mm (without break-off rings)
6th ring	46-50 mm			
7th ring	51-55 mm			
8th ring	56-60 mm			
9th ring	61-65 mm			
Weight/pc.	0.64 kg	1.35 kg	2.20 kg	0.90 kg

Protection of the core drill hole with epoxy resin

- PROTECT EP resin ensures lasting preservation of the core drill hole
- Application on dry substrate



Installation of MASTER-RING Multi

Once you have determined the outer diameter of the pipe to be waterproofed, prepare the MASTER-RING Multi for installation.

Example for DN 100 core drill hole and medium pipe outer diameter 18 mm



Only remove the inner plug

Example for DN 100 core drill hole and medium pipe outer diameter 23 mm



After removing the inner plug, release the first ring ...

Example: Multi 100



... and push it through the gasket insert.



Pushed-through 1st ring



Simply cut off the pushed-through ring using a cutter



Multi 100 ready for installation

Example for DN 200 core drill hole and medium pipe outer diameter 110 mm



Only remove the inner plug

Example for DN 200 core drill hole and medium pipe outer diameter 125 mm



Release the first ring and push it through the gasket

Example: Multi 200



Cut off the pushed-through ring using a cutter – the gasket is now ready for installation.

Example for DN 100 core drill hole and medium pipe outer diameter 15 mm



Open the split gasket insert and take out the required segmented stopper.



Pull out the ring segment you want to remove and sever it with a cutter.

Example Multiple Multi



After cutting the stopper to the required size, reinsert it and the gasket insert can be installed.

MASTER-RING Multiple

V2A stainless steel multiple wall duct gasket inserts for cables and pipes

- Pressure-tight up to 10 m water column
- Rubber thickness 40 mm
- Steel parts and screws made of V2A stainless steel



Split version



Mounted

Core drill hole Lining pipe FASO/ WELLO/DURO Plus	Art. no.	Outer diameter Medium pipe in mm	Weight per pc.
50	120515	4 to 20	0.39 kg
80	120410	4 to 33 or 40 or 42	0.43 kg
100	120415	4 to 33 or 40 or 42 or 50	0.62 kg
125	120420	4 to 33 or 40 or 42 or 50	0.93 kg
150	120425	4 to 33 or 40 or 42 or 50	1.31 kg
	120495	Additional borehole	

As a basic rule, the technical feasibility of the combination of number and diameter of the media in relation to the minimum diameter of the core drill hole or lining pipe must be checked. Please contact our sales office for assistance.

Stainless steel V2A blind plugs

for core drill hole and lining pipe

- Pressure-tight: 80-200 mm = 30 m water column
250-300 mm = 10 m water column
- Rubber thickness 40 mm
- Steel parts and screws made of V2A stainless steel



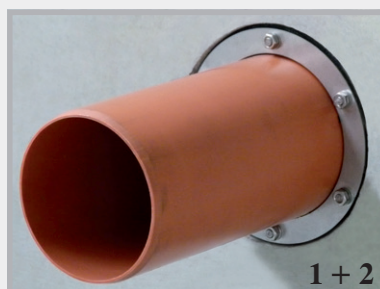
DN	Art. no.	PU	Weight/kg
80	120520	1 pc.	0.49 kg
100	120525	1 pc.	0.75 kg
125	120530	1 pc.	1.25 kg
150	120535	1 pc.	2.10 kg
200	120540	1 pc.	3.40 kg
250	120545	1 pc.	6.10 kg
300	120550	1 pc.	8.80 kg

Blind plugs up to DN 1500 mm available on request

Tightening the MASTER-RING Multi

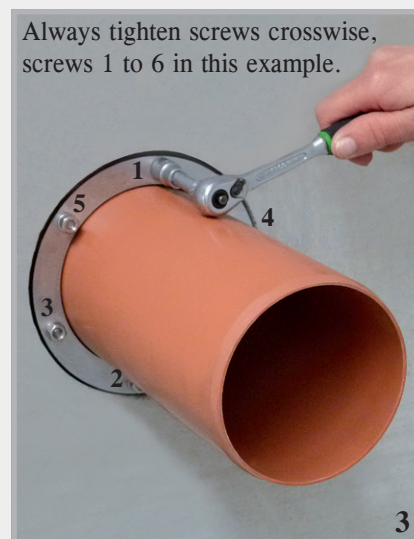
The screws of all 3 types should be tightened to a torque of 5 Nm.

1. Insert the gasket insert into the lining pipe or the core drill hole.
2. Push the medium pipe through



3. Tighten the screws crosswise through one turn. Repeat this process until all screws are tightened to 5 Nm. Retighten the screws after 24 hours.

Always tighten screws crosswise, screws 1 to 6 in this example.



FLEX 2000

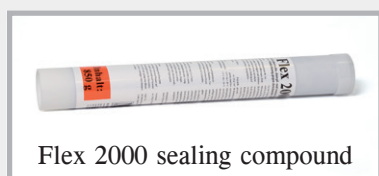


Plastic, vapour and waterproof sealing compound for waterproofing of pipe and cable ducts below ground level. Also suitable for leakage sealing in case of inflowing water.

**Annular gap sealing (tested by MFPA Leipzig)
up to 7.5 m water column**



Art. no.	Description	PU	Secondary packaging	Weight
120610	Flex 2000 sealing compound cartridge 850 g	1 cartridge	Carton of 20 cartridges	0.94 kg
120620	Cartridge applicator with flexible nozzle	1 pc.		1.07 kg
120630	Flexible nozzle	1 pc.		0.06 kg

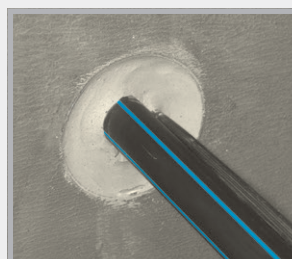
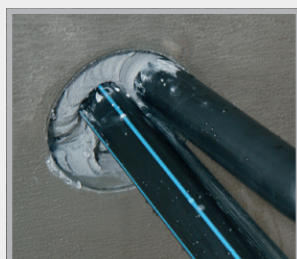


Technical data

Consistency	Paste-like, non-sagging
Heat resistance	+50°C
Processing temperature	+5°C to +35°C
Usage	approx. 1.6 kg per litre void
Storage	2 years at 20°C

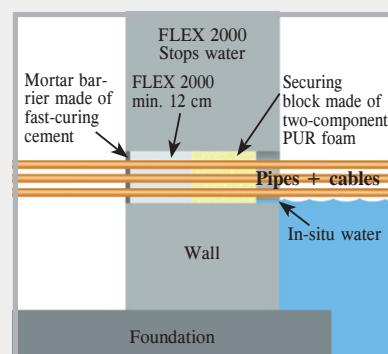
Substrate

The substrate may be dry, damp or wet. The substrate must be free from grease, tar, oil and loose particles. Suitable substrates are: concrete, brick, mortar, plaster and all other mineral construction materials as well as ceramics, PVC, polyethylene and polypropylene.



Application

Prior to application, Flex 2000 is heated to approx. 30-40°C by placing it in warm water for at least 30 minutes to ensure optimum consistency and workability. Clean the inside of the duct using a suitable brush to remove dust, sand, and any loose particles. Before applying Flex 2000, a securing block of a two-component PUR foam is applied at a depth of approx. 10 cm. The Flex 2000 cartridge is then placed in the cartridge applicator and the material is pressed through the flexible nozzle into the duct from back to front so that the resulting layer is at least 12 cm thick. After sealing cable ducts, jiggle the cable slightly and press Flex 2000 into any voids that form. Always ensure that the cable is free of tension and strain after sealing. Finally, the sealing compound set back approx. 1 cm is pressed in well and smoothed with a metal filler knife. As an additional safeguard, the opening of the duct is closed with fast-curing cement. If a new cable is to be installed later on, the mortar barrier is removed and the cable is pushed through the sealing compound. The duct is subsequently sealed using Flex 2000.



MASTER-SEAL

Modular seal



- Preassembled
- Fast and easy installation
- Tested up to 30 m water column
- Can be retrofitted (all gasket inserts are also separable)

Area of installation Core drill hole mm Lining pipe FASO/ WELLO/DURO Plus	Medium pipe outer Ø mm		Type	Weight	Stainless steel	Galvanised
	from	to			Art. no.	Art. no.
50	11	19	4 x 275	0.08 kg	110250	110600
50	20	25	4 x 200	0.08 kg	110255	110605
80	20	33	4 x 350	0.32 kg	110260	110610
80	34	44	5 x 300	0.30 kg	110265	110615
80	45	49	6 x 250	0.14 kg	110267	110617
80	50	55	7 x 200	0.14 kg	110268	110618
100	27	38	4 x 375	0.52 kg	110270	110620
100	39	50	6 x 350	0.48 kg	110275	110625
100	56	64	6 x 300	0.36 kg	110280	110630
100	65	69	8 x 250	0.16 kg	110281	110631
100	70	75	9 x 200	0.18 kg	110282	110632
125	41	44	4 x 475	1.04 kg	110283	110633
125	45	52	4 x 415	0.96 kg	110284	110634
125	53	63	5 x 375	0.65 kg	110285	110635
125	64	78	7 x 350	0.56 kg	110290	110640
125	79	90	8 x 300	0.48 kg	110295	110645
125	90	94	11 x 250	0.22 kg	110296	110646
125	96	100	11 x 200	0.22 kg	110297	110647
150	58	69	5 x 475	1.30 kg	110298	110648
150	63	76	5 x 415	1.20 kg	110300	110650
150	75	82	6 x 375	0.75 kg	110305	110655
150	88	103	9 x 350	0.68 kg	110310	110660
150	106	115	10 x 300	0.60 kg	110315	110665
150	113	118	14 x 250	0.28 kg	110316	110666
150	120	124	14 x 200	0.28 kg	110317	110667
200	88	107	6 x 575	2.50 kg	110320	110670
200	108	118	7 x 475	1.82 kg	110325	110675
200	115	122	7 x 415	1.68 kg	110330	110680
200	125	138	9 x 375	1.17 kg	110335	110685
200	140	153	13 x 350	0.98 kg	110340	110690
200	156	165	14 x 300	0.84 kg	110345	110695
200	164	168	19 x 250	0.38 kg	110346	110696
200	171	174	19 x 200	0.38 kg	110347	110697



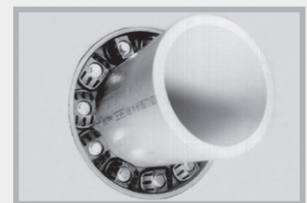
Place MASTER-SEAL around the medium pipe and seal



Push MASTER-SEAL into the annular gap



Tighten each screw one by one in a circular direction by turning once until all modules are evenly tightened.



MASTER-SEAL installation complete

MASTER-SEAL

Modular seal

YouTube



Area of installation Core drill hole mm Lining pipe FASO/ WELLO/DURO Plus	Medium pipe outer Ø mm		Type	Weight	Stainless steel	Galvanised
	from	to			Art. no.	Art. no.
250	114	130	6 x 500	3.72 kg	110350	110700
250	137	158	8 x 575	3.32 kg	110355	110705
250	159	166	9 x 475	2.34 kg	110360	110710
250	166	178	7 x 400	2.17 kg	110365	110715
250	178	185	12 x 375	1.50 kg	110370	110720
250	182	189	7 x 425	1.75 kg	110371	110721
250	192	200	17 x 350	1.28 kg	110372	110722
250	194	202	9 x 325	1.22 kg	110373	110723
250	208	213	18 x 300	1.08 kg	110374	110724
300	188	204	10 x 575	4.18 kg	110375	110725
300	206	217	12 x 475	3.12 kg	110380	110730
300	215	226	12 x 415	2.88 kg	110385	110735
300	228	236	15 x 375	1.88 kg	110386	110736
300	232	242	9 x 425	2.25 kg	110387	110737
300	244	253	11 x 325	1.49 kg	110388	110738
300	258	263	22 x 300	1.32 kg	110389	110739
350	219	231	9 x 500	5.58 kg	110390	110740
350	239	253	12 x 575	4.98 kg	110395	110745
350	265	275	14 x 415	3.36 kg	110400	110750
350	276	286	18 x 375	2.25 kg	110405	110755
350	314	317	35 x 250	0.70 kg	110408	110758
400	239	256	10 x 650	9.50 kg	110410	110760
400	265	274	11 x 500	6.82 kg	110415	110765
400	314	328	12 x 400	3.66 kg	110420	110770
400	343	350	15 x 325	2.03 kg	110425	110775
450	358	370	19 x 475	4.94 kg	110430	110780
450	366	379	14 x 400	4.27 kg	110435	110785
450	393	405	17 x 325	2.30 kg	110440	110790
500	311	326	8 x 600	14.56 kg	110443	110793
500	340	358	13 x 650	12.38 kg	110445	110795
500	390	407	18 x 575	7.47 kg	110450	110800
500	409	419	21 x 475	5.46 kg	110455	110805
550	390	408	14 x 650	13.30 kg	110460	110810
550	415	435	15 x 500	9.30 kg	110465	110815
550	440	457	20 x 575	8.30 kg	110470	110820
550	457	470	23 x 475	5.98 kg	110475	110825
600	410	440	10 x 600	18.20 kg	110480	110830
600	440	458	16 x 650	15.20 kg	110485	110835
600	490	505	22 x 575	9.13 kg	110490	110840
600	515	528	19 x 400	5.80 kg	110495	110845

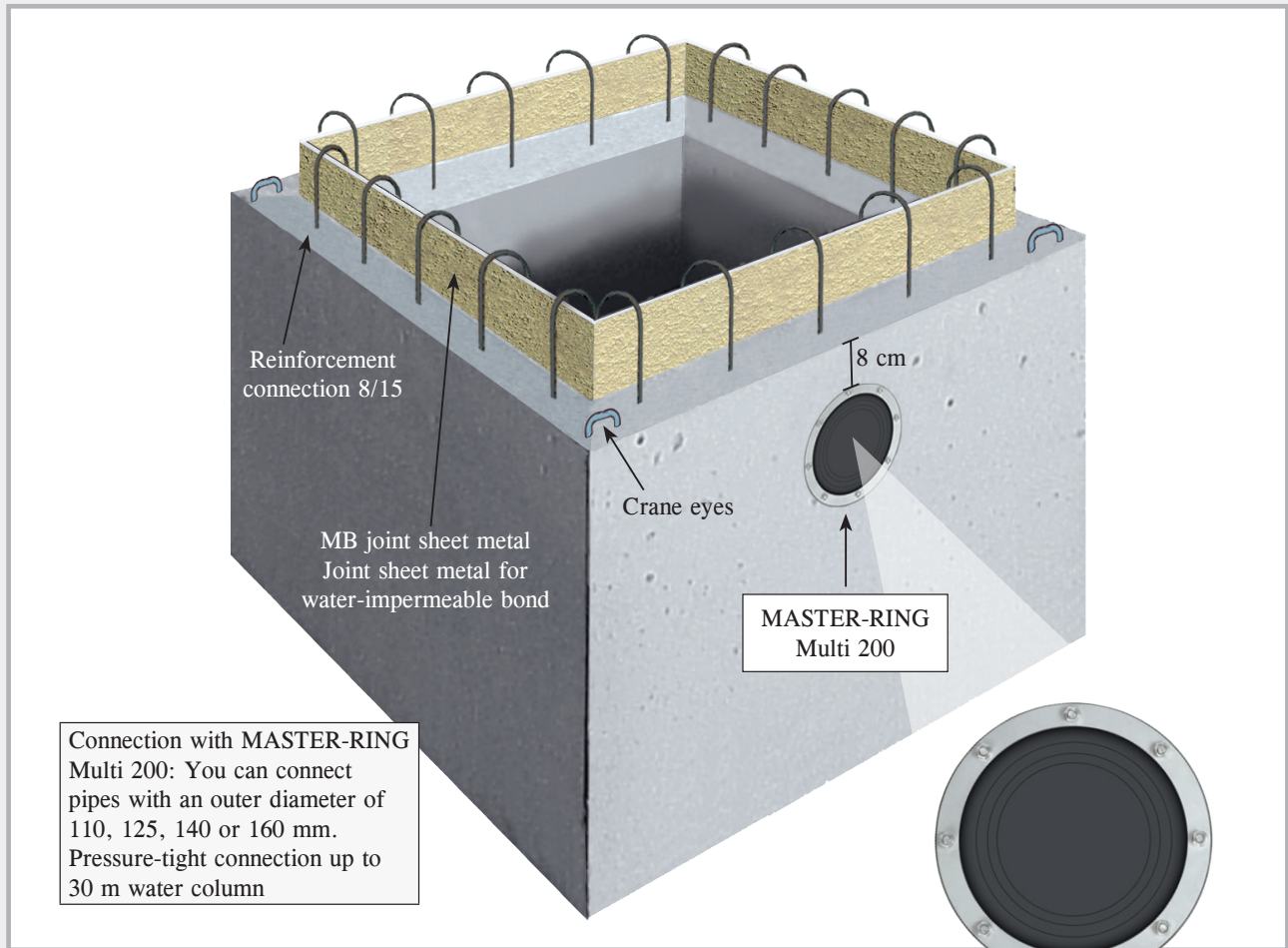
Additional sizes available immediately ex stock

Installation: After insertion of the modular seal and lead-through of the medium pipe, the screws are tightened one by one in a clockwise direction. Give each screw one turn and repeat this procedure several times so the rubber is pressed out uniformly.

Maximum torques	TYPE	200/250/275	3 Nm	500/525	60 Nm	650	85 Nm
		300/325/350/375	15 Nm	575	50 Nm	600	130 Nm
		400/415/425/475	35 Nm				

PILO

Pump sump Multi “Standard”



Pressure-tight and flexible with the MASTER RING Multi 200

The PILO pump sump is a precast concrete part made of water-impermeable concrete C 35/45.

- reduces the construction time
- eliminates difficult shuttering
- easy installation
- manufactured from water-impermeable concrete
- watertight connection thanks to use of MPA-tested joint sheet metal
- Connection reinforcement
- Crane eyes

Sizes of PILO pump sump Multi “Standard”

Art. no.	Inner dimensions W x L x H	Wall thickness	Weight	Outer dimensions W x L x H	PU
090450	60 x 60 x 60 cm	12 cm	approx. 730 kg	84 x 84 x 72 cm	1 pc.
090452	80 x 80 x 80 cm	12 cm	approx. 1320 kg	104 x 104 x 92 cm	1 pc.
090454	100 x 100 x 80 cm	12 cm	approx. 1640 kg	124 x 124 x 92 cm	1 pc.
090455	100 x 100 x 100 cm	12 cm	approx. 1890 kg	124 x 124 x 112 cm	1 pc.
090456	120 x 120 x 80 cm	12 cm	approx. 2050 kg	144 x 144 x 92 cm	1 pc.

Due to the production process, the pump sumps are slightly tapered. The internal width-wise and length-wise dimensions reduce towards the base of the duct.

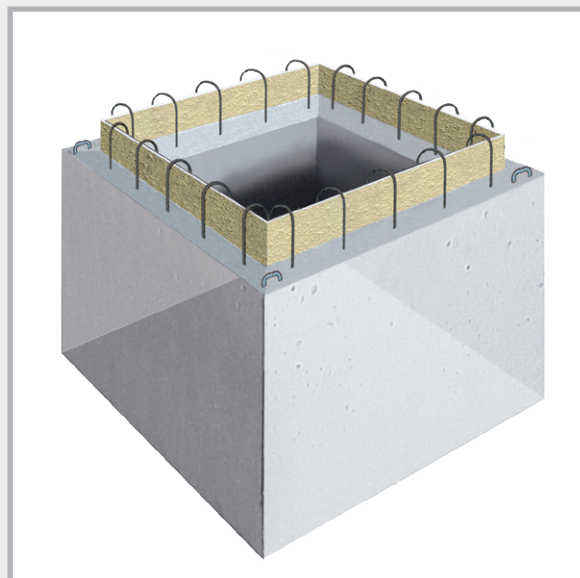
PILO

Pump sump

“Spezial”

- ➔ Water-impermeable concrete C35/45
- ➔ with joint sheet metal MB
- ➔ Connection reinforcement

The PILO pump sump “Spezial” has no borehole. These are made at the last minute according to your specifications.

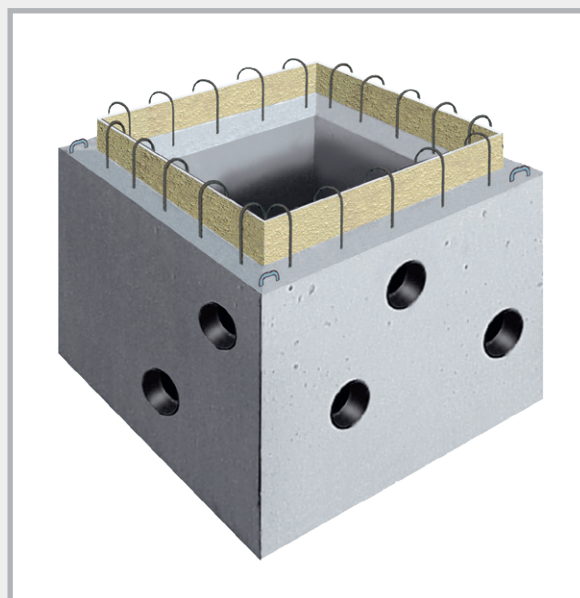


Sizes of PILO pump sump without borehole

Art. no.	Inner dimensions W x L x H	Wall thickness	Weight	Outer dimensions W x L x H	PU
090443	60 x 60 x 60 cm	12 cm	approx. 730 kg	84 x 84 x 72 cm	1 pc.
090445	80 x 80 x 80 cm	12 cm	approx. 1320 kg	104 x 104 x 92 cm	1 pc.
090447	100 x 100 x 80 cm	12 cm	approx. 1640 kg	124 x 124 x 92 cm	1 pc.
090448	100 x 100 x 100 cm	12 cm	approx. 1890 kg	124 x 124 x 112 cm	1 pc.
090449	120 x 120 x 80 cm	12 cm	approx. 2050 kg	144 x 144 x 92 cm	1 pc.

Boreholes

Art. no.	
090440	Core drill hole DN 200, flexible connection 110, 125, 140 and 160 mm, incl. MASTER-RING Multi DN 200
090430	Connection for sewage pipe DN 110 incl. connection seal
090432	Additional connection for sewage pipe DN 125 incl. connection seal
090433	Additional connection for sewage pipe DN 160 incl. connection seal
090436	Additional connection for sewage pipe DN 200 incl. connection seal



The connection bores are made according to your specifications.
The options are listed in the table.

Shaft cover for pump sump

Walkable covers, galvanised

Pump sump L x W x H Dimensions	60 x 60 x 60 cm	80 x 80 x 80 cm	100 x 100 x 80 cm	120 x 120 x 80 cm
clear dimension	65.5 x 65.5 cm	85.5 x 85.5 cm	105.5 x 105.5 cm	122 x 122 cm
cover size	70 x 70 cm	90 x 90 cm	110 x 110 cm	126.5 x 126.5 cm
frame outer dimension	71 x 71 cm	91 x 91 cm	111 x 111 cm	131 x 131 cm
can withstand loads up to 750 kg Art. no. Weight/pc.	090532 15.0 kg	090534 24.0 kg	090536 44.0 kg	090538 66.0 kg
can be bolted down tightly to exclude surface water and odours, can withstand loads up to 750 kg Art. no. Weight/pc.	090542 26.0 kg	090544 39.0 kg	090546 55.0 kg	090548 74.0 kg

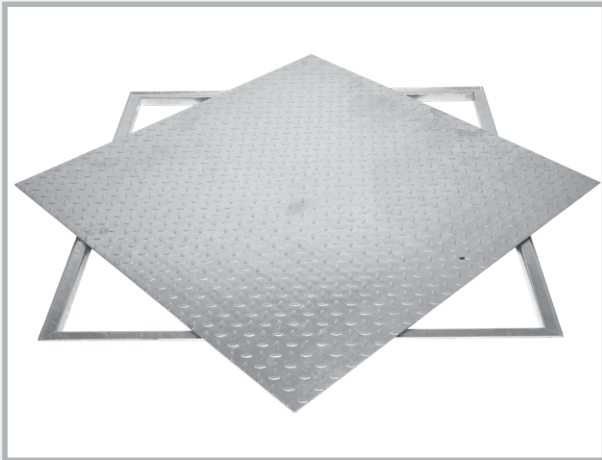
Traffic-bearing covers, galvanised

Pump sump L x W x H Dimensions	60 x 60 x 60 cm	80 x 80 x 80 cm	100 x 100 x 80 cm	120 x 120 x 80 cm
clear dimension	63 x 63 cm	83 x 83 cm	103 x 103 cm	120 x 120 cm
cover size	70 x 70 cm	90 x 90 cm	110 x 110 cm	126.5 x 126.5 cm
frame outer dimension	74 x 74 cm	94 x 94 cm	114 x 114 cm	131 x 131 cm
traffic-bearing up to 5000 kg wheel pressure up to 1250 kg Art. no. Weight/pc.	090552 32.0 kg	090554 51.0 kg	090556 70.0 kg	090558 112.0 kg
traffic-bearing up to 15000 kg wheel pressure up to 3750 kg Art. no. Weight/pc.	090562 43.0 kg	090564 70.0 kg	090566 97.0 kg	090568 137.0 kg

Shaft cover for pump sump

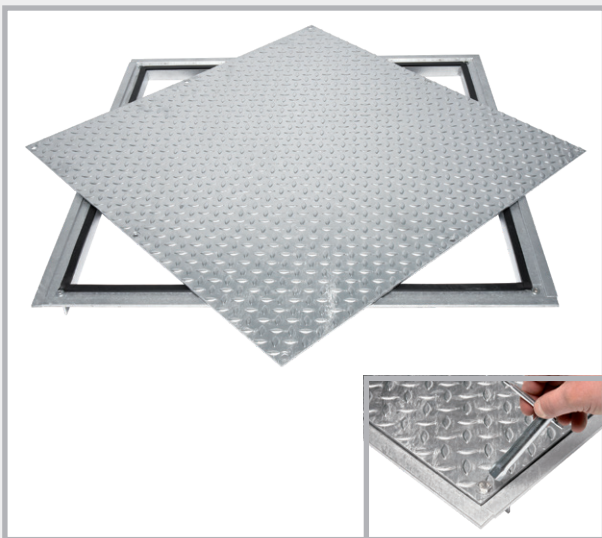
walkable

Frame and cover galvanised, with 1 borehole as lifting opening



walkable

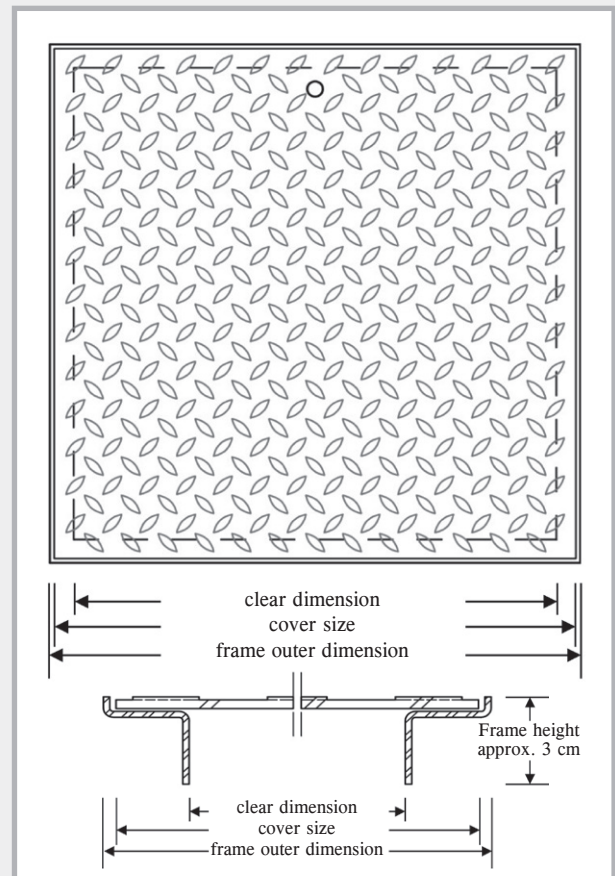
Can be bolted down tightly to exclude surface water and odours, galvanised frame and cover, EPDM cellular-rubber seal in frame, cover can be screwed



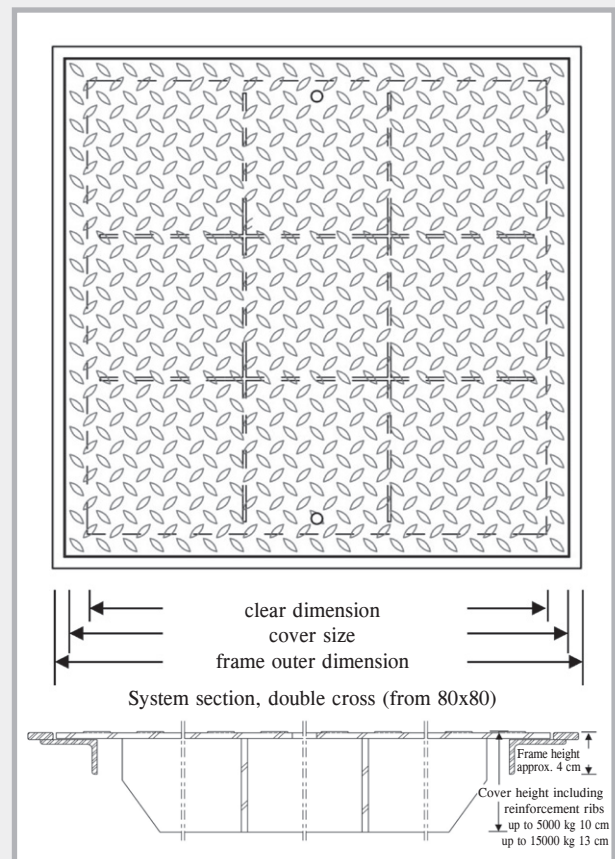
traffic-bearing, galvanised



Dimensions, walkable



Dimensions, traffic-bearing



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