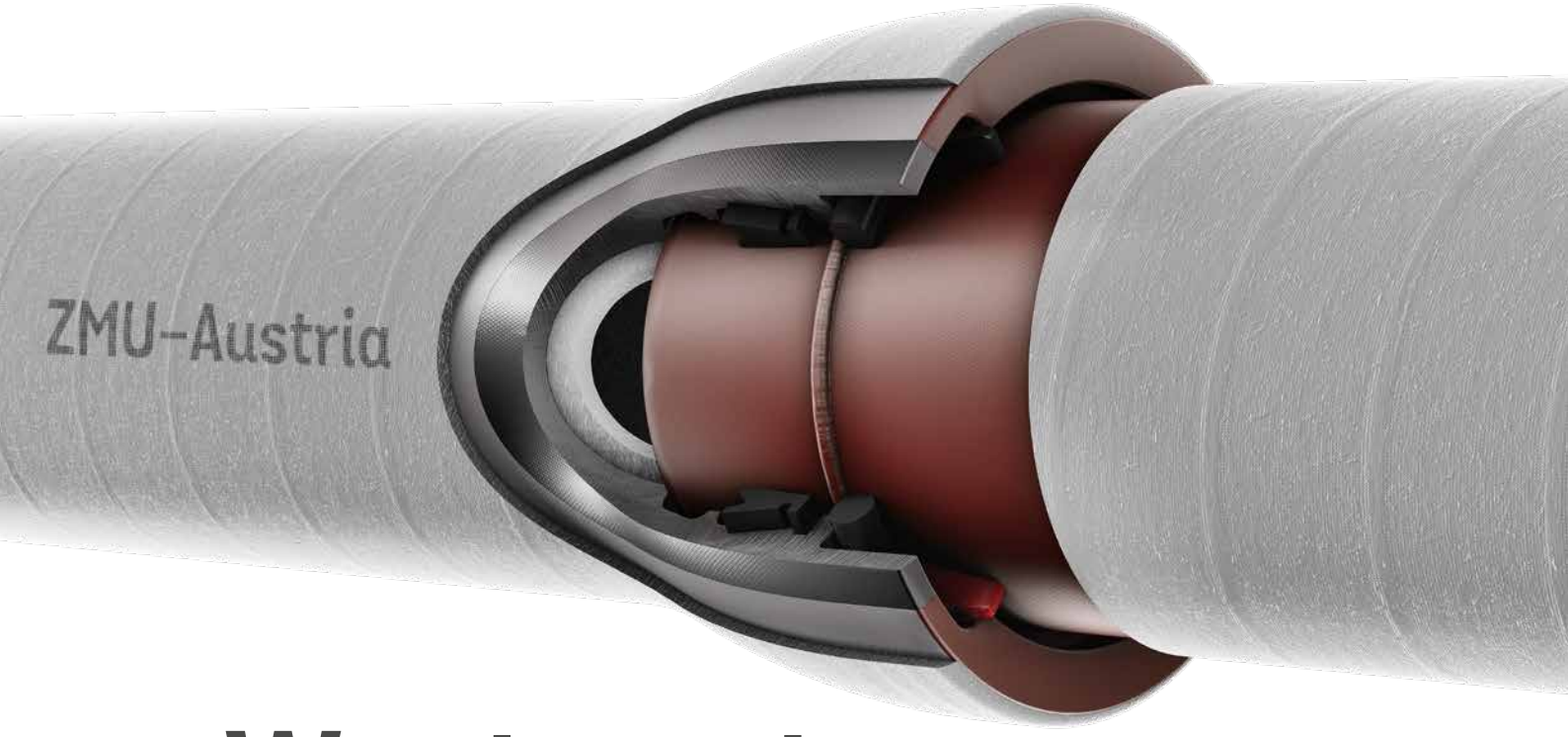
PIPE SYSTEMS



Wastewater Engineering

DN 80 to DN 600

ductile iron solutions
www.trm.at

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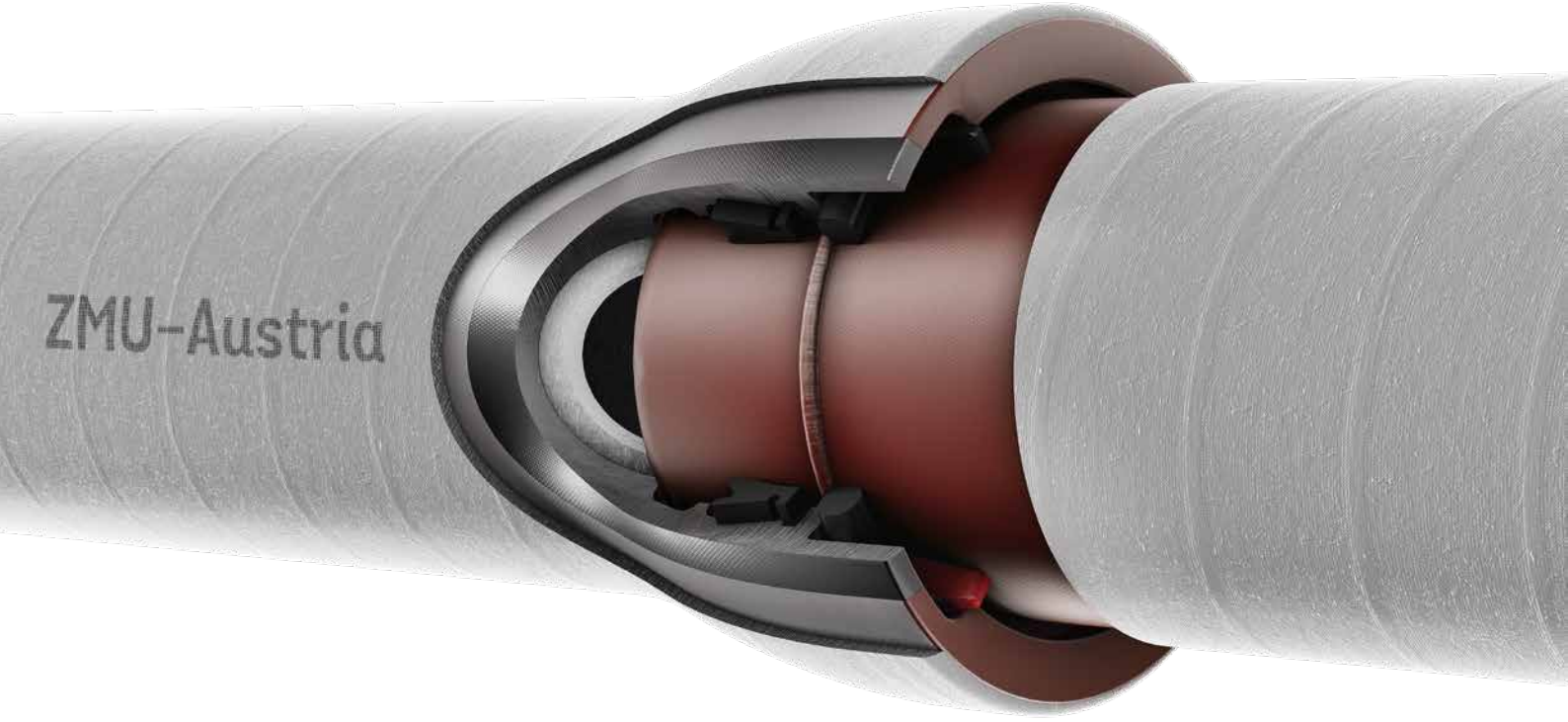


VRS®-T joint DN 80 to DN 500

Restrained Locking Systems

VRS®-T joint

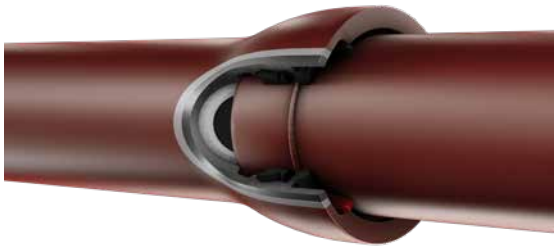
In wastewater disposal systems, it is not only the reliability of the pipe that is important, but also the durability of the material used. Tiroler Rohre GmbH's pipe system meets the requirements for safety, fast and cost-effective installation, and durability.

Joint structure

A restrained socket consists of two separate chambers: a retaining chamber and a sealing chamber. The forces are transmitted from one pipe / fitting to the other via the welded bead and the locking elements into the socket. The design of the joint is the same for pipes and fittings.

The joint acts as a longitudinally displaceable connection and can withstand high loads. It remains sealed even under maximum decentering or joint-bending conditions, as proven by the type tests according to EN 545 and EN 598.

- Thrust blocks to absorb the internal forces are not necessary – and mobility in the joint is maintained.
- Tiroler Rohre GmbH offers pipe system tests (type tests) according to ÖNORM EN 545 and ÖNORM EN 598 for all DN and pressure ratings.



VRS®-T joint DN 80 to DN 500

VRS®-T joint DN 600

VRS®-T joint with clamping ring DN 80 to DN 500

Allowable pressures

acc. to EN 545 + EN 598

PFA-allowable operating pressure

(highest hydrostatic pressure that a pipeline component can withstand in continuous operation)

PMA highest allowable operating pressure

(highest temporary pressure, including pressure surges, that a pipeline component can withstand during operation)
= 1.2 x PFA

PEA-allowable test pressure

(highest hydrostatic pressure that a newly installed pipeline component can withstand for a relatively short time to ensure the integrity and leak-tightness of the pipeline)
= 1.2 x PFA + 5 bar

⚠ The allowable test pressure (PEA) differs from the system test pressure (STP), which relates to the calculation pressure of the pipeline and serves to maintain its condition and leak-tightness.

Negative internal pressure

Ductile iron pipes and fittings can be used for negative pressures of up to -0.6 bar (continuous) or -0.9 bar (short-term).

Pressure classes (C classes)

According to EN 545, restrained locking systems are not classified into C classes, so the dimensions deviate from those of pipes according to EN 545 Table 17 (pipes with non-restrained locking systems).

Consistent system

Restrained plug-in socket systems made by different manufacturers cannot be combined because they use different force transmission elements, have different welded bead designs and are located at different distances from the pipe end.

⚠ For possible solutions, please contact our application engineering department.

VRS®-T EPDM gasket ring according to EN 681-1

VRS®-T lock set

VRS®-T Joint

DN 80 to DN 250

VRS®-T joint with tension and shear protection according to ÖNORM B 2597. Separate retaining and sealing chamber, spigot with welded bead.

VRS®-T joint set DN 80 to DN 250:

+ VRS®-T EPDM gasket ring according to EN 681-1
+ VRS®-T lock set:
  - 1 lock, right (black)
  - 1 lock, left (red)
  - 1 catch

VRS®-T EPDM gasket ring according to EN 681-1

VRS®-T lock set

VRS®-T Joint

DN 300 to DN 500

VRS®-T joint with tension and shear protection according to ÖNORM B 2597. Separate retaining and sealing chamber, spigot with welded bead.

VRS®-T joint set DN 300 to DN 500:

+ VRS®-T EPDM gasket ring according to EN 681-1
+ VRS®-T lock set:
  - 2 locks, right (black)
  - 2 locks, left (red)
  - 2 catches

VRS®-T EPDM gasket ring according to EN 681-1

VRS®-T clamping ring for cut pipes

VRS®-T Joint with clamping ring

DN 80 to DN 500

VRS®-T joint with tension and shear protection according to ÖNORM B 2597. Separate retaining and sealing chamber, spigot without welded bead.

⚠ The installation instructions for clamping rings must be observed!

Clamping ring set DN 80 to DN 500:

+ VRS®-T EPDM gasket ring according to EN 681-1
+ VRS®-T split clamping ring:
  – 2 clamping ring halves
  – 2 hex bolts
  – 2 nuts
  – Tightening torque 60 Nm

Clamping rings can be used with cut VRS®-T pipes, which means that the customer does not need to use a welded bead. The clamping ring is a restrained locking system in which the claws of the clamping ring press into the outer wall of the pipe to secure the connection.

⚠ Avoid clamping rings in fittings!
⚠ Do not use clamping rings in above-ground pipes, in pipes subject to pulsation or in trenchless installations.

TYTON® EPDM gasket ring according to EN 681-1

VRS®-T locking set

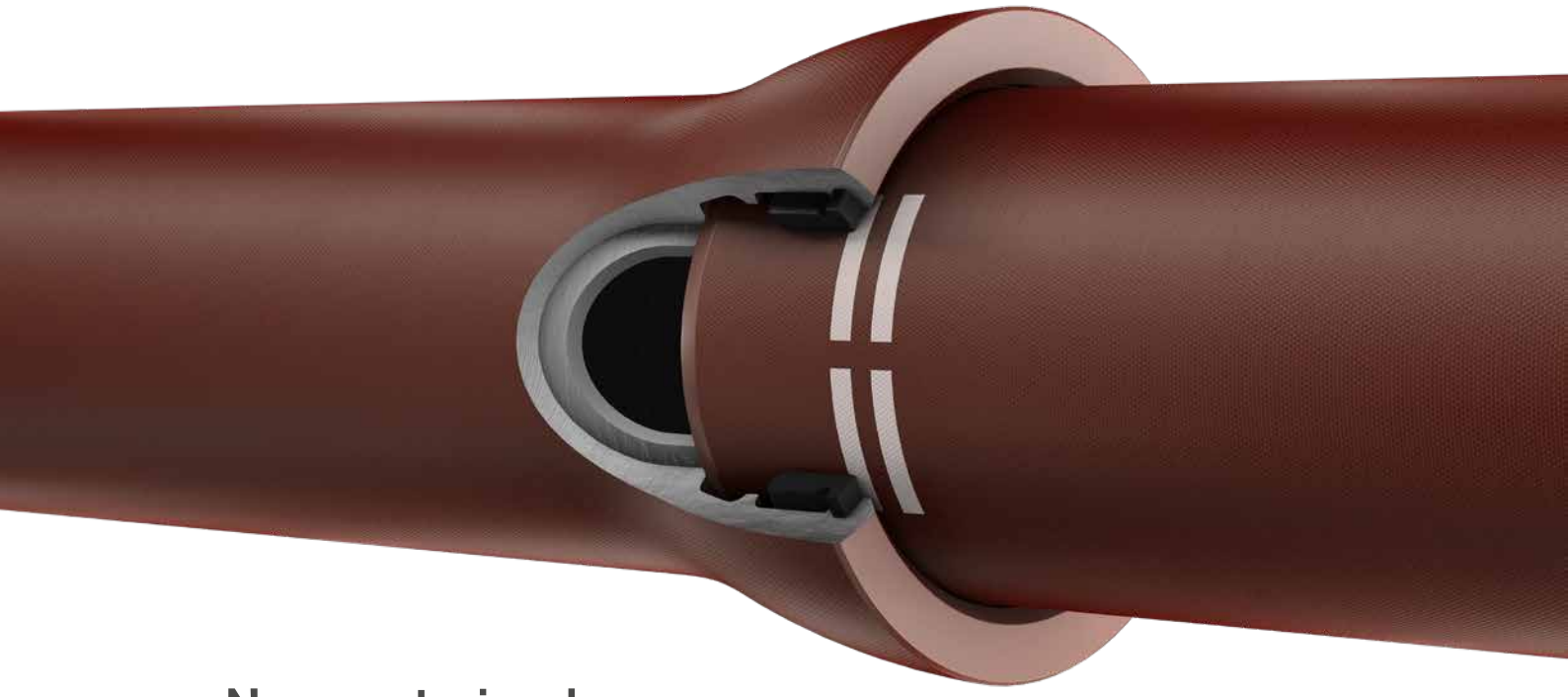
VRS®-T Joint

DN 600

VRS®-T joint with tension and shear protection according to ÖNORM B 2597.Separate retaining and sealing chamber, spigot with welded bead.

VRS®-T joint set DN 600:

+ TYTON® EPDM gasket ring according to EN 681-1
+ VRS®-T locking set:
  – 9 locking segments
  – 1 tension strap



Non-restrained Locking Systems

TYTON® Joint

The European ÖNORM EN 545 and ÖNORM EN 598 product standards for ductile iron pipes govern the requirements for the function of non-restrained locking systems.

Joint structure

A non-restrained TYTON® socket consists only of a chamber for fitting the gasket ring. The forces can only be absorbed up to the bursting pressure – higher internal forces must be absorbed with thrust blocks and higher pressure classes. The design of the joint is the same for pipes and fittings.

The joint acts as a longitudinally displaceable connection and can withstand high loads. It remains sealed even under maximum decentering or joint-bending conditions, as proven by the type tests according to EN 545 and EN 598.

⚠ Tiroler Rohre GmbH offers pipe system tests (type tests) according to ÖNORM EN 545 and ÖNORM EN 598 for all DN and pressure ratings.

Allowable pressures

acc. to EN 545 + EN 598

PFA-allowable operating pressure

(highest hydrostatic pressure that a pipeline component can withstand in continuous operation)

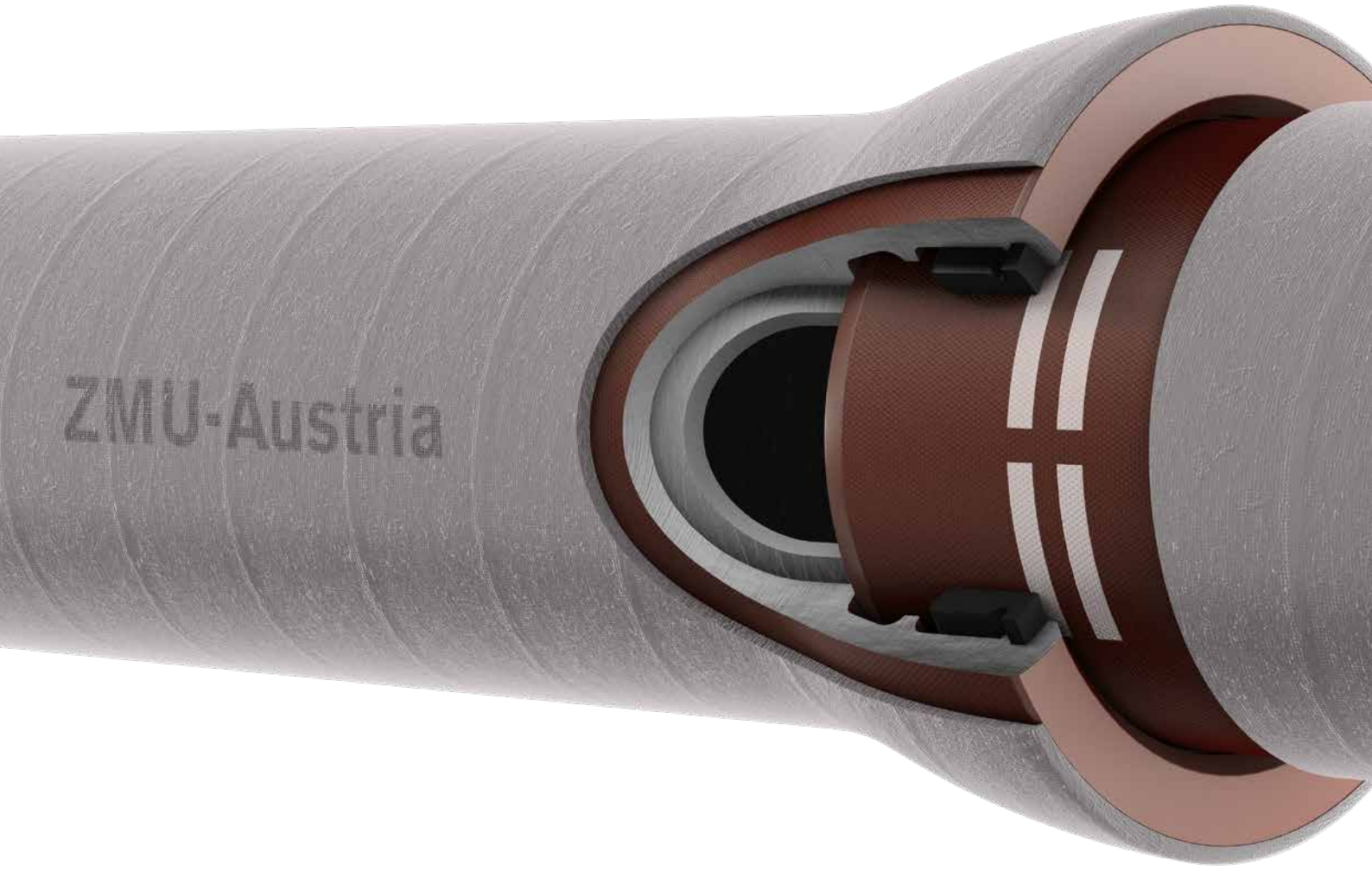
PMA highest allowable operating pressure

(highest temporary pressure, including pressure surges, that a pipeline component can withstand during operation)
= 1.2 x PFA

PEA-allowable test pressure

(highest hydrostatic pressure that a newly installed pipeline component can withstand for a relatively short time to ensure the integrity and leak-tightness of the pipeline)
= 1.2 x PFA + 5

⚠ The allowable test pressure (PEA) differs from the system test pressure (STP), which relates to the calculation pressure of the pipeline and serves to maintain its condition and leak-tightness.



Negative internal pressure

Ductile iron pipes and fittings can be used for negative pressures of up to -0.6 bar (continuous) or -0.9 bar (short-term).

Pressure classes (C classes)

According to EN 545, non-restrained locking systems are divided into pressure classes (C classes). The maximum PFA of a non-restrained pipe corresponds to its pressure class (e.g. C50 = PFA 50 bar).

Consistent system

Non-restrained plug-in socket systems made by different manufacturers can only be combined in limited circumstances because they use different sealing elements.

⚠ For possible solutions, please contact our application engineering department.

TYTON® EPDM gasket ring according to EN 681-1

TYTON® Joint

DN 80 to DN 600

TYTON® joint according to DIN 28 603. Sealing chamber, spigot with insertion depth marking.

TYTON® joint set DN 80 to DN 600:

+ TYTON® EPDM gasket ring according to EN 681-1


straub

PUR reddish-brown polyurethane coating for wastewater pipes

Wastewater Pipes

DN 80 to DN 600

standard overall length 5.0 m

according to ÖNORM EN 545, ÖNORM EN 598 and ÖNORM B 2597 with VRS®-T restrained locking systems or TYTON® non-restrained locking systems.

Coating

Internal lining

+ Alumina cement

⚠ Special linings available on request

External coating

+ Zinc coating with PUR-Longlife coating
+ Zinc coating with PUR-TOP coating
+ Zinc coating with ZMU-Austria coating

⚠ Other coatings (e.g. WKG coating and zinc-aluminum coating with top coat) available on request

⚠ For more detailed information, see the section on coatings.

Extremely resistant ZMU-Austria (cement-mortar coating)

WKG pipe, buried with PE-HD casing pipe

PUR-TOP coating

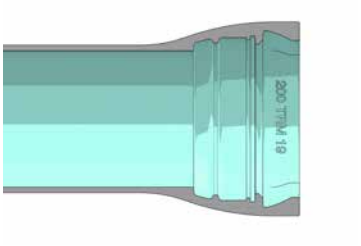
WKG pipe, open-air with spiral casing pipe

Labeling

Wastewater pipes are labeled by cast markings and lettering.

Cast labels:

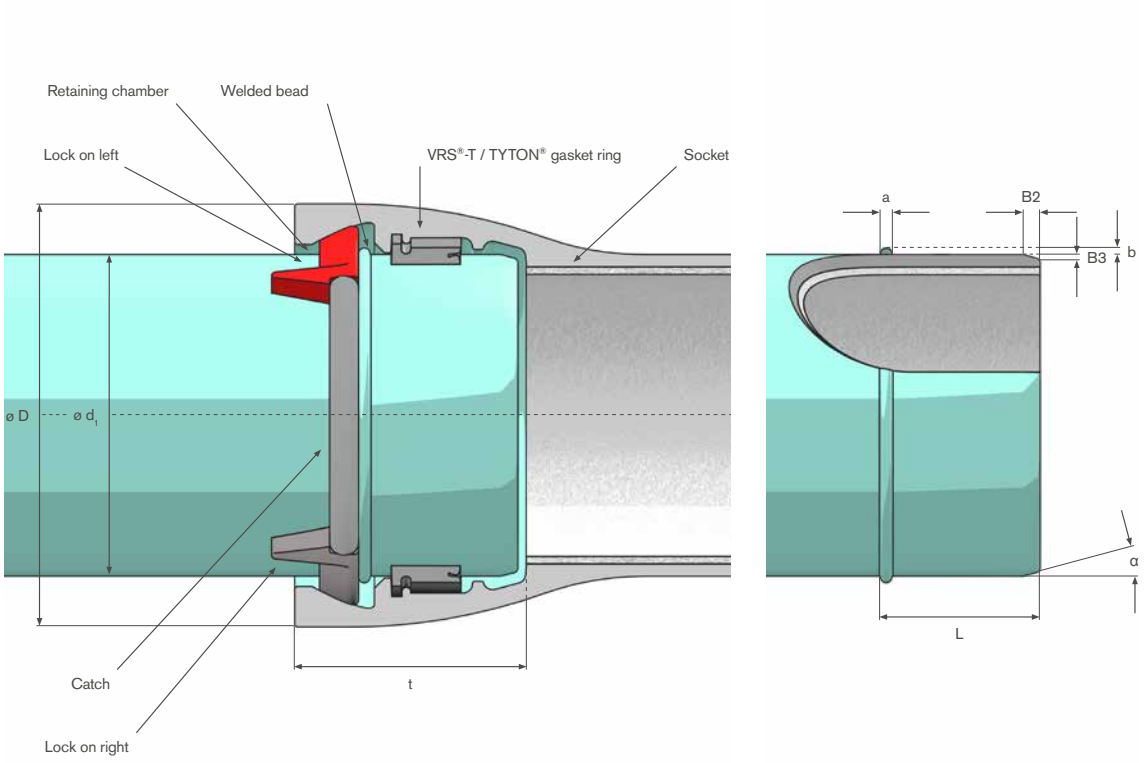
The pipes are labeled with the nominal diameter, the manufacturer's mark and the year inside the socket, i.e. at a suitable point where the function of the joint is not disturbed. These markings can be cast in embossed or grooved form. The parallel, curved grooves some 3 mm deep in the front of the socket further identify the material as "ductile cast iron". Short lengths of pipe (4 m or 4.5 m) are marked at the front of the socket.



Nominal diameter, manufacturer's mark and year inside the socket.

Marking for short lengths of pipe (4 m or 4.5 m) at the front of the socket.

Marking for ductile iron at the front of the socket.



VRS®-T Wastewater Pipes

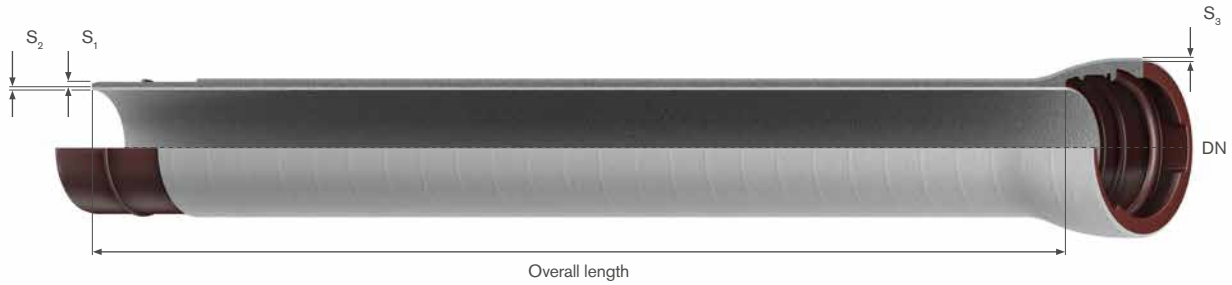
DN 80 to DN 600

standard overall length 5.0 m

Overview of technical data for pipes with restrained locking systems.

VRS®-T joint DN 80 to DN 600

DN	Dimensions [mm]									
	Spigot diameter	Deviations	Socket diameter	Insertion depth	Welded bead			Bevel		
	d1		D	t	L	a	b	B2	B3	α
80	98	+1.0 | -2.7	156	127	86 ±4	8 ±2	5 +0.5| -1	8–10	3–4	10
100	118	+1.0 | -2.8	177	135	91 ±4	8 ±2	5 +0.5| -1			
125	144	+1.0 | -2.8	206	143	96 ±4	8 ±2	5 +0.5| -1			
150	170	+1.0 | -2.9	232	150	101 ±4	8 ±2	5 +0.5| -1			
200	222	+1.0 | -3.0	292	160	106 ±4	9 ±2	5.5 +0.5| -1			
250	274	+1.0 | -3.1	352	165	106 ±4	9 ±2	5.5 +0.5| -1			
300	326	+1.0 | -3.3	410	170	106 ±4	9 ±2	5.5 +0.5| -1			
400	429	+1.0 | -3.5	521	190	115 ±5	10 ±2	6 +0.5| -1			
500	532	+1.0 | -3.8	630	200	120 ±5	10 ±2	6 +0.5| -1			
600	635	+1.0 | -4.0	732	175	116 +0 | -2	9 ±1	6 +0.5| -1	8–10	3–4	15



VRS®-T pipes DN 80 to DN 600

DN	Wastewater	Dimensions [mm]			Weight per meter of pipe [kg]$_a$		Weight per pipe [kg]$_b$	
	K class	s_1 Cast iron	s_2 ZMA	s_3 ZMU	Pipe 5 m	Pipe 5 m ZMU	Pipe 5 m	Pipe 5 m ZMU
80	K 8	4.7	4	5	16.3	20.0	81.6	100.1
100	K 8	4.7	4	5	20.0	24.5	100.0	122.3
125	K 8	4.7	4	5	25.6	31.1	128.2	155.3
150	K 8	4.7	4	5	31.5	37.9	157.3	189.4
200	K 8	4.7	4	5	39.5	47.9	197.6	239.6
250	K 8	4.7	4	5	49.4	59.8	247.2	299.1
300	K 8	4.8	4	5	62.4	74.7	311.9	373.7
400	K 8	5.2	5	5	95.7	112.1	478.7	560.3
500	K 8	6.2	5	5	131.0	151.3	654.8	756.3
600	K 8	6.9	5	5	166.9	191.2	834.4	955.8

$_a$ theoretical mass of 1 m pipe, incl. ZMA, zinc, top coat and socket portion

$_b$ theoretical mass per pipe, incl. ZMA, zinc, top coat and socket portion, an overmold of approx. 10% is to be expected.

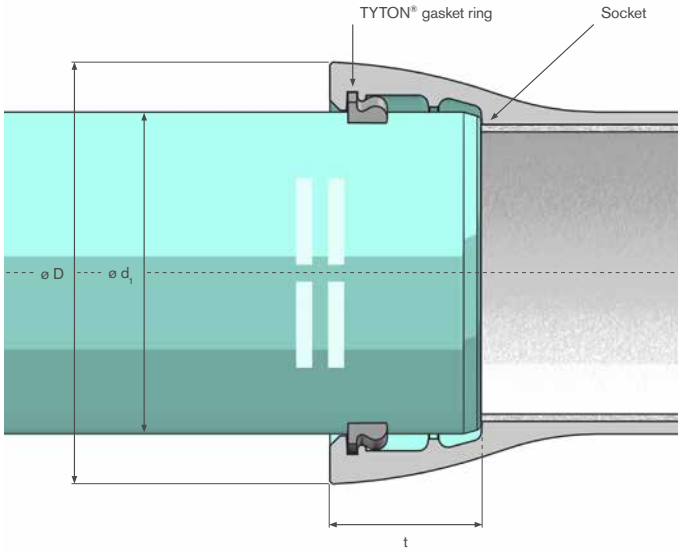
$_1$ Minimum dimension | $_{2, 3}$ Nominal dimension

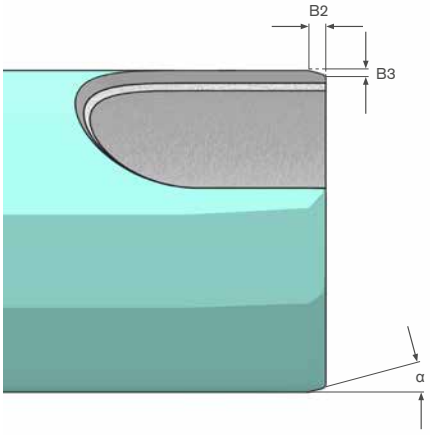
Technical data

DN	K class	Number of locks or set of locks	perm. Tensile force [kN] according to DVGW-GW 320-1$_d$	perm. Tensile forces [kN] acc. to TRM$_e$	max. bending [°]	min. radius [m]
80	K 8	2	70	115	5	57
100	K 8	2	100	150	5	57
125	K 8	2	140	225	5	57
150	K 8	2	165	240	5	57
200	K 8	2	230	350	4	72
250	K 8	2	308	375	4	72
300	K 8	4	380	380	4	72
400	K 8	4	558	650	3	95
500	K 8	4	860	860	3	95
600	K 8	9	1,200	1,525	2	143

$_d$ PFA: allowable operating pressure | PMA = 1.2 x PFA | PEA = 1.2 x PFA + 5 | higher PFA on request | see instructions on the use of clamping rings

$_e$ +50 kN for straight course | higher tensile forces available on request





TYTON® Wastewater Pipes

DN 80 to DN 600

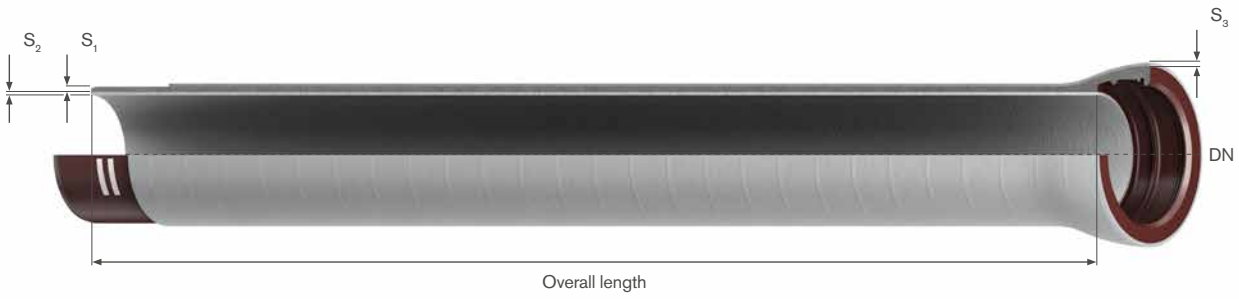
standard overall length 5.0 m

Overview of technical data for pipes with non-restrained locking systems.

TYTON joint DN 80 to DN 600

DN	Dimensions [mm]a							max. bending
	Spigot diameter	Tolerances	Socket diameter	Insertion depth	Bevel			
	d1		D	t	B2	B3	α	[°]
80	98	+1.0 | -2.7	156	85	8–10	3–4	10	5
100	118	+1.0 | -2.8	177	90				5
125	144	+1.0 | -2.8	206	95				5
150	170	+1.0 | -2.9	234	100				5
200	222	+1.0 | -3.0	292	105				5
250	274	+1.0 | -3.1	352	105				5
300	326	+1.0 | -3.3	410	105				5
400	429	+1.0 | -3.5	521	115				4
500	532	+1.0 | -3.8	630	120				3
600	635	+1.0 | -4.0	732	175	8–10	3–4	15	3

a Tolerances are possible



TYTON pipes DN 80 to DN 600

DN	Wastewater	Dimensions [mm]			Weight per meter of pipe [kg]$_a$		Weight per pipe [kg]$_b$	
	C class	s_1 Cast iron	s_2 ZMA	s_3 ZMU	Pipe 5 m	Pipe 5 m ZMU	Pipe 5 m	Pipe 5 m ZMU
80	C 100	4.7	4	5	15.9	19.6	79.5	98.0
100	C 100	4.7	4	5	19.5	23.6	97.3	119.6
125	C 64	4.8	4	5	25.0	30.4	124.9	152.0
150	C 64	5.1	4	5	30.5	36.9	152.4	184.5
200	C 50	4.8	4	5	39.6	48.0	197.8	239.8
250	C 40	4.7	4	5	47.7	58.1	238.4	290.3
300	C 40	4.8	4	5	60.1	72.5	300.5	362.3
400	C 30	5.5	5	5	91.2	107.5	456.0	537.6
500	C 30	6.2	5	5	123.9	144.2	619.6	721.1
600	C 30	6.9	5	5	160.9	185.2	804.4	925.8

$_a$ theoretical mass of 1 m pipe, incl. ZMA, zinc, top coat and socket portion

$_b$ theoretical mass per pipe, incl. ZMA, zinc, top coat and socket portion, an overmold of approx. 10% is to be expected.

$_1$ Minimum dimension $_2$ Nominal dimension

$_3$ Nominal dimension

Extensive range of fittings

Wastewater Fittings

DN 80 to DN 600

Ductile iron wastewater fittings are supplied in nominal diameters DN 80 to DN 600 with VRS®-T restrained locking systems or TYTON® non-restrained locking systems.

Markings on ductile iron fittings

Cast labels:

All fittings manufactured by member companies of the "Fachgemeinschaft Gussrohrsysteme" (European Association for Ductile Iron Pipe Systems – FGR/EADIPS) carry the "FGR" mark as confirmation of compliance with all guidelines for obtaining the "FGR Quality Seal".

Ductile iron fittings are marked with the manufacturer's logo, nominal diameter and type of socket (VRS®-T or TYTON). Bends are also provided with the respective centering angle on the outer surface.

⚠ To identify the material as "ductile cast iron", the fittings have three embossed points in a triangle on the outer surface.

⚠ In special cases, further markings can be specified.

Fitting designations and symbols

Name	Description	Symbol	page
45° pipeline-connection fitting with TYTON socket	KAS		20
45° pipeline branch with TYTON socket	MMC		21
Pipeline-cleaning fitting	KPS		22
Pipeline-cleaning fitting with TYTON socket	KPS		23
Coupling fitting with TYTON socket	KUP		24
Shaft connection fitting with TYTON socket	SAS TYTON		25
Shaft-connection fitting with VRS®-T socket	SAS VRS®-T		26

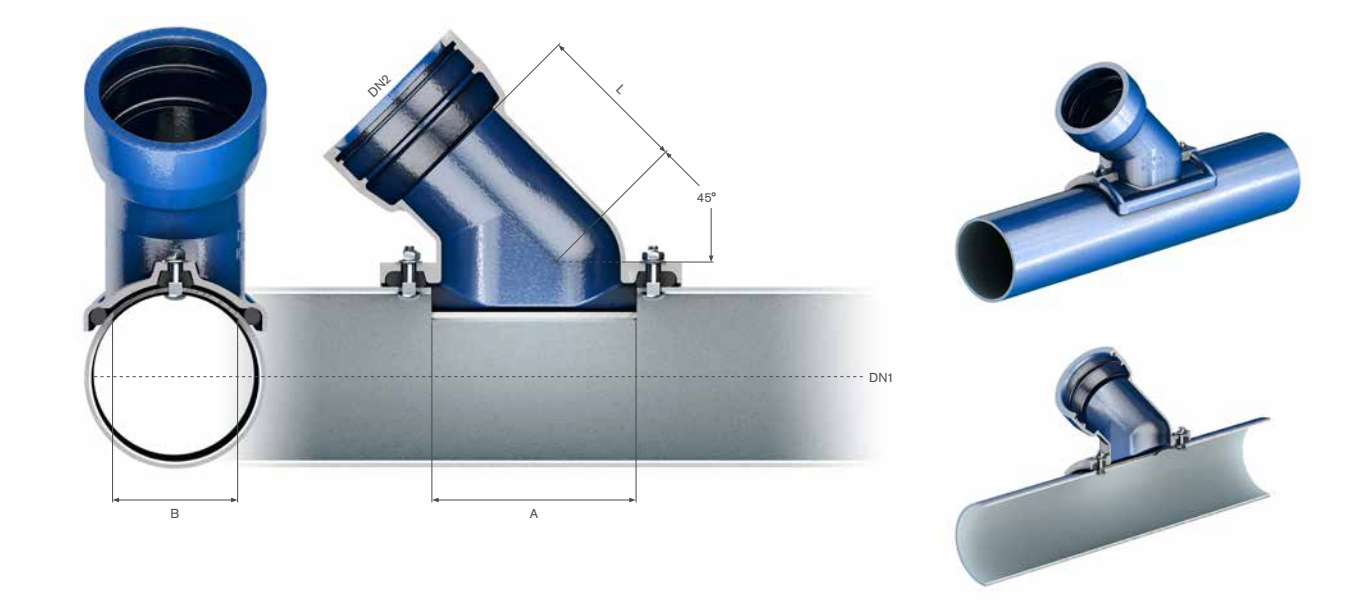
Name	Description	Symbol	page
ML/PVC/PE transition fitting	UEB	-	27
Transition gasket ring	GKS	-	28
NBR gasket ring	NBR	-	29
Clamp	–	-	30
Pile support	–	-	31

Coating

All fittings are coated with epoxy resin powder on the inside and outside according to EN 14 901 and meet the specifications of the “Quality-Assurance Association for Heavy-Duty Corrosion Protection" (GSK) RAL-GZ 662.

⚠ Please note: Customers may not cut, otherwise modify or process fittings.

RAL GÜTEZEICHEN
SCHWERER KORROSIONSSCHUTZ VON ARMATUREN UND FORMSTÜCKEN



KAS Fitting

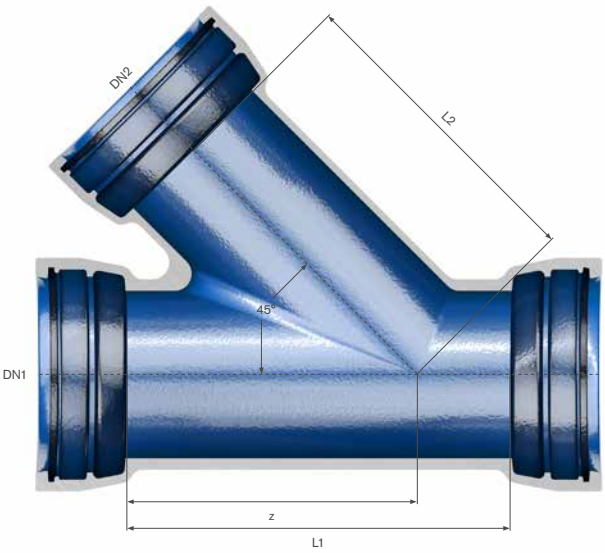
45° pipe-connection fitting with TYTON® socket

Ductile iron pipe-connection fitting with 45° outlet according to ÖNORM EN 598. TYTON® joint according to DIN 28 603. Epoxy resin coating according to ÖNORM EN 14 901 and RAL-GZ 662.

⚠ Assembly on the pipe.

DN1	DN2	Article no.	Dimensions [mm][a]			Mass [kg]	Accessories	Bolts
			A	B	L			
200	150	106080599	240	145	180	14.2	Frame gasket and cutting template	
250–300	150	106080600	240	150	180	14		
400–500	150	106080601	240	155	180	13.8		
250	200	106080603	310	195	220	19.25		
300	200	106080606	310	200	220	19.15		
400–500	200	106080602	310	205	220	19.2		
600	150	106080604	240	160	180	13.05		
600	200	106080605	310	210	220	18.9		

[a] according to EN 598 | DIN 28 603 | factory standards



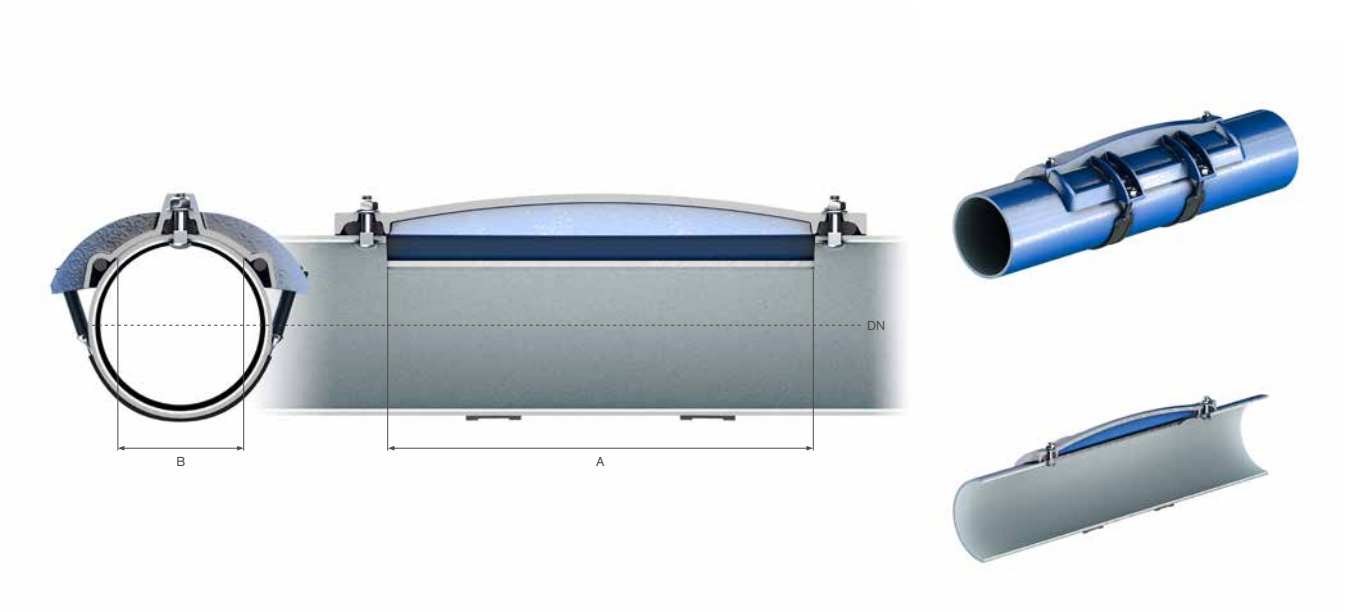
MMC Fitting

45° pipe branch with TYTON® socket

Ductile iron pipe branch with 45° outlet according to ÖNORM EN 598. TYTON® joint according to DIN 28 603. Epoxy resin coating according to ÖNORM EN 14 901 and RAL-GZ 662.

DN1	DN2	Article no.	Dimensions [mm][a]			Mass [kg]
			L1	L2	z	
150	150	106025497	315	290	245	39
200	200	106025498	450	370	340	65

[a] according to EN 598 | DIN 28 603 | factory standards



KPS Pipe-Cleaning Fitting

Pipe-cleaning fitting

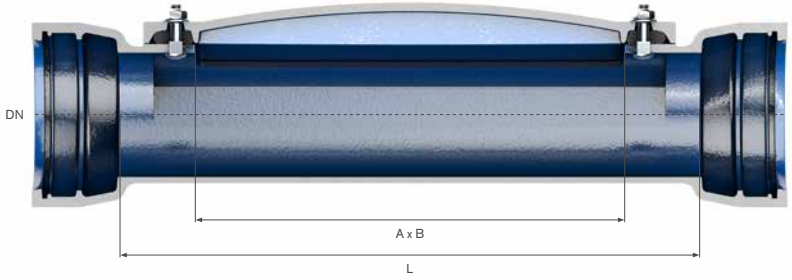
Ductile iron pipe-cleaning fitting according to ÖNORM EN 598. Epoxy resin coating according to ÖNORM EN 14 901 and RAL-GZ 662.

- ⚠ For gravity pipes, with additional clamp for pump lines up to 6-bar operating pressure.
- ⚠ Assembly on the pipe.

DN	Article no.	Dimensions [mm] [a] [b]		Mass [kg]	Accessories	Bolts
		A	B			
200	106080608	500	145	10.97	Frame gasket and cutting template	
250–300	106080609	500	150	10.9		
400–500	106080610	500	155	10.05		
600	106080611	500	160	8.87		

[a] according to EN 598 | factory standards

[b] For gravity pipes, with additional clamp for pump lines up to 6-bar operating pressure



KPS Fitting

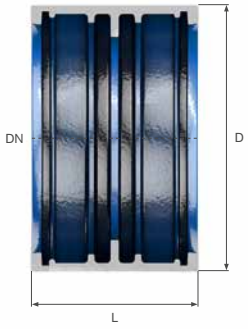
Pipe-cleaning fitting with TYTON® socket

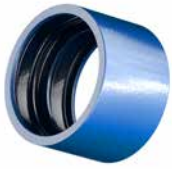
Ductile iron pipe-cleaning fitting according to ÖNORM EN 598. TYTON® joint according to DIN 28 603. Epoxy resin coating according to ÖNORM EN 14 901 and RAL-GZ 662.

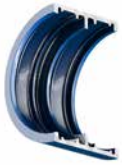
⚠ With additional bolts for pump lines up to 6-bar operating pressure

DN	Article no.	Dimensions [mm][a]			Mass [kg]
		A	B	L	
150	106080607	500	140	680	31.25

[a] according to EN 598 | DIN 28 603 | factory standards







KUP Fitting

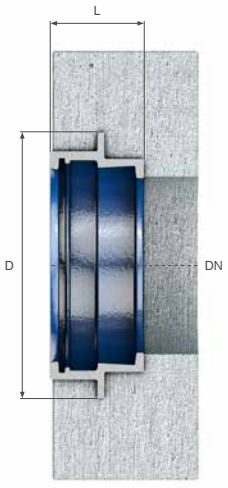
Coupling fitting with TYTON® socket

Ductile iron coupling fitting according to ÖNORM EN 598. TYTON® joint according to DIN 28 603. Epoxy resin coating according to ÖNORM EN 14 901 and RAL-GZ 662.

DN	Article no.	Dimensions [mm]$_a$		Mass [kg]
		D	L	
150	106159968	210	160	8.0
200	106012837	262	165	11.5
250	106012845	315	180	14.5
300	106012853	370	200	21.0
400	106012861	480	210	32.0
500	106012869	590	225	45.0
600[1]	106012877	695	250	56.0

[a] according to EN 598 | DIN 28 603 | factory standards

[1] on request; Please note: Not in stock, please order promptly!



SAS TYTON®

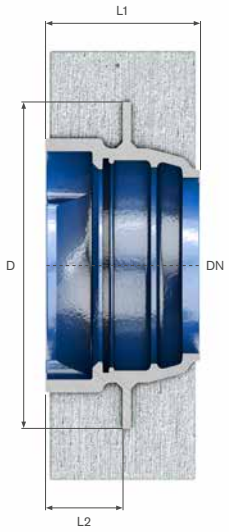
Shaft connection fitting with TYTON® socket

Ductile iron shaft connection fitting with TYTON® socket according to ÖNORM EN 598. TYTON® joint according to DIN 28 603. Epoxy resin coating according to ÖNORM EN 14 901 and RAL-GZ 662.

DN	Article no.	Dimensions [mm]$_a$		Mass [kg]
		D	L	
150	106003250	280	110	7.1
200	106012349	310	110	8.0
250	100021007	360	110	10.0
300	100021009	415	110	12.0
400	106012373	520	110	16.5
500	106012381	635	110	22.0
600[1]	106012389	730	120	28.0

$_a$ according to EN 598 | DIN 28 603 | factory standards

[1] on request; Please note: Not in stock, please order promptly!

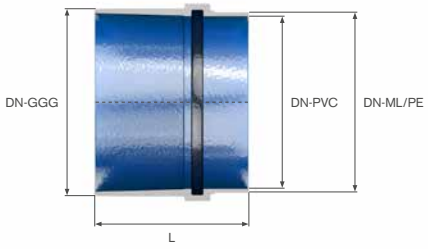


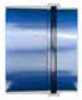
SAS VRS®-T

Shaft connection fitting with VRS®-T socket

Ductile iron shaft connection fitting with VRS®-T socket according to ÖNORM EN 598. VRS®-T joint according to ÖNORM B 2597. Epoxy resin coating according to ÖNORM EN 14 901 and RAL-GZ 662.

DN	Article no.	Dimensions [mm]$_a$			Mass [kg]
		D	L1	L2	
80[1]	–	240	145	70	–
100[1]	–	260	150	75	–
125	106026108	290	160	80	9.0
150	106080661	320	170	85	17.0
200	106080666	380	180	90	22.0
250	106080667	440	190	95	23.0
300	106026199	500	195	100	–
400[1]	–	610	215	115	–
500[1]	–	720	225	120	–





UEB Fitting

ML/PVC/PE transition fitting

Transition fitting for connecting other pipe materials to TYTON® socket DN 200 according to factory standards. TYTON® joint according to DIN 28 603. Epoxy resin coating according to ÖNORM EN 14 901 and RAL-GZ 662.

Material in DN 150	Article no.	Dimensions [mm][a]			Accessories required	Mass [kg]
		L	Nominal dimension	Tolerance		
Socketless ductile iron pipe	106080620	180	210	±0.3	TYTON gasket ring CV joint	5.8
Ductile sewage pipe		180	219	±0.3	TYTON gasket ring	
PVC pipe		180	202	±0.2	TYTON gasket ring O ring	
PE HD pipe		180	210	±0.3	TYTON gasket ring CV connector	
GFK pipe		180	–	–	TYTON gasket ring	
Vitrified clay pipe		180	–	–	Vitrified clay connector fitting	

[a] according to EN 598 | DIN 28 603 | factory standards

GKS Gasket

Transition gasket ring DN 150

Transition gasket ring for connecting other materials to a TYTON® socket DN 150. TYTON® joint according to DIN 28 603.

Material in DN 150	Article no.	Dimensions [mm][a]			Mass [kg]
		Nominal dimension	Da min.	Da max.	
Socketless ductile iron pipe	1401693075	160	158	162	0.27
Ductile sewage pipe		170	167.1	171	
PVC pipe		160	160	160.5	
PE HD pipe		160	160	161.5	
GFK pipe		168	168	168	
Vitrified clay pipe		186	184	188	

[a] according to EN 598 | DIN 28 603 | factory standards

NBR Gasket Ring

Gasket ring with high resistance to mineral oils, grease and hydrocarbons.

DN	Article no.	Mass [kg]
80	700900248	0.1
100	700900249	0.2
125	700900250	0.2
150	700900278	0.2
200	700900279	0.4
250	700900280	0.5
300	700900281	0.7
400	700900283	1.1
500	700900284	1.6

Clamp

For pipe-cleaning fittings

Clamp for pipe-cleaning fittings for use in pump lines up to 6-bar operating pressure.

DN	Article no.	Dimensions [mm]	Mass [kg]
		L	
200	1403290335	520	0.7
250	1403290345	760	0.92
300	1403290355	905	1.06
400	1403290365	1,250	1.37
500	1403290375	1,570	1.69
600	1403290385	1,945	1.69

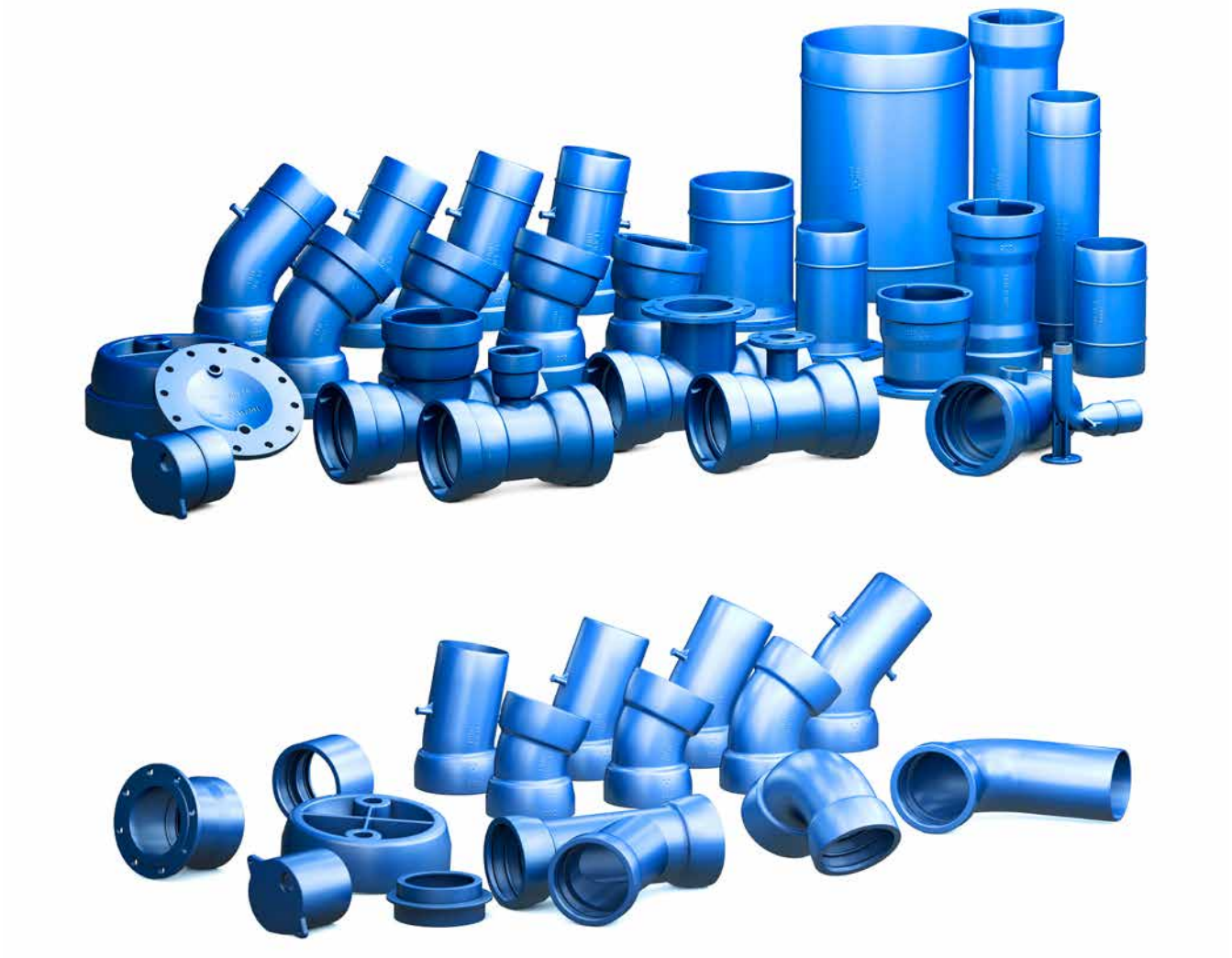
Pile support

Pile support for pipe-system foundations

⚠ The linear load is required in order to calculate the correct wall thickness (K class) of the pipes!

Pile DN	Pipe DN	Article no.	Mass [kg]$_a$	Accessories
TRM 118	200	1404894045	7.6	Neoprene 10 mm or 5 mm for ZMU-Austria pipes
TRM 118	250	1404894005	9.5	
TRM 118	300	1404894105	10.5	
TRM 118	400	1404894115	18.0	
TRM 118	500	1404892135	35.0	

$_a$ according to factory standards



Extensive range of fittings

Other Fittings

⚠ For other fittings from the VRS®-T and TYTON® range, please see the sections on restrained joint technology and non-restrained technology.

PIPE SYSTEMS

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