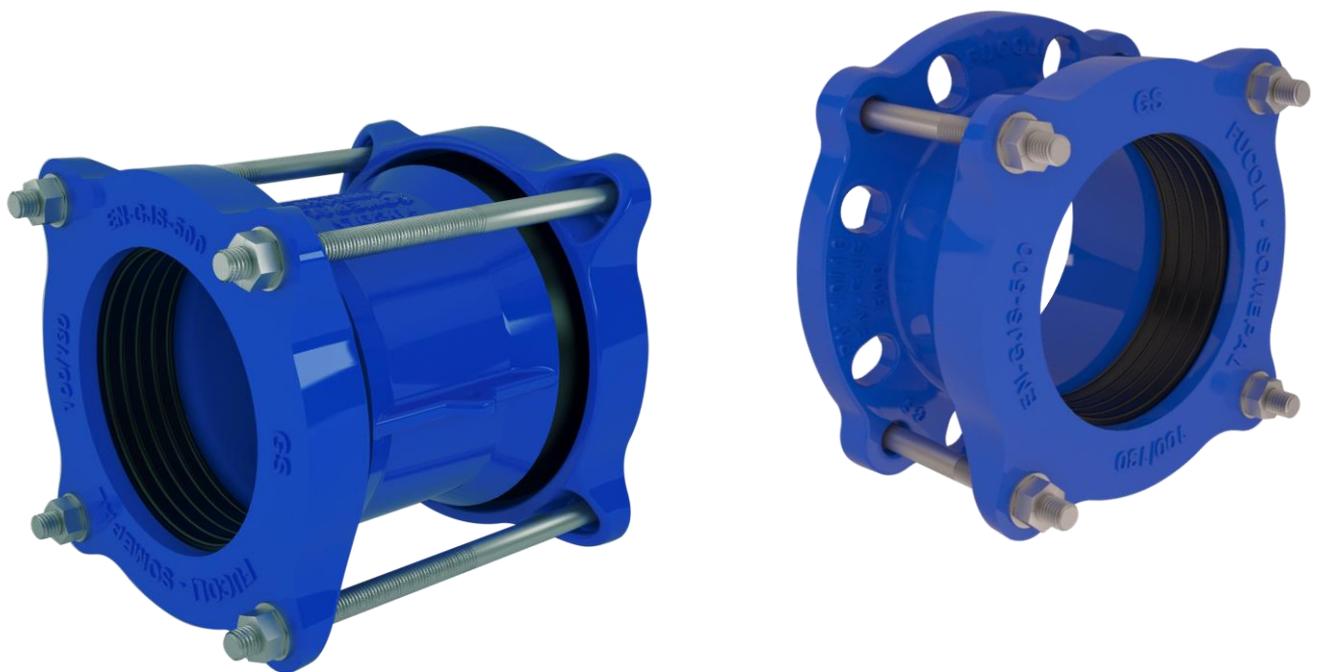




**Fucoli Somepal**  
FUNDIÇÃO DE FERRO, S.A.

DESDE  
SINCE 1946

# OPERATION MANUAL



## LARGE TOLERANCE MULTIMATERIAL COUPLING LARGE TOLERANCE MULTIMATERIAL COUPLING FLANGE ADAPTOR



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## 1. DESCRIPTION

The **MULTIMATERIAL COUPLING** provides a connection of different external dimension and/or different materials.

The coupling can be used in connection of conduits above or below the surface, without necessarily need to change any of its components.

It allows the connection between pipes with different external diameters and different material (e.g. PVC, cast iron, steel and cement pipes). It has two sealing rings, with incorporated orings, which ensures an extremely effective seal.

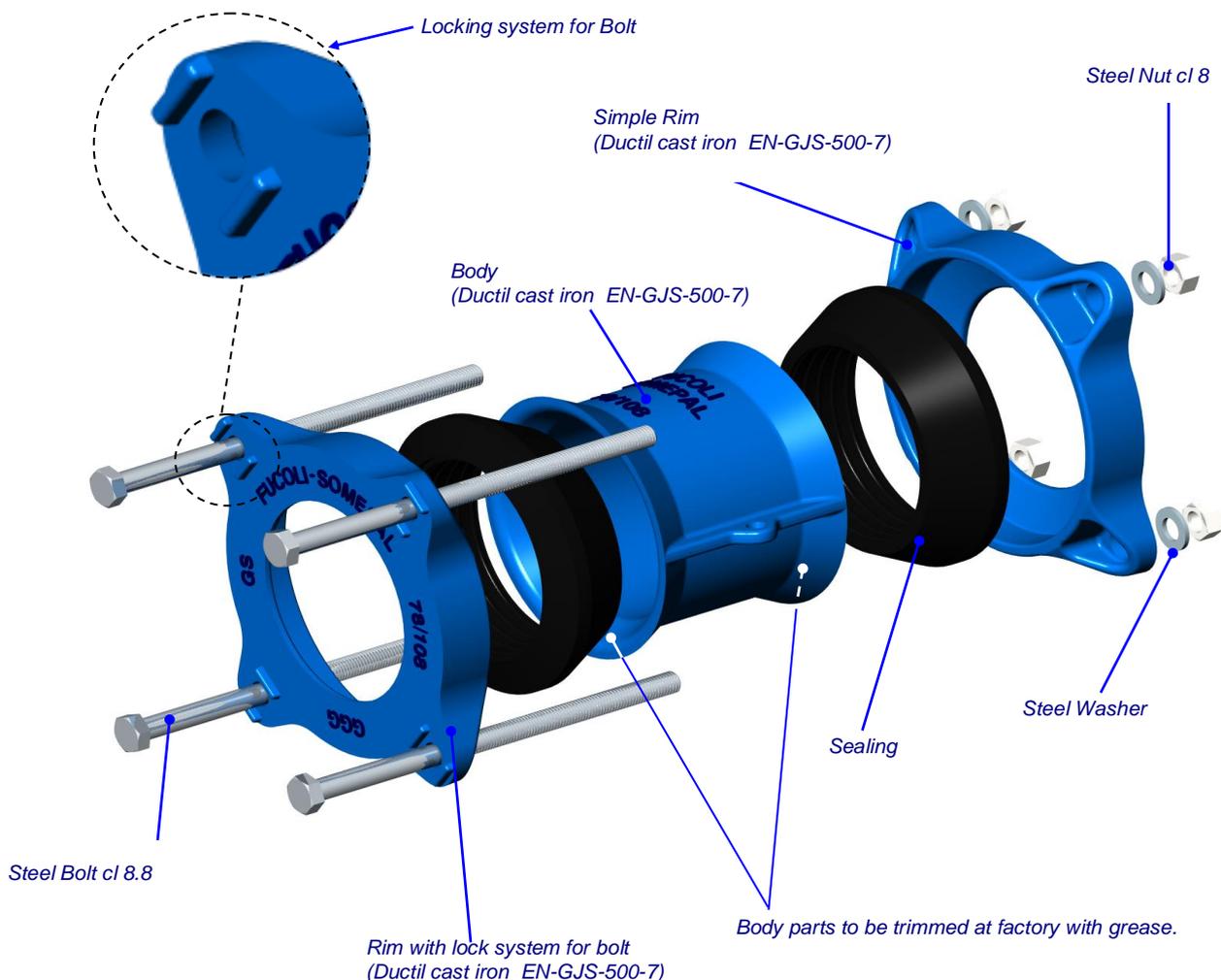
## 2. MATERIALS

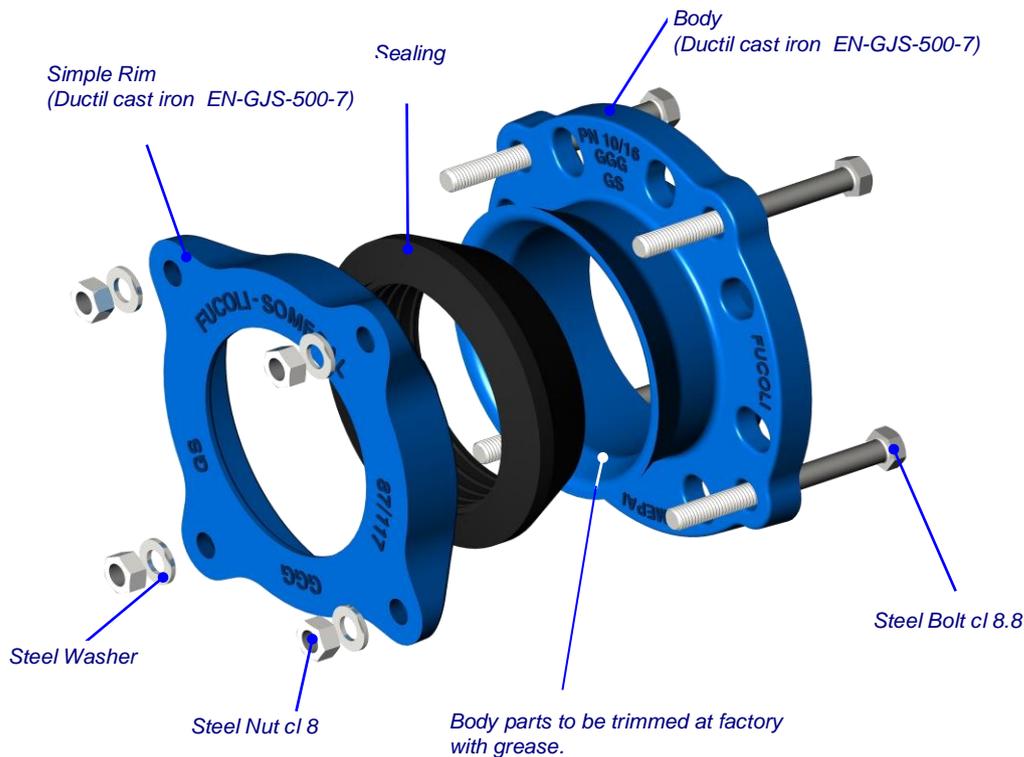
EPDM elastomer seals approved for drinking water, complying with the specifications of the standard EN 681-1 and Annex ZA with CE marking.

Rims and body in EN-GJS-500-7 Ductile Cast Iron according to the standard EN 1563.

Bolts in steel cl.8.8, nuts in cl 8 and washers in steel. Fastenings with Geomet coating.

The epoxy coating is applied according to DIN 30677 and approved by GSK (GSK-ID: 1247) according to the specification RAL-GZ662 and with the with thicken not less than 250 microns.





Other features:

MOP (Maximum operating pressure)

PN 10 (10 bar)

PN 16 (16 bar)

Operating temperature:

From 0°C to 70°C

### 3. POTENTIAL RISK IDENTIFICATION

There were not identified any potential use risks during its development. Its commercialization and after-sales service is not associated or realize any assembly or operational risks, however should be observed the follow situations:



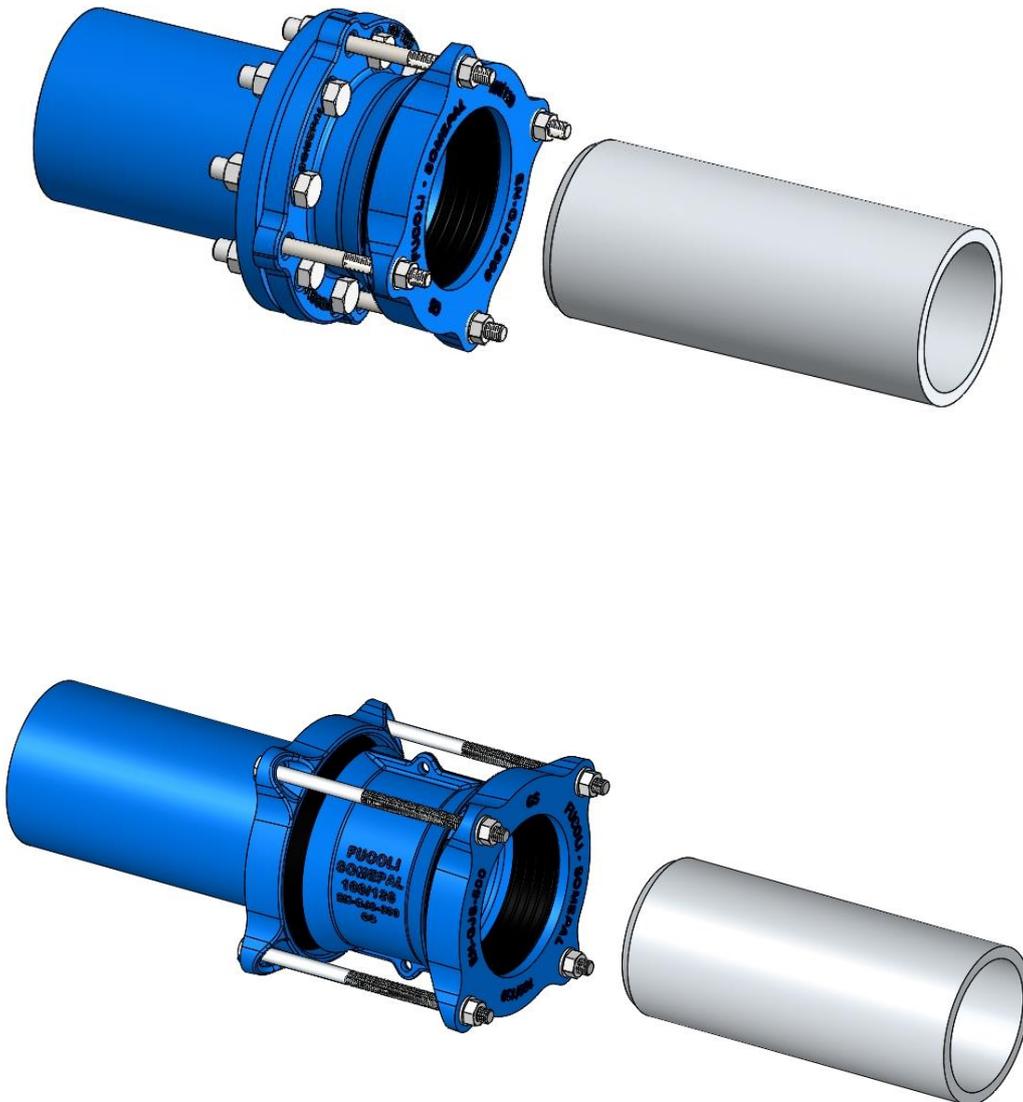
**DANGER OF INJURY HANDSOME DUE TO THE INTRODUCTION OF HANDS**  
While tightening, protect your hands to nor threshed that.

#### 4. INSTALLATION/HANDLING

Knowing the size and type of pipe to be connected, select the joint with the most suitable range.

Check the condition of the pipe ends to be connected, ensure that they are clean and free of any defects that may affect the gasket seal such as waste, cuts, burrs, etc.

The pipes should be placed within the aligned joint with each other and concentric with the ends.

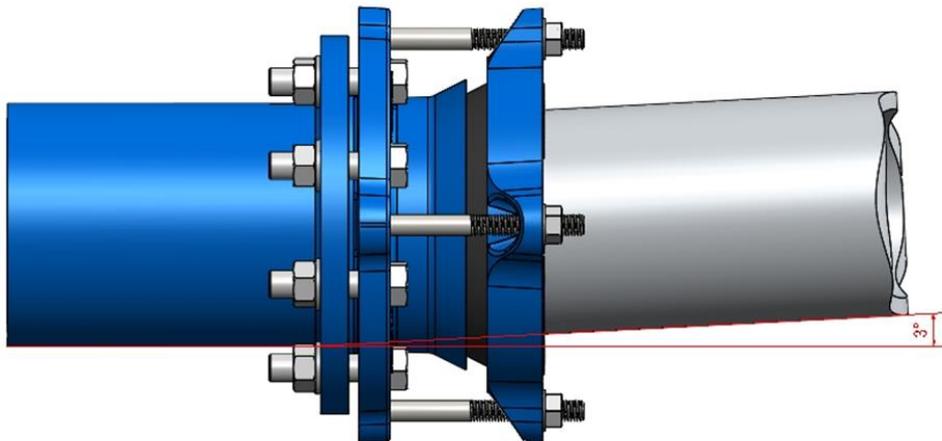
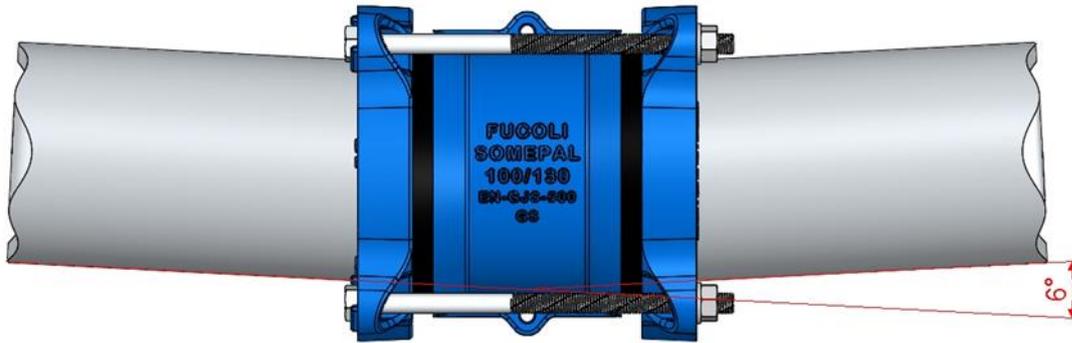


The tightening of the screws should be made in accordance with the torques on the below table, with the grip being made diametrically opposite to each other, giving each nut one or two turns at a time to ensure that the sealing system and fixing is tightened evenly.

REFERENCE	BOLT	BINARY (Nm)
25/55	M 12	60 – 80
39/69		
46/76		
48/78		
57/87		
63/93		
78/108		
87/117		
100/130		
108/138		
117/147		
129/159		
138/168		
152/182		
159/189		
172/202		
186/216		
198/228		
218/253		
245/280		
266/301		
297/332		
314/349		
343/378		
375/410		
396/431		
420/455		
457/492		
497/532		
525/560		
533/568		
575/610		
625/695		
710/745		
724/765		
810/845		
829/870		
934/975	M 20	160 - 200
1034/1075		
1219/1260		

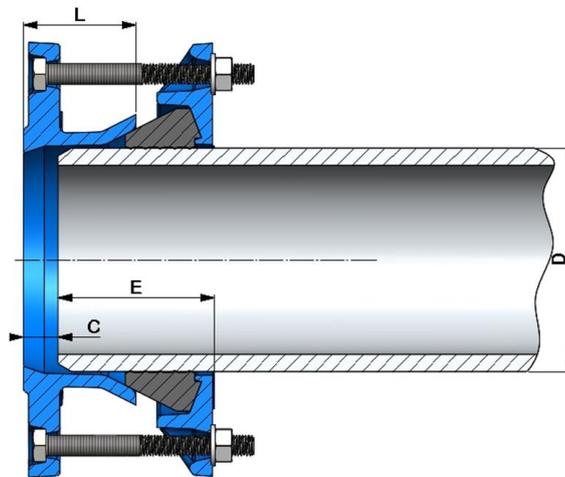
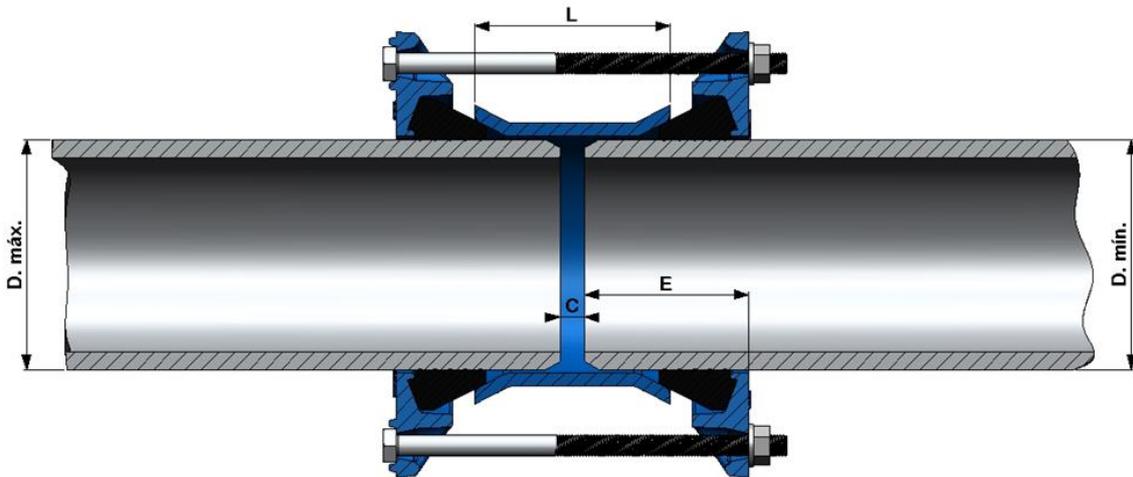
Pipe deflection angle:

The **MULTIMATERIAL COUPLINGS**, in addition to allowing the pipe coupling of different material and diameters, also allows a maximum deflection on the axis of symmetry, which may go up to  $6^\circ$  if the are assembled pipes of maximum diameter of the coupling.



To facilitate the installation shall be marked the minimum and maximum depths of the pipe ends in accordance with the amounts as shown in the table "E".

The pipes must be inserted into the coupling to a depth comprised between the minimum and maximum range as shown in the table.



D min./máx.	code	L	E		C	PVC (Ø ext. pipe)	ductile iron		steel (Ø ext. pipe)	class DN	fibrociment (Ø ext. pipe)				
			min.	min./m			DN	(Ø ext. pipe)			6	12	18	24	30
25/55	10900000	110	87	92	15	25 32 50	- - -	- - -	42.4 48.3	-	-	-	-	-	-
39/69	10900010	110	87	92	15	50 63	40 50	56 66	42.4 48.3 60.3	50	66	66	66	66	66
46/76	10900020	110	87	92	15	63 75	40 50	56 66	48.3 60.3	50 60	66 76	66 76	66 76	66 76	66 -
48/78	10900021	110	88	93	15	63 75	40 50 60	56 66 77	48.3 60.3 76.1	50 60	66 76	66 76	66 76	66 76	66 78
57/87	10900030	110	88	93	15	63 75	50 60 65	66 77 82	60.3 76.1	50 60	66 76	66 76	66 76	66 76	66 78
63/93	10900031	110	88	93	15	63 75 90	50 60 65	66 77 82	76.1 88.9	50 60	66 76	66 76	66 76	66 76	66 78
78/108	10900040	110	86	91	15	90	65 80	82 98	88.9 101.6	60 80	- 96	- 96	- 96	- 98	78 104
87/117	10900050	110	86	91	15	90 110	80	98	88.9 101.6 114.3	80 100	96 116	96 116	96 -	98 -	104 -
100/130	10900055	110	87	92	15	110 125	100	118	101.6 114.3	80 100	- 116	- 116	- 118	- 122	104 128
108/138	10900056	110	89	94	15	110 125	100	118	114.3	100	116	116	118	122	128
117/147	10900060	120	92	97	15	125 140	100 125	118 144	139.7	100 125	- 141	- 141	118 145	122 -	128 -
129/159	10900070	120	92	97	15	140	125	144	139.7	125	141	141	145	151	157
138/168	10900080	120	92	97	15	140 160	125	144	139.7	125 150	141 168	141 168	145 -	151 -	157 -
152/182	10900090	120	92	97	15	160 180	150	170	168.3 177.8	125 150	- 168	- 168	- 174	- 180	157 -
159/189	10900091	120	94	99	15	160 180	150	170	168.3 177.8	150	168	168	174	180	188
172/202	10900095	120	92	97	15	180 200	-	-	177.8 193.7	150	-	-	174	180	188
186/216	10900100	120	92	97	15	200	-	-	193.7	150	-	-	-	-	188
198/228	10900110	120	92	97	15	200 225	200	222	219.1	200	220	222	228	-	-
218/253	10900120	130	102	107	20	225 250	200	222	219.1 244.5	200	220	222	228	238	250
245/280	10900130	130	102	107	20	250 280	250	274	273	200 250	- 272	- 276	- -	- -	250 -
266/301	10900140	150	102	107	20	280	250	274	273	250	272	276	282	294	-
297/332	10900143	150	115	120	20	315	300	326	323.9	250 300	- 324	- 330	- -	- -	306 -
314/349	10900150	150	115	120	20	315	300	326	323.9	300	324	330	338	-	-
343/378	10900151	150	117	122	20	355	350	378	355.6	300 350	- 376	- -	- -	352 -	366 -
375/410	10900152	150	118	123	20	400	350	378	406.4	350	376	384	396	410	-
396/431	10900153	200	138	143	30	400	400	429	406.4	350 400	- 428	- -	- -	- -	426 -
420/455	10900154	200	144	149	30	-	400	429	-	400	-	438	452	-	-
449/484	10900163	200	144	149	30	-	450	480	457.0	400 450	- 482	- -	- -	470 -	488 -
457/492	10900155	200	144	149	30	-	450	480	457.0	400 450	- 482	- 492	- -	470 -	488 -
497/532	10900156	200	144	149	30	500	500	532	508	450	-	-	512	532	-
501/540	10900165	200	164	169	30	-	500	532	508	500	536	-	-	-	-
525/560	10900149	200	144	149	30	560	500	532	559	450 500	- 536	- 548	- -	- -	548 -
533/568	10900157	200	144	149	30	560	-	-	559	500	536	548	568	-	-
575/610	10900158	200	144	149	30	-	-	-	610	500	-	-	-	590	608
625/660	10900159	200	144	149	30	630	600	635	660	600	644	660	-	-	-
660/695	10900160	200	149	154	30	-	-	-	660	600	-	-	674	694	-
710/745	10900166	200	163	168	30	710	700	738	711.0	600	-	-	-	-	714
724/765	10900168	200	163	168	30	-	700	738	762.0	700	754	-	-	-	-
810/845	10900173	200	166	171	30	-	800	842	813.0	700	-	-	-	-	828
829/870	10900175	200	163	168	30	-	800	842	864.0	800	852	-	-	-	-
905/946	10900178	250	189	194	35	-	900	945	-	800	-	-	-	-	946
934/975	10900183	250	188	193	35	-	900	945	-	800 900	- 960	- -	- -	- -	946 -
1034/1075	10900189	250	188	193	35	-	1000	1048	1067.0	900 1000	- -	- -	- -	1050 1066	- -
1219/1260	10900191	250	188	193	35	-	1200	1255	1219.0	-	-	-	-	-	-

DN	D min./máx.	code		L	E		C	PVC	ductile iron		steel	fibrociment					
		PN 10	PN16		(Ø ext. pipe)	DN		(Ø ext. pipe)	(Ø ext. pipe)	class	(Ø ext. pipe)						
					min.	min./m						DN	6	12	18	24	30
40	25/55	10900200	10900200	65	87	92	15	25 32 50	- - -	- - -	42.4 48.3	-	-	-	-	-	-
50	39/69	10900201	10900201	65	87	92	15	50 63	40 50	56 66	42.4 48.3 60.3	50	66	66	66	66	66
50	46/76	10900202	10900202	65	87	92	15	63 75	40 50	56 66	48.3 60.3	50 60	66 76	66 76	66 76	66 76	66 -
60/65	57/87	10900203	10900203	65	88	93	15	63 75	50 60 65	66 77 82	60.3 76.1	50 60	66 76	66 76	66 76	66 76	66 78
80	78/108	10900204	10900204	65	86	91	15	90	65 80	82 98	88.9 101.6	60 80	- 96	- 96	- 96	- 98	- 104
80/100	87/117	10900209	10900209	65	86	91	15	90 110	80	98	88.9 101.6 114.3	80 100	96 116	96 116	96 -	98 -	104 -
100	87/117	10900205	10900205	65	86	91	15	90 110	80	98	88.9 101.6 114.3	80 100	96 116	96 116	96 -	98 -	104 -
100	100/130	10900206	10900206	65	87	92	15	110 125	100	118	101.6 114.3	80 100	- 116	- 116	- 118	- 122	104 128
100	108/138	10900211	10900211	65	89	94	15	110 125	100	118	114.3	100	116	116	118	122	128
125	117/147	10900207	10900207	70	92	97	15	125 140	100 125	118 144	139.7	100 125	- 141	- 141	118 145	122 -	128 -
125/150	129/159	10900208	10900208	70	92	97	15	140	125	144	139.7	125	141	141	145	151	157
150	152/182	10900210	10900210	75	92	97	15	160 180	150	170	168.3 177.8	125 150	- 168	- 168	- 174	- 180	- 157
200	186/216	10900212	10900212	75	92	97	15	200	-	-	193.7	150	-	-	-	-	188
200	198/228	10900213	10900213	75	92	97	15	200 225	200	222	219.1	200	220	222	228	-	-
250	245/280	10900215	10900215	85	102	107	20	250 280	250	274	273	200 250	- 272	- 276	- -	- -	250 -
250	266/301	10900216	10900216	90	102	107	20	280	250	274	273	250	272	276	282	294	-
300	314/349	10900217	10900217	90	115	120	20	315	300	326	323.9	300	324	330	338	-	-
350	343/378	10900218	10900218	90	117	122	20	355	350	378	355.6	300 350	- 376	- -	- -	352 -	366 -
350	375/410	10900219	10900219	127	118	123	20	400	350	378	406.4	350	376	384	396	410	-
400	396/431	10900221	10900222	127	138	143	30	400	400	429	406.4	350 400	- 428	- -	- -	- -	426 -
400	420/455	10900223	10900224	127	144	149	30	-	400	429	-	400	-	438	452	-	-
450	457/492	10900225	10900226	127	144	149	30	-	450	480	457.0	400 450	- 482	- 492	- -	470 -	488 -
500	497/532	10900227	10900228	127	144	149	30	500	500	532	508	450	-	-	512	532	-
500	533/568	10900229	10900230	127	144	149	30	560	-	-	559	500	536	548	568	-	-
600	625/660	10900233	10900234	130	144	149	30	630	600	635	660	600	644	660	-	-	-
700	710/745	10900239	10900240	160	163	168	30	710	700	738	711.0	600	-	-	-	-	714
800	810/845	10900241	10900242	160	166	171	30	-	800	842	813.0	700	-	-	-	-	828
900	934/975	10900235	10900236	160	188	193	35	-	900	945	-	800 900	- 960	- -	- -	- -	946 -
1000	1034/1075	10900243	10900244	160	188	193	35	-	1000	1048	1067.0	900 1000	- -	- -	- -	1050 1066	- -
1200	1219/1260	10900245	10900246	160	188	193	35	-	1200	1255	1219.0	-	-	-	-	-	-

## 5. MAINTENANCE

The **MULTIMATERIAL COUPLING** is maintenance free.

## 6. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	RESOLUTION
Lack of sealing	Lack of tightening screws	Tighten the bolts with the specified torque
	Seal damaged	Check the sealing condition and replace that if necessary
Is applied the indicated torques but continues to exist a lack of sealing	Gasket bad dimensioned	Check if the selected gasket is suitable for the material and if the outside diameter of the pipe is within the tolerance of the selected joint.