

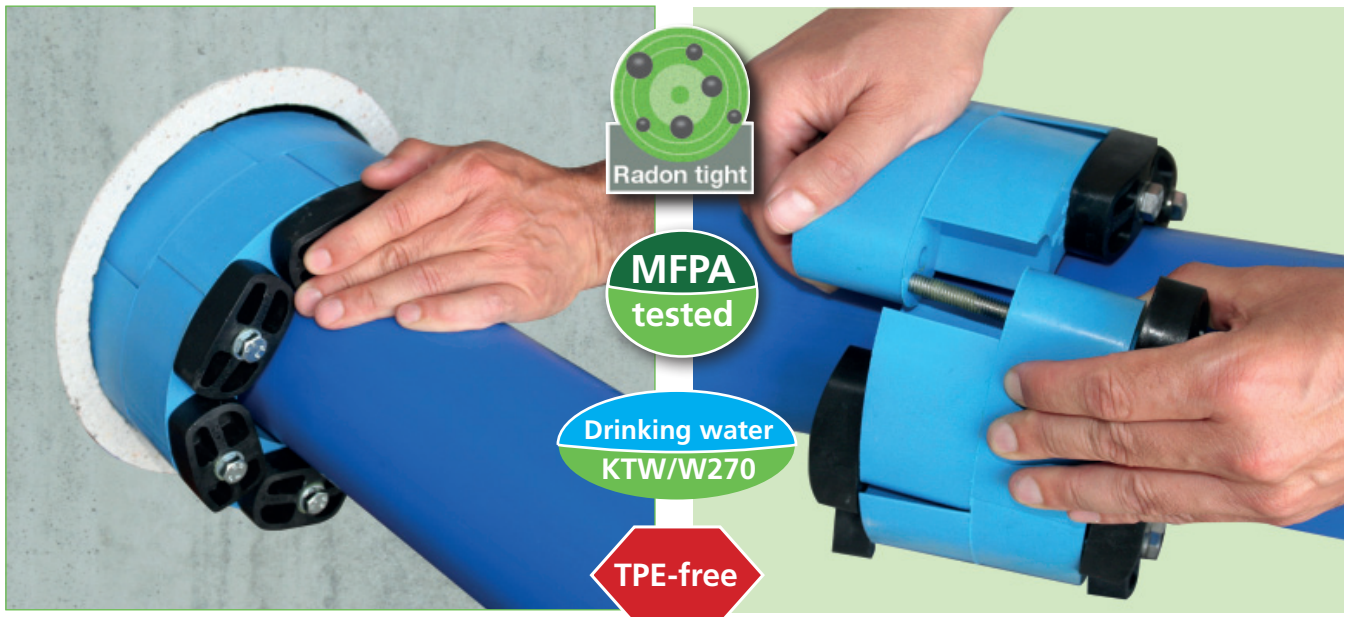


Pipeline Accessories

Pressio®-Elements
Modular Wall Penetration
Seals 4 pipes



Pressio®-Elements 4 pipes Modular Wall Penetration Seals



Pressio®-Elements modular wall penetration seals are an excellent choice to seal annular spaces between wall and pipe/cable securely so they are watertight and gas-tight.

Pressio®-Elements modular seals can be used flexibly because of their variable sizes for different combinations of wall sleeves/core holes and carrier pipes. These seals prevent leaks in case of gas and high external water pressure.

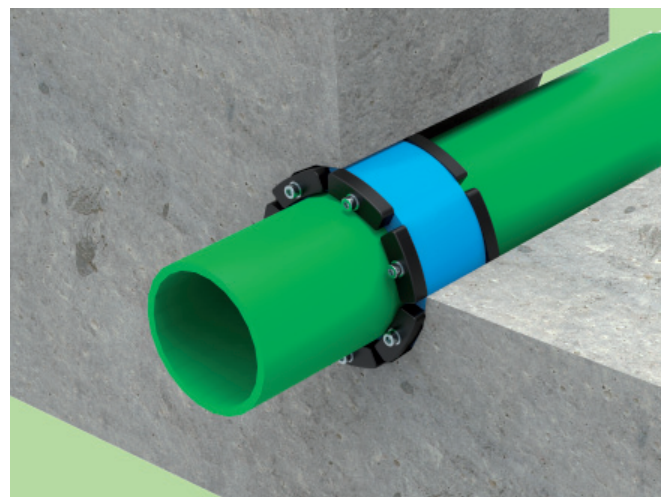
Application

By compressing the rubber between the polyamide pressure plates, a gas-tight and watertight closure of the annular space between the carrier pipe and the casing pipe can be achieved. Pressio®-Elements modular seals can always be **used for retrofit application**.

Pressio®-Elements modular wall penetration seals are not suitable for especially thin-walled plastic pipes (e.g. flexible preinsulated pipe). Here we recommend Pressio® Seals for district heating pipes.

Pressure rating and MFGA test

- Type C, S 316, OC, OS316, KTW/W270 and TS **up to 5.0 bar pressure tight**
- Type BC and BS 316: **up to 3.0 bar pressure tight**
- **Drinking water quality according to DVGW W270, Elastomer guideline of UBA / KTW - BWGL Declaration of Conformity**
- Radon tight, gas tight
- Fire class E acc. to EN13501-1 (formerly B2) normal flammability



To calculate the right Pressio®-Elements our calculation programme via our website <http://www.4pipes.de> is at your disposal.

More Advantages

- Made of high quality materials
- Fast mounting
- Retrofit application possible
- Applicable for various constructions
- Cost-efficient solution
- Fast delivery, standard versions in stock
- Different colours make the various rubber qualities easily distinguishable
- electrical isolation between pipe and sleeve
- noise protection
- anti vibration application
- Easy storage
- Radon tight, gas tight







The 4 pipes warranty only applies to faulty material. Checking the suitability of the product for the individual application is solely the responsibility of the user.



Pressio®-Elements 4 pipes Modular Wall Penetration Seals

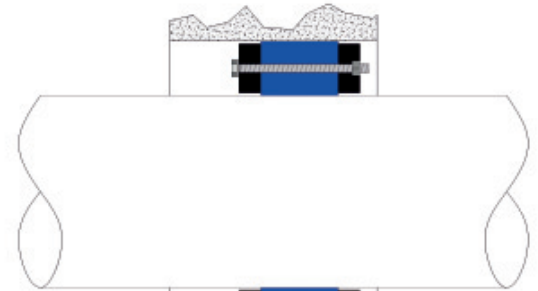
Product information

Pressio®-Elements 4 pipes are available in various material quality-combinations.

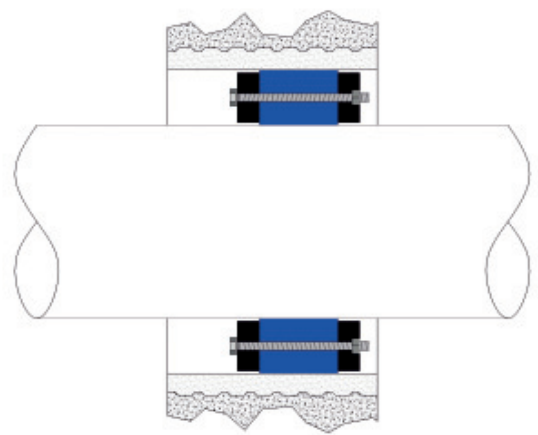
<p>Quality C and S316</p> 	<ul style="list-style-type: none"> • Type C: EPDM rubber black (50 ± 5 Shore A, standard rubber for cable, steel- and cast iron pipes), bolts galv., pressure plates polyamide 6-30, operation temperature: -40°C bis +80°C • Type S316: EPDM rubber black (50 ± 5 Shore A, standard rubber for cable, steel- and cast iron pipes), stainless steel bolts (V4A), pressure plates polyamide 6-30, operation temperature: -40°C up to +80°C Normal flammability MFPA tested Class E acc. to DIN EN 13501-1
<p>Quality BC and BS316</p> 	<ul style="list-style-type: none"> • Type BC: EPDM rubber blue (40 ± 5 Shore A, soft rubber especially suitable for plastic pipes), bolts galv., pressure plates polyamide 6-30, operation temperature: -40°C bis +80°C • Type BS316: EPDM rubber blue (40 ± 5 Shore A, soft rubber especially suitable for plastic pipes), stainless steel bolts (V4A), pressure plates polyamide 6-30, operation temperature: -40°C up to +80°C Normal flammability MFPA tested Class E acc. to DIN EN 13501-1
<p>Quality OC and OS316</p> 	<ul style="list-style-type: none"> • Type OC: Nitrile rubber green (50 ± 5 Shore A, nitrile rubber oil- and fuel resistant), bolts galv., pressure plates polyamide 6-30, Attention: rubber is not UV-resistant, operation temperature: -40°C up to +70°C • Type OS316: Nitrile rubber green (50 ± 5 Shore A, nitrile rubber oil- and fuel-resistant), stainless steel bolts (V4A), pressure plates polyamide 6-30, Attention: rubber is not UV-resistant, operation temperature: -40°C up to +70°C
<p>Quality KTW/W270</p> 	<ul style="list-style-type: none"> • Type KTW/W270: EPDM rubber black, (50 ± 5 Shore A, pressure plates and rubber approved acc. to KTW/W270 / VBA-BWGL) bolts and nuts made of V4A stainless steel, pressure plate fibreglass reinforced Polyamide white, operation temperature: -40°C up to +80°C 
<p>Quality TS</p> 	<ul style="list-style-type: none"> • Type TS: Silicone rubber grey (45 ± 5 Shore A, high temperature resistance) pressure plates V2A stainless steel, bolts V4A stainless steel operation temperature: -55°C up to +204°C

Examples for applications:

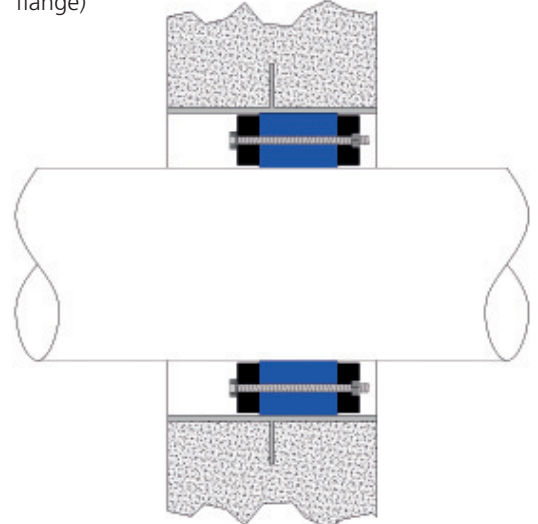
...in core drilled hole



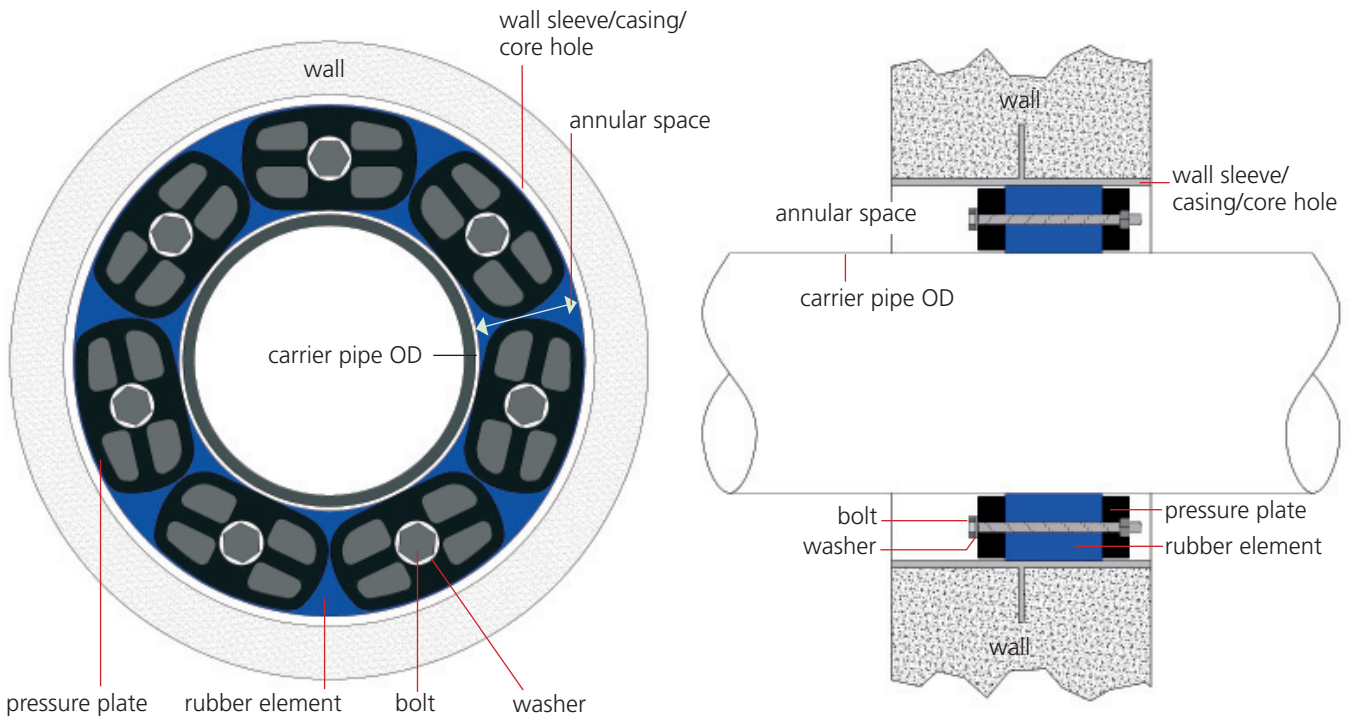
...in wall sleeve made of fibre cement



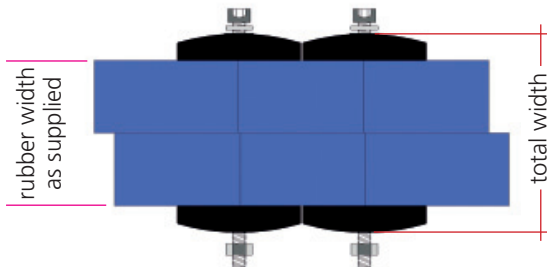
...in steel wall sleeve with puddle flange (anchor flange)



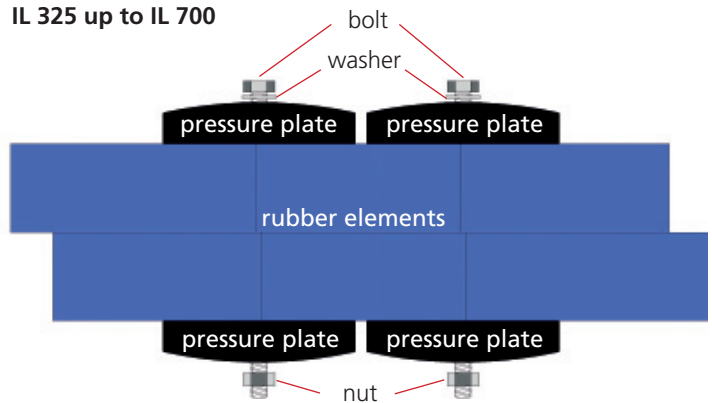
Pressio®-Elements 4 pipes Modular Wall Penetration Seals



IL 100 up to IL 315



IL 325 up to IL 700



IL 100 - IL 315 4 pipes - bolts with inner hex head
- solid pressure plates

IL 325 - IL 700 4 pipes - bolts with outer hex head
- profiled pressure plates



Pressio®-Elements 4 pipes Modular Wall Penetration Seals



Pressio®-Elements 4 pipes – Dimensions in mm

Pressio® Elem. Type	sealing range		arc length	carrier pipe		width of rubber part when delivered	total width when delivered	Minimum amount elements/ ring	min. wall thick- ness	bolt	Head of bolts	tool size
	min.	max.		min. Ø	max. Ø							
IL 100	9.0	12.5	31.0	25.0	219.0	45	60	4	60	M 4 x 60	Inner hexhead	3 mm
IL 200	12.5	15.7	30.0	21.3	323.9	45	63	4	63	M 5 x 70	Inner hexhead	4 mm
IL 265	16.0	20.0	41.0	50.0	406.4	45	63	5	63	M 5 x 70	Inner hexhead	4 mm
IL 275	16.0	20.0	25.6	0.0	90.0	45	63	4	63	M 5 x 70	Inner hexhead	4 mm
IL 300	18.0	22.5	41.0	44.5	273.0	65	90	5	90	M 6 x 90	Inner hexhead	5 mm
IL 310	18.0	22.5	57.0	60.3	406.4	65	90	5	90	M 6 x 90	Inner hexhead	5 mm
IL 315	21.1	26.0	38.4	37.0	323.9	65	90	5	90	M 6 x 90	Inner hexhead	5 mm
IL 325	23.2	30.0	79.0	133.0	711.0	65	100	6	100	M 6 x 100	Outer hexhead	10 mm
IL 340	25.5	34.0	41.4	30.0	323.9	65	100	4	100	M 6 x 100	Outer hexhead	10 mm
IL 360	32.0	42.0	55.1	40.0	406.4	65	100	5	100	M 6 x 100	Outer hexhead	10 mm
IL 400	36.0	46.0	93.1	139.7	1220.0	85	125	6	125	M 8 x 130	Outer hexhead	13 mm
IL 410	37.0	48.5	67.6	60.3	323.9	85	125	5	125	M 8 x 130	Outer hexhead	13 mm
IL 425	28.0	37.0	93.1	144.0	1220.0	85	125	6	125	M 8 x 130	Outer hexhead	13 mm
IL 440	44.0	55.0	99.0	139.7	1220.0	85	125	6	125	M 8 x 130	Outer hexhead	13 mm
IL 475	41.0	48.5	68.6	60.3	1220.0	85	125	5	125	M 8 x 130	Outer hexhead	13 mm
IL 500	60.0	71.5	99.8	100.0	1220.0	90	140	5	140	M 10 x 150	Outer hexhead	17 mm
IL 525	55.0	63.5	99.8	133.0	1220.0	90	140	6	140	M 10 x 150	Outer hexhead	17 mm
IL 575	48.0	58.0	79.3	88.9	1220.0	90	140	5	140	M 10 x 150	Outer hexhead	17 mm
IL 615	81.0	98.0	155.5	219.0	3000.0	100	165	6	165	M 12 x 180	Outer hexhead	19 mm
IL 625	81.0	98.0	106.7	88.9	2000.0	100	165	5	165	M 12 x 180	Outer hexhead	19 mm
IL 650	69.0	84.0	106.7	88.9	2000.0	100	165	5	165	M 12 x 180	Outer hexhead	19 mm
IL 700	95.0	110.0	155.5	219.0	3000.0	100	165	6	165	M 12 x 180	Outer hexhead	19 mm

All data in mm

Selecting the seal:

1. Annular Space Calculation

$$\frac{\text{casing pipe ID} - \text{carrier pipe OD}}{2} = \text{annular space}$$

Choose Pressio® Elements Type for annular space from table to calculate the right quantity.

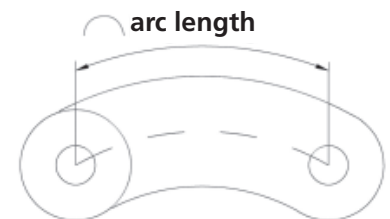
2. Quantity of Elements

$$\frac{\text{casing pipe ID} + \text{carrier pipe OD}}{2} \times 3,14 = \text{bolt circle} : \text{arc length} = \text{amount of elements}^*$$

*Mathematical rounding:

when... .49 round down to the nearest whole number of elements

when... .50 round up to the nearest whole number of elements



To calculate the right number of Pressio®-Elements there is also our calculation programme via our website www.4pipes.de at your disposal.

Pressio®-Elements-Set 4 pipes




Pressio®-Elements-Set preassembled to a ready-to-use ring, supplied in a box, perfect for keeping in stock.


Set features:

- Standard EPDM blue/soft
- Bolts stainless or carbon steel
- Separable for retrofit application
- Easy to select type required
- One carton per sealing ring
- Other sets on request
- We use brown carton for the sake of the environment

Corehole/ sleeve ID in mm	Pipe OD Ø _a (mm)		Quality BC galvanised bolts	Quality BS 316 stainless steel bolts
	min.	max.	Art.-No.	Art.-No.
50	1	18	09000	09100
	18	25	09001	09101
80	22	27	09010	09110
	40	48	09011	09111
100	32	45	09020	09120
	48	57	09021	09121
	55	64	09022	09122
125	42	61	09030	09130
	57	74	09031	09131
	80	89	09032	09132
150	53	76	09040	09140
	66	78	09041	09141
	82	99	09042	09142
	105	115	09043	09143
200	84	104	09050	09150
	103	117	09051	09151
	116	133	09052	09152
	132	149	09053	09153
	148	157	09054	09154
250	156	164	09055	09155
	107	129	09060	09160
	134	154	09061	09161
	153	163	09062	09162
	158	177	09063	09163
300	176	193	09064	09164
	184	204	09070	09170
	203	217	09071	09171
350	216	236	09072	09172
	207	229	09080	09180
	234	254	09081	09181
	253	274	09082	09182
	266	286	09083	09183

Pressio®-Elements 4 pipes Selection Guide for Core Drilled Holes

 Core hole mm ID	Carrier pipe OD in mm		Number of elements	Type IL...
	min.	max.		
50	10	18	4	275
	25	32	4	100
70	30	36	6	275
	39	45	6	200
	45	52	6	100
80	40	48	8	275
	49	55	7	200
	55	62	7	100
100	32	45	5	340
	48	57	6	315
	55	64	6	300
	62	68	6	265
	68	75	9	200
125	75	82	9	100
	42	61	5	360
	58	74	7	340
	73	82	8	315
	80	89	8	300
	87	93	8	265
	95	100	12	200
150	100	107	12	100
	58	76	5	410
	66	82	6	360
	82	99	9	340
	105	114	7	310
	112	118	10	265
	118	125	14	200
	125	132	14	100
200	90	104	6	575
	103	117	7	475
	103	124	7	410
	116	133	9	360
	132	149	13	340
	155	164	10	310
250	134	154	8	575
	140	160	6	440
	153	163	9	475
	158	177	7	400
	166	186	12	360
	178	192	7	425
	190	203	9	325
	206	212	12	310
300	157	173	7	500
	184	204	10	575
	190	210	8	440
	208	226	12	410
	216	236	15	360
	234	244	20	340
	240	253	11	325
	255	264	15	310

 Core hole mm ID	Carrier pipe OD in mm		Number of elements	Type IL...	
	min.	max.			
350	182	210	8	650	
	207	229	9	500	
	223	239	9	525	
	234	254	12	575	
	253	267	14	475	
	253	274	14	410	
	266	286	18	360	
	258	274	10	400	
	276	293	11	425	
	286	296	24	340	
	294	303	13	325	
	307	314	18	310	
	400	204	234	9	625
		234	255	9	650
264		279	10	500	
273		289	11	525	
284		304	14	575	
292		310	11	440	
303		317	16	475	
308		327	12	400	
326		341	12	425	
340		353	15	325	
450	235	256	7	700	
	254	265	10	625	
	266	286	7	615	
	285	311	11	650	
	307	329	12	500	
	327	339	12	525	
	335	354	16	575	
	345	356	13	440	
	355	367	19	475	
	358	377	14	400	
	376	393	14	425	
	375	386	24	360	
	390	403	17	325	
	500	285	306	8	700
304		334	12	625	
335		359	12	650	
357		379	14	500	
373		389	14	525	
385		400	18	575	
390		410	14	440	
408		427	15	400	
426		443	16	425	
440		453	19	325	
600	385	406	10	700	
	404	434	15	625	
	436	457	15	650	
	457	479	17	500	
	473	489	17	525	
	490	503	17	440	
	503	509	25	475	
	508	527	19	400	
	526	543	19	425	
	540	553	23	325	

For more combinations see our calculation program

Pressio®-Elements 4 pipes Selection Guide for Pipe OD



Selection guide for steel and stainless steel pipes acc. DIN 2448 / 2458

carrier pipe OD Ø DN	mm	core drilled hole recomm. ID Ø mm	tolerance	wall sleeve fibre cement ID Ø mm	wall sleeve PVC ID Ø mm	wall sleeve steel ID Ø mm				core hole mm		Pressio® Elements number of elements	Type
						Ø a	x	s	Ø i	min.	max.		
10	17.2	50	-1/+6	-	50	-	x	-	-	49.2	56	4	IL 275
15	21.3	50	-0/+2	-	50	-	x	-	-	50.3	52.7	4	IL 200
20	26.9	50	-2/+2	-	50	-	x	-	-	48.1	51.9	4	IL 100
	26.9	80	-2/+10	80	80	88.9	x	2	84.9	77.9	90	4	IL 340
25	33.7	60	-1/+5	-	60	63.5	x	2	59.5	59.7	65.1	5	IL 200
	33.7	70	-4/+2	-	70	-	x	-	-	65.7	72	6	IL 275
32	42.4	80	-0/+2	80	80	-	x	-	-	80.6	82.4	8	IL 275
	42.4	100	-6/+2	100	100	101.6	x	2	97.6	93.4	102	5	IL 340
40	48.3	70	-2/+3	-	70	-	x	-	-	67.8	73.3	6	IL 100
	48.3	100	-6/+0	100	100	101.6	x	2	97.6	93.8	100	6	IL 315
	48.3	125	-6/+5	125	125	133.0	x	2	129.0	119.2	132.3	5	IL 360
50	60.3	80	-1/+5	80	80	88.9	x	2	84.9	78.3	85.3	7	IL 100
	60.3	100	-4/+5	100	100	101.6	x	2	97.6	96.3	105	6	IL 300
	60.3	125	-0/+8	125	125	133.0	x	2	129.0	124.3	133.8	5	IL 360
65	76.1	100	-2/+1	100	100	101.6	x	2	97.6	97.4	101.1	9	IL 100
	76.1	125	-6/+3	125	125	-	x	-	-	118.3	128.1	8	IL 315
80	76.1	150	-9/+5	150	150	-	x	-	-	140.1	155	6	IL 360
	88.9	125	-4/+3	125	125	-	x	-	-	120.9	128.9	8	IL 265
	88.9	125	-0/+8	125	125	133.0	x	2	129.0	125.0	133	8	IL 300
100	88.9	150	-6/+6	150	150	-	x	-	-	143.6	156.9	9	IL 340
	114.3	150	-4/+4	150	150	159.0	x	4.5	150.0	146.3	154.3	10	IL 265
	114.3	150	-0/+9	150	150	159.0	x	4.5	150.0	150.0	159	7	IL 310
125	114.3	200	-3/+11	200	200	-	x	-	-	196.3	211	7	IL 475
	114.3	225	-2/+5	-	-	-	x	-	-	222.7	230.3	7	IL 575
	139.7	200	-3/+7	200	200	-	x	-	-	196.3	207.7	13	IL 340
	139.7	210	-4/+13	-	-	219.1	x	3	213.1	206.9	223.7	10	IL 360
	139.7	225	-3/+11	-	-	-	x	-	-	221.7	236.7	8	IL 475
150	139.7	250	-2/+5	250	250	256.0	x	3	250.0	247.9	255.7	8	IL 575
	139.7	300	-22/+4	300	300	-	x	-	-	277.7	304	6	IL 650
	168.3	210	-5/+3	-	-	219.1	x	3	213.1	205.0	213.3	10	IL 310
	168.3	225	-3/+10	-	-	-	x	-	-	222.7	236.3	15	IL 340
200	168.3	250	-8/+10	250	250	256.0	x	3	250.0	242.4	260.3	7	IL 400
	168.3	300	-11/+10	300	300	298.5	x	3	292.5	288.3	310	7	IL 500
	219.1	260	-4/+4	-	-	-	x	-	-	256.0	264.1	13	IL 310
	219.1	300	-5/+14	300	300	-	x	-	-	294.5	316.1	12	IL 410
250	219.1	350	-8/+11	350	-	355.6	x	3	349.6	343.1	362.1	9	IL 500
	219.1	400	-12/+17	400	-	406.4	x	4	398.4	388.0	417	9	IL 625
	273	310	-0/+8	-	-	323.9	x	3	317.9	309.0	318	16	IL 310
	273	340	-3/+6	-	-	-	x	-	-	337.0	346	17	IL 360
300	273	350	-3/+5	350	-	355.6	x	3	349.6	347.0	354	14	IL 410
	273	400	-6/+5	400	-	406.4	x	4	398.4	393.0	405	10	IL 500
	273	450	-12/+16	-	-	457.0	x	4	449.0	435.0	466	7	IL 615
	323.9	400	-3/+13	400	-	419.0	x	4	411.0	395.9	415	12	IL 400
350	323.9	400	-11/+6	400	-	406.4	x	4	398.4	387.9	407.9	20	IL 360
	323.9	450	-6/+13	-	-	457.0	x	4	449.0	443.9	463	12	IL 500
	323.9	500	-10/+15	500	-	508.0	x	4	500.0	490.0	515	12	IL 625
	355.6	400	-1/+7	400	-	-	x	-	-	399.4	407.6	31	IL 315
400	355.6	450	-10/+2	-	-	457.0	x	4	449.0	437.6	452	18	IL 475
	355.6	490	-14/+8	-	-	488.0	x	4	480.0	475.6	498.6	13	IL 500
	355.6	500	-6/+5	500	-	508.0	x	4	500.0	493.6	505	12	IL 650
	355.6	550	-4/+25	-	-	559.0	x	6,3	546.4	545.6	575.6	9	IL 700
450	406.4	500	-5/+10	500	-	508.0	x	4	500.0	495.0	510	14	IL 440
	406.4	550	-5/+15	-	-	559.0	x	4	551.0	544.4	565	14	IL 650
	406.4	600	-3/+26	600	-	610.0	x	5	600.0	596.4	626.4	10	IL 700
500	457	510	-6/+7	-	-	-	x	-	-	503.4	517	19	IL 325
	457	550	-4/+17	-	-	559.0	x	4	551.0	546.0	567	16	IL 440
	457	600	-5/+5	600	-	610.0	x	5	600.0	595.0	605	15	IL 650
	457	650	-24/+5	-	-	660.0	x	5	650.0	626.0	655	16	IL 625
550	508	560	-5/+8	-	-	-	x	-	-	554.4	568	21	IL 325
	508	600	-3/+10	600	-	610.0	x	5	600.0	597.0	610	17	IL 440
	508	650	-4/+10	-	-	660.0	x	5	650.0	646.0	660	17	IL 650
	508	700	-6/+6	700	-	711.0	x	5	701.0	694.0	704	18	IL 625
600	559	610	-4/+9	-	-	-	x	-	-	605.4	619	23	IL 325
	559	650	-3/+19	-	-	660.0	x	5	650.0	647.0	669	19	IL 440
	559	700	-3/+10	700	-	711.0	x	5	701.0	697.0	710	18	IL 650
	559	750	-22/+7	-	-	762.0	x	5	752.0	724.3	755	19	IL 625
650	610	660	-3/+10	-	-	-	x	-	-	656.4	670	25	IL 325
	610	700	-7/+7	700	-	711.0	x	5	701.0	694.8	707	30	IL 475
	610	750	-1/+28	-	-	762.0	x	5	752.0	748.0	778	20	IL 650
	610	800	-4/+8	800	-	813.0	x	5	803.0	792.2	806	21	IL 625

For more combinations see our calculation program

Pressio®-Elements 4 pipes Selection Guide for Pipe OD



Selection guide for steel pipes acc. DIN 2448 / 2458 with PE-coating (standard) acc. DIN 30670

carrier pipe OD Ø	core drilled hole recomm. ID Ø mm	tolerance	wall sleeve fibre cement ID Ø mm	wall sleeve PVC ID Ø mm	wall sleeve steel ID Ø mm				core hole mm		Pressio® Elements number of elements	Type	
					Ø a	x	s	Ø i	min.	max.			
10	20.8	50	-0/+2	-	50	-	x	-	-	50.3	52.2	4	IL 200
15	24.9	50	-0/+6	-	50	-	x	-	-	50.3	56.3	4	IL 200
	24.9	60	-3/+3	-	60	63.5	x	2.3	58.9	56.9	63.5	5	IL 275
20	30.5	50	-1/+5	-	50	-	x	-	-	48.5	55.5	4	IL 100
	30.5	60	-1/+2	-	60	63.5	x	2.3	58.9	59.8	61.9	5	IL 200
25	37.3	100	-9/+5	100	100	101.6	x	2.9	95.8	90.9	105.3	5	IL 340
32	46.0	70	-2/+1	-	70	76.1	x	2.6	70.9	67.8	71	6	IL 100
	46.0	80	-1/+6	80	80	88.9	x	2.9	83.1	80.6	86	8	IL 275
	46.0	100	-3/+6	100	100	108.0	x	2.9	102.2	97.0	114	5	IL 340
40	51.9	70	-0/+6	-	70	76.1	x	2.6	70.9	69.9	76.9	6	IL 100
	51.9	80	-1/+3	80	80	88.9	x	2.9	83.1	78.9	83.3	7	IL 200
	51.9	100	-5/+3	100	100	101.6	x	2.9	95.8	94.1	103.9	6	IL 315
50	51.9	125	-6/+9	125	125	133.0	x	3.6	125.8	119.2	135.9	5	IL 360
	63.9	100	-1/+5	100	100	108.0	x	2.9	102.2	99.9	105	6	IL 300
	63.9	125	-8/+6	125	125	133.0	x	3.6	125.8	117.2	131.9	7	IL 340
65	63.9	150	-7/+8	150	150	159.0	x	4.0	151.0	143.9	160.9	5	IL 410
	79.7	100	-2/+4	100	100	108.0	x	2.9	102.2	97.7	104.7	9	IL 100
	79.7	125	-6/+5	125	125	133.0	x	3.6	125.8	121.9	130	8	IL 315
80	79.7	150	-5/+5	150	150	159.0	x	4.0	151.0	143.7	163.7	6	IL 360
	92.5	125	-0/+7	125	125	133.0	x	3.6	125.8	125.0	132	8	IL 265
	92.5	150	-6/+9	150	150	159.0	x	4.0	151.0	143.6	157.5	9	IL 340
100	117.9	150	-0/+6	150	150	159.0	x	4.0	151.0	149.9	156	10	IL 265
	117.9	160	-0/+2	-	-	168.3	x	4.0	160.3	160.0	162	11	IL 300
	117.9	200	-8/+11	200	200	219.1	x	4.5	210.1	191.9	206.5	7	IL 410
	117.9	225	-2/+8	-	-	244.5	x	6.3	231.9	222.7	233.9	7	IL 575
125	143.7	200	-4/+11	200	200	-	x	-	-	196.3	211.7	13	IL 340
	143.7	210	-2/+11	-	-	219.1	x	4.5	210.1	207.7	227.7	10	IL 360
	143.7	225	-8/+10	-	-	244.5	x	6.3	231.9	215.7	235.7	6	IL 400
	143.7	250	-2/+9	250	250	267.0	x	6.3	254.4	247.9	259.7	8	IL 575
150	143.7	300	-18/+3	300	300	-	x	-	-	281.7	303	6	IL 650
	172.3	210	-1/+5	-	-	219.1	x	4.5	210.1	209.0	215	10	IL 310
	172.3	225	-1/+14	-	-	244.5	x	6.3	231.9	223.3	236	15	IL 340
	172.3	250	-5/+14	250	250	267.0	x	6.3	254.4	244.3	264.3	7	IL 400
	172.3	300	-7/+5	300	300	-	x	-	-	292.3	305	7	IL 500
200	172.3	320	-9/+10	-	-	323.9	x	5.6	312.7	310.3	330	7	IL 650
	223.1	260	-0/+8	-	-	273.0	x	5.0	263.0	259.1	268.1	13	IL 310
	223.1	300	-3/+17	300	300	323.9	x	5.6	312.7	297.1	320.1	12	IL 410
	223.1	350	-6/+15	350	-	355.6	x	5.6	344.4	343.1	366.1	9	IL 500
	223.1	400	-10/+20	400	-	406.4	x	6.3	393.8	390.0	420	9	IL 625
250	277.0	330	-4/+7	-	-	-	x	-	-	324.0	337	12	IL 325
	277.0	340	-6/+8	-	-	355.6	x	5.6	344.4	333.0	351	10	IL 425
	277.0	350	-3/+11	350	-	368.0	x	8.0	352.0	347.2	361	18	IL 360
	277.0	380	-5/+13	-	-	-	x	-	-	374.1	393	13	IL 575
	277.0	400	-1/+4	400	-	419.0	x	10.0	399.0	401.8	404	11	IL 525
300	277.0	450	-10/+12	-	-	457.0	x	6.3	444.4	439.0	462	7	IL 615
	328.3	400	-8/+5	400	-	406.4	x	6.3	393.8	392.3	405	20	IL 360
	328.3	410	-7/+15	-	-	-	x	-	-	402.3	425.3	17	IL 410
	328.3	450	-11/+5	-	-	457.0	x	6.3	444.4	438.3	455.3	12	IL 525
	328.3	500	-5/+20	500	-	508.0	x	6.3	495.4	490.3	520	12	IL 625
350	360.0	410	-4/+10	-	-	-	x	-	-	406.4	420	15	IL 325
	360.0	450	-7/+5	-	-	457.0	x	6.3	444.4	442.0	455	18	IL 475
	360.0	490	-9/+6	-	-	508.0	x	6.3	495.4	480.0	496	13	IL 500
	360.0	550	-24/+8	-	-	559.0	x	6.3	546.4	522.0	558	13	IL 625
400	410.8	460	-2/+10	-	-	-	x	-	-	457.2	470.8	17	IL 325
	410.8	500	-5/+7	500	-	508.0	x	6.3	495.4	495.0	507.8	21	IL 475
	410.8	550	-18/+3	-	-	559.0	x	6.3	546.4	533.7	553.8	15	IL 500
	410.8	600	-8/+8	600	-	610.0	x	6.3	597.4	592.0	608	15	IL 625
450	461.4	510	-2/+11	-	-	-	x	-	-	507.8	521.4	19	IL 325
	461.4	550	-6/+5	-	-	559.0	x	6.3	546.4	543.4	555.5	23	IL 475
	461.4	600	-7/+4	600	-	610.0	x	6.3	597.4	597.2	604.4	17	IL 500
	461.4	650	-22/+9	-	-	660.0	x	7.1	645.8	623.4	657.4	16	IL 625
500	513.0	560	-0/+13	-	-	-	x	-	-	559.4	573	21	IL 325
	513.0	600	-5/+5	600	-	610.0	x	6.3	597.4	595.0	605	25	IL 475
	513.0	650	-17/+2	-	-	660.0	x	7.1	645.8	633.0	652.5	18	IL 500
	513.0	700	-6/+11	700	-	711.0	x	7.1	696.8	694.0	709	18	IL 625
550	564.0	620	-9/+4	-	-	-	x	-	-	610.4	624	23	IL 325
	564.0	640	-3/+10	-	-	660.0	x	7.1	645.8	636.0	650	20	IL 400
	564.0	650	-2/+11	-	-	-	x	-	-	651.1	661	28	IL 475
	564.0	700	-12/+7	700	-	711.0	x	7.1	696.8	692.5	707	20	IL 500
	564.0	750	-20/+12	-	-	762.0	x	8.0	746.0	726.0	762	19	IL 625
600	615.0	700	-12/+7	700	-	711.0	x	7.1	696.8	687.0	707	22	IL 400
	615.0	750	-14/+5	-	-	762.0	x	8.0	746.0	735.0	755	21	IL 500
	615.0	800	-4/+13	800	-	813.0	x	8.0	797.0	792.2	813	21	IL 625

For more combinations see our calculation program

Pressio®-Elements 4 pipes Selection Guide for Pipe OD

Selection guide for ductile iron pipes (GGG) acc. to EN 545, EN 598

carrier pipe OD Ø DN	mm	core drilled hole recomm. ID Ø mm	tolerance	wall sleeve fibre cement ID Ø mm	wall sleeve PVC ID Ø mm	wall sleeve steel ID Ø mm				core hole mm		Pressio® Elements number of elements	Type
						Ø a	x	s	Ø i	min.	max.		
80	98	140	-5/+3	-	-	-	x	-	-	134.9	143	9	IL 300
	98	150	-1/+4	150	150	159.0	x	4.0	151.0	149.0	154	9	IL 340
100	118	150	-0/+6	150	150	159.0	x	4.0	151.0	150.0	156	10	IL 265
	118	160	-0/+3	-	-	168.3	x	4.0	160.3	161.0	163	11	IL 300
	118	200	-8/+4	200	200	-	x	-	-	192.0	204	7	IL 410
	118	225	-2/+9	-	-	244.5	x	6.3	231.9	222.7	234	7	IL 575
125	144	200	-4/+12	200	200	219.1	x	4.5	210.1	196.3	212	13	IL 340
	144	210	-2/+18	-	-	219.1	x	4.5	210.1	208.0	228	10	IL 360
	144	225	-8/+11	-	-	244.5	x	6.3	231.9	216.0	236	6	IL 400
	144	250	-2/+10	250	250	267.0	x	6.3	254.4	247.9	260	8	IL 575
150	170	210	-4/+5	-	-	219.1	x	4.5	210.1	206.0	215	10	IL 310
	170	225	-3/+13	-	-	244.5	x	6.3	231.9	222.7	238	15	IL 340
	170	250	-7/+12	250	250	267.0	x	6.3	254.4	242.4	262	7	IL 400
	170	300	-9/+5	300	300	-	x	-	-	290.0	305	7	IL 500
200	222	260	-2/+7	-	-	273.0	x	5.0	263.0	258.0	267	13	IL 310
	222	300	-4/+19	300	300	323.9	x	5.6	312.7	296.0	319	12	IL 410
	222	350	-7/+15	350	-	355.6	x	5.6	344.4	343.1	365	9	IL 500
	222	400	-11/+20	400	-	406.4	x	6.3	393.8	384.7	420	9	IL 625
250	274	315	-5/+4	-	-	323.9	x	5.6	312.7	310.0	319	16	IL 310
	274	340	-6/+4	-	-	355.6	x	5.6	344.4	338.0	346	17	IL 360
	274	350	-2/+5	350	-	368.0	x	8.0	352.0	348.0	355	14	IL 410
	274	400	-5/+5	400	-	419.0	x	10.0	399.0	394.0	405	10	IL 500
	274	450	-12/+16	-	-	457.0	x	6.3	444.4	436.0	466	7	IL 615
300	326	380	-4/+6	-	-	-	x	-	-	374.3	386	14	IL 325
	326	400	-1/+15	400	-	419.0	x	10.0	399.0	398.0	415	12	IL 400
	326	450	-13/+3	-	-	457.0	x	6.3	444.4	436.0	453	12	IL 525
	326	500	-8/+15	500	-	508.0	x	6.3	495.4	488.0	515	12	IL 625
350	378	450	-8/+2	-	-	457.0	x	6.3	444.4	442.0	452	23	IL 360
	378	500	-1/+21	500	-	-	x	-	-	501.9	521	14	IL 500
	378	500	-6/+5	500	-	508.0	x	6.3	495.4	497.1	505	14	IL 525
	378	550	-8/+10	-	-	559.0	x	6.3	546.4	540.0	560	9	IL 615
400	429	480	-3/+9	-	-	-	x	-	-	477.0	489	18	IL 325
	429	500	-0/+7	500	-	-	x	-	-	500.0	507	16	IL 425
	429	510	-1/+11	-	-	-	x	-	-	509.2	521	16	IL 400
	429	540	-1/+10	-	-	559.0	x	6.3	546.4	539.0	550	15	IL 525
	429	550	-1/+5	-	-	-	x	-	-	549.0	555	15	IL 500
	429	600	-5/+20	600	-	610.0	x	6.3	597.4	591.0	620	15	IL 625
500	532	600	-10/+6	600	-	610.0	x	6.3	597.4	590.1	606	19	IL 425
	532	610	-5/+14	-	-	-	x	-	-	604.0	624	19	IL 400
	532	640	-12/+8	-	-	660.0	x	7.1	645.8	628.0	648	23	IL 575
	532	650	-0/+9	-	-	-	x	-	-	650.0	659	19	IL 525
	532	700	-2/+25	700	-	-	x	-	-	694.0	725	18	IL 625
600	635	700	-8/+5	700	-	711.0	x	7.1	696.8	691.0	705	22	IL 425
	635	750	-5/+12	-	-	762.0	x	8.0	746.0	751.3	762	22	IL 525
	635	800	-3/+20	-	-	-	x	-	-	797.0	820	21	IL 625

For more combinations see our calculation program

The 4 pipes warranty only applies to faulty material. Checking the suitability of the product for the individual application is solely the responsibility of the user.

Pressio®-Elements Modular Wall Penetration Seals 4 pipes



Please consider the following points before installation:

- Carrier pipe must be **centred and supported**, especially before back filling. Pressio®-Elements seals cannot provide any load-bearing function and are not a fixed point.
- Core holes can be coated with epoxy resin 4 pipes to protect the concrete surface and reinforcing steel. The coating can also smoothen over any cavities and grooves.
- Remove dirt** and impurities from carrier pipe and core bore / wall sleeve.
- It is not possible to seal a spiral-wave pipe in this way.



Attention! Only for type KTW/W270:

Use the supplied lubricant on the inside and outside surfaces of each joint, as well as the connected ends, so the elements can glide.



1. **Connect ends of the Pressio®-Elements and adjust pressure plates.** All bolt heads have to face out towards the installation technician.



Installation video



2. It is possible that a chain could slightly sag. **Elements must not be removed from the chain.** The correct number of elements has to be installed as specified. It can be necessary to stretch the chain for smaller pipe diameters.



3. Push Pressio®-Elements **into the annular space.** Begin to push in the seal first at 6 o'clock position, then right and left up to the 12 o'clock position. The bolt heads should still be easily accessible after positioning in the wall.



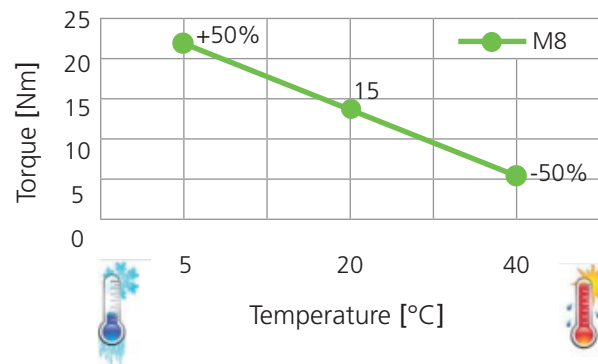
4. Tighten the bolts with a **torque wrench**, beginning at the 12 o'clock position. Do not tighten with a power tool! Tighten each bolt with about 4 to 5 turns. Repeat in **clockwise direction** until the noted torque (see table) is reached and the rubber is squeezed out evenly between the pressure plates.



5. **Tighten the bolts again after about 2 hours**, in accordance with the torque table below. Repeat this procedure several times depending on on-site conditions (e.g. temperatures < 10°C, larger annual space etc.). This is important, especially for IL 500 and larger.

Torque Table			
Type		Type: C, S 316, OC, OS 316, KTW/W270 and TS	Type: BC and BS 316
IL 100	M4	1 Nm	1 Nm
IL 200 up to IL 275	M5	1.5 Nm	1 Nm
IL 300 up to IL 360	M6	5 Nm	4 Nm
IL 400 up to IL 475	M8	15 Nm	12 Nm
IL 500 up to IL 575	M10	30 Nm	22 Nm
IL 615 up to IL 700	M12	60 Nm	48 Nm

e.g. Tightening torque depending on the temperature



To select the right Pressio®-Elements and calculate how many you need for your project, please refer to the calculation program on our website: www.4pipes.de