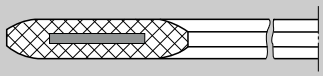
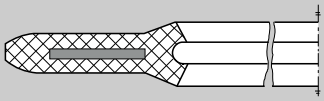
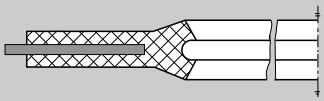
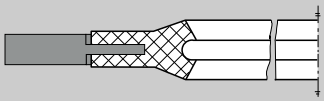
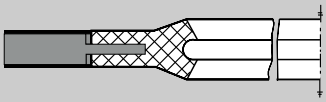
Rubber-steel gaskets

Rubber-steel gaskets have amassed a wide range of applications in sealing technology. Wherever the secure sealing of media with an exceptionally low leak rate, as well as low bolt loads at relatively low temperatures is required, rubber-steel gaskets provide the optimal solution.

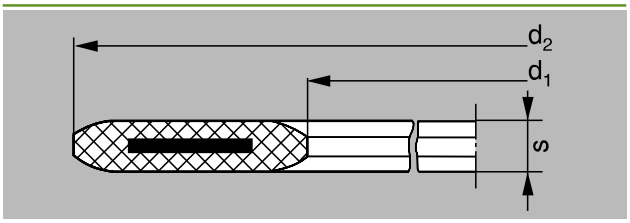
The steel support ring prevents a blow out of the gasket and increases stability, allowing the rubber-steel gasket to be handled easily, even in difficult fitting conditions.

The rubber sealing material ensures a secure seal is created, even in uneven locations, as it has an excellent ability to adapt to sealing surfaces. In conforming to the maximum allowable installation surface pressure, rubber-steel gaskets fulfil the requirements of the TA Luft having regard to clause 3.3.1.4 of the VDI Guidelines 2440.

Gasket profiles

Profile	Cross-section
WG	
WG2	
WS	
WL	
WL-HT	

Rubber-steel gaskets



Rubber-steel gaskets Profile WG

Main load gasket

The rubber-steel gasket Profile WG consists of a steel ring (1.0330) which is surrounded on all sides by rubber. The steel ring is therefore protected from corrosion and media. Vulcanisation guarantees a high level of adhesive strength between the rubber and the steel ring.

EN 1514-1 flanges to EN 1092-1

For DIN/EN flanges

DN	d_1	d_2 PN6	PN10	PN16	PN25	PN40	s
15	22	-	51	51	51	51	3
20	27	-	61	61	61	61	3
25	34	-	71	71	71	71	3
32	43	-	82	82	82	82	3
40	49	-	92	92	92	92	3
50	61	-	107	107	107	107	4
65	77	-	127	127	127	127	4
80	89	-	142	142	142	142	4
100	115	-	162	162	168	168	5
125	141	-	192	192	-	-	5
150	169	-	218	218	224	224	5
175	195	-	248	248	-	-	5
200	220	-	273	273	284	-	6
250	273	-	328	329	340	-	6
300	324	-	378	384	400	417	6
350	356	423	438	444	457	474	7
400	407	473	489	495	517	-	7
450	458	-	539	-	-	-	7
500	508	578	594	617	-	-	7
600	610	-	695	734	-	-	7
700	712	785	810	-	-	-	8
800	813	890	917	911	-	-	8
900	915	-	1017	1011	-	-	8
1000	1016	-	1124	1128	-	-	8
1200	1220	-	1341	1342	-	-	8
1400	1422	-	1548	1542	-	-	8
1600	1620	-	1772	1754	-	-	8
1800	1820	-	1972	1964	-	-	8

Dimensions in mm

Features:

- high level of security against slippage or blow out provided by the steel reinforcement
- simple, secure and cost-effective installation due to its stability, compared to non-reinforced rubber gaskets
- exceptionally low leakage rate due to the homogeneous rubber casing, making it particularly suitable for pipeline systems carrying media harmful to the environment
- low demand on the flange surface due to the soft, flexible sealing surface, seals can even be created with slightly damaged flanges

Typical field of application:

- Gas and water supply
- chemical industries where aggressive and environmentally-harmful media are used
- flue gas cleaning systems and power plant cooling circuits
- wastewater systems
- pipeline construction with vacuum-operated pipelines
- pipeline systems with all-rubber flange sealing surfaces
- with enamel pipelines and apparatus flanges.

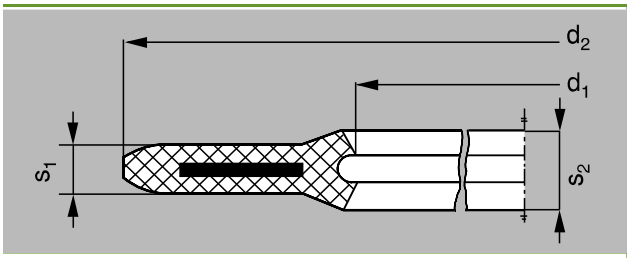
For ANSI/ASME B16.5 flanges*

NPS	d_1	d_2 class 150	class 300	s
½	18	46	-	3
¾	27	54	-	3
1	33	64	70	3
1¼	42	73	-	3
1½	48	83	-	3
2	60	102	108	4
2½	73	121	-	4
3	89	134	-	4
3½	102	159	-	4
4	115	172	-	4
5	141	194	-	5
6	168	220	-	5
8	219	277	-	6
10	273	337	-	6
12	324	407	-	6
14	356	448	-	7
16	406	512	-	7
18	457	547	-	7
20	508	604	-	7
22	560	658	-	7
24	610	715	-	7

* currently only available in NBR 50219.0

Dimensions in mm

Rubber-steel gaskets



Rubber-steel gaskets Profile WG2

Main load gasket

The rubber-steel gasket Profile WG2 has two stable sealing lips on its internal sealing diameter and the same design as rubber-steel gasket Profile WG on its external diameter.

Conforms to DIN 2690* (PN 10 to PN 40)

Ordering example:
Profile WG2, NBR quality, DN 300, PN 10, DIN 2690

For DIN/EN flanges

DN	d_1	d_2 PN 10	PN 16	PN 25	PN 40	s_1	s_2
25	35	70	70	70	70	4	6
32	43	82	82	82	82	4	6
40	49	92	92	92	92	4	6
50	61	107	107	107	107	4	6
65	77	127	127	127	127	4	6
80	90	142	142	142	142	4	6
100	115	162	162	168	168	5	7,5
125	141	192	192	-	-	5	7,5
150	169	218	218	225	225	5	7,5
175	195	248	248	-	-	5	7,5
200	220	273	273	285	292	6	9
250	274	328	330	342	353	6	9
300	325	378	385	402	418	6	9
350	368	438	445	-	-	7	11
400	420	490	-	-	-	7	11
450	470	540	-	-	-	7	11
500	520	595	-	-	-	7	11
600	620	695	735	-	-	7	11
700	720	810	-	-	-	8	12

Other sizes available on request

Dimensions in mm

*DIN 2690 has been replaced by DIN EN 1514-1.

Features:

- Leak-proof even at the lowest tightening torques, making the rubber-steel gasket Profile WG2 particularly suitable for plastic flange connections where there no high forces can be exerted.
- Highly leak-proof due to the self-sealing effect of the sealing lips under internal pressure; the internal pressure forces the sealing lips apart and contributes to the creation of the seal
- There is no pressing or flowing of the flexible sealing lips towards the rubber-steel gaskets when used in solid profile, as occurs with O or V-rings.
- optimum smoothing of any bumps on the flange by the flexible sealing lips, particularly when a contiguous seal cannot always be guaranteed, as with GRP flanges.

Typical field of application:

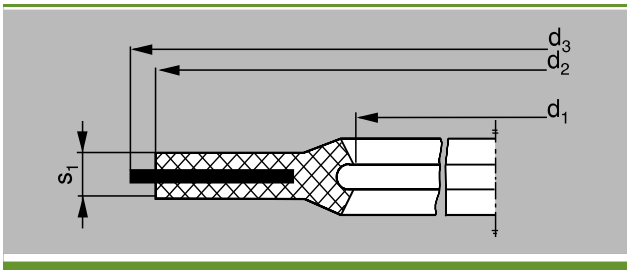
- Plastic and GRP flange connections
- Sealing vacuum-operated pipeline systems in chemical industry
- Gas and water supply
- For sealing highly-flexible flanges

Rubber-steel gaskets

Rubber-steel gaskets Profile WS

Main load gasket

The rubber-steel gasket Profile WS consists of a central support ring and a rubber sealing ring with integrally moulded sealing lips. The central support ring is available in galvanised and chromated carbon steel, stainless steel or plastic.



Works standard 182 for DIN/EN flanges (PN 10 PN 25)

Ordering example:
Profile WS, NBR/1.4541, DN 300, PN 10, Works standard 182

For DIN/EN flanges

DN	d_1	d_2	d_3 PN 10	d_3 PN 16	d_3 PN 25	s_1
10	18	45	45	45	45	4
15	22	50	50	50	50	4
20	28	60	60	60	60	4
25	35	70	70	70	70	4
32	43	82	82	82	82	4
40	49	92	92	92	92	4
50	61	102	107	107	107	4
65	77	121	127	127	127	4
80	90	134	142	142	142	4
100	115	162	162	162	168	4
125	141	192	192	192	195	4
150	169	218	218	218	225	4
175	195	248	248	248	255	4
200	220	273	273	273	285	4
250	274	328	328	330	342	4
300	325	378	378	385	402	4
350	368	438	438	445	458	4
400	420	490	490	497	515	4
450	470	540	540	557	565	8
500	520	590	595	618	625	8
600	620	690	695	735	730	8
700	720	800	810	805	830	8
800	820	900	915	910	940	8
900	920	1010	1015	1010	1040	8
1000	1020	1110	1120	1125	1150	8
1200	1220	1310	1340	1340	1360	8
1400	1420	1510	1545	1540	1575	8
1600	1620	1710	1770	1760	1795	8
1800	1820	1910	1970	1960	2000	8
2000	2020	2110	2180	2165	2230	8
2200	2220	2310	2380	2375	-	8
2400	2420	2510	2590	2585	-	8
2600	2620	2710	2790	2785	-	8
2800	2820	2910	3010	-	-	8
3000	3020	3110	3225	-	-	8

Other sizes available on request. Gaskets for PN6 flanges available on request. Dimensions in mm

Works standard 183 for flanges in accordance with ANSI/ ASME B 16.5 (Class 150 to Class 300)

Ordering example:
Profile WS, NBR/1.4541, NPS 1, Class 150,

For ANSI/ASME B16.5 flanges

NPS	d_1	d_2	d_3 class 150	d_3 class 300	s_1
½	18	45	45	51	4
¾	22	50	54	64	4
1	28	60	64	70	4
1¼	35	70	73	82	4
1½	43	82	83	93	4
2	61	102	102	108	4
2½	77	121	121	127	4
3	90	134	134	146	4
3½	102	159	159	162	4
4	115	162	172	178	4
5	141	192	194	213	4
6	169	218	220	248	4
8	220	273	277	305	4
10	274	328	337	359	4
12	325	378	407	419	4
14	368	438	448	483	4
16	420	490	512	537	4
18	470	540	547	594	8
20	520	590	604	651	8
22	560	630	658	702	8
24	620	690	715	772	8

Dimensions in mm

Works standard 184 for flanges in accordance with ASME B 16.47 Series A[1] (Class 150 to Class 300)

Injection-moulded gasket, vulcanised

Ordering example:
Profile WS, NBR/1.4541, NPS 26, Class 150,

For ASME B16.47 Series A flanges

NPS	d_1	d_2	d_3 class 150	d_3 class 300	s_1
26	665	745	771	832	8
28	720	800	829	895	8
30	770	850	880	949	8
32	820	900	937	1003	8
34	865	945	987	1054	8
36	920	1010	1045	1114	8
38	965	1045	1108	1051	8
40	1020	1110	1159	1111	8
42	1070	1160	1216	1162	8
44	1120	1210	1273	1216	8
46	1170	1260	1324	1270	8
48	1220	1310	1381	1321	8
50	1270	1360	1432	1375	8
52	1320	1410	1489	1425	8
54	1370	1460	1546	1489	8
56	1430	1520	1603	1540	8
58	1475	1565	1660	1590	8
60	1530	1620	1711	1641	8

Dimensions in mm

1) Previously MSS SP-44

Works standard 185 for flanges in accordance with ASME B16.47 Series B[1] (Class 150 to Class 300)

Injection-moulded sealing ring, vulcanised

Ordering example:
Profile WS, NBR/1.4541, NPS 26, Class 150,

For ASME B16.47 Series B flanges

NPS	d_1	d_2	d_3 class 150	d_3 class 300	s_1
26	650	720	722	768	8
28	700	770	773	822	8
30	745	815	824	883	8
32	795	875	878	937	8
34	850	930	932	991	8
36	900	980	984	1045	8
38	950	1040	1041	1095	8
40	1000	1090	1092	1146	8
42	1050	1140	1143	1197	8
44	1100	1190	1194	1248	8
46	1150	1240	1252	1314	8
48	1200	1290	1303	1365	8
50	1250	1340	1354	1416	8
52	1300	1390	1405	1467	8
54	1350	1440	1460	1527	8
56	1400	1490	1511	1591	8
58	1450	1540	1576	1653	8
60	1500	1590	1627	1703	8

Dimensions in mm

1) Previously API 605
Other sizes available on request

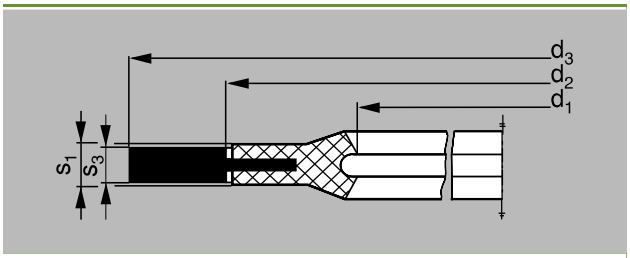
Features:

- Easy to replace the rubber sealing rings, meaning the rubber-steel gasket Profile WS can be reused again and again
- Safe to use and easy to handle the rubber sealing material, even at large nominal sizes
- Special sizes can be produced without incurring additional costs, from an internal diameter of approx. 400 mm.

Typical field of application:

- Sealing tank flange connections
- Sealing special flanges
- Sealing cooling and condensate pipelines in power plants

Rubber-steel gaskets



Rubber-steel gaskets Profile WL

Metal-to-metal contact gasket

The rubber-steel gasket Profile WL in its standard form consists of a galvanised and chromated metal support ring and a rubber sealing ring with integrally moulded sealing lips. The support ring is also available in stainless steel or plastic. In contrast to traditional gaskets, the rubber sealing ring in the rubber-steel gasket Profile WL is in off load contact. This means that any forces that are too high for the rubber sealing ring are borne by the support ring.

Another advantage is that the rubber sealing ring is chambered outwards by the support ring. With the creation of a metal-to-metal seal, very high internal pressures and additional forces from the pipeline system can be permitted. The rubber-steel gasket Profile WL combines all the advantages of a rubber gasket with those of a metal gasket.

Features:

- impossible to over load the rubber sealing ring
- seal is secure, even with large fluctuations or surges in pressure
- impervious to additional pipelines forces
- easy and safe installation, reduces the risk of installation errors caused by applying too high or uneven bolt tightening torques (the most common reason for the failure of a rubber-steel gasket)
- simple replacement of the rubber sealing ring, making it reusable
- Special sizes can be produced without incurring additional costs, from an internal diameter of approx. 400 mm.
- can be used for a range of applications due to the very large range of surface pressure limits.

Typical field of application:

- High pressure lines such as e.g. gas distribution pipelines, gas pressure control systems
- Pipeline construction such as e.g. in underground pipelines
- flue gas cleaning systems and power plant cooling circuits
- Pipeline and apparatus construction with partly-rubber flange sealing surfaces.

In order to determine the flange recess required for the rubber coating we would be happy to provide our design recommendations..

Rubber-steel gaskets

Works standard 178 for DIN/EN flanges (PN 10 to PN 160)

Ordering example:
Profile WL, NBR/carbon steel galvanised and chromated, DN 200, PN 63, Works standard 178

For DIN/EN flanges

			PN			d_3					
DN	d_1	d_2	10	16	25	40	63	100	160	s_1	s_3
10	18	37	45	45	45	45	56	56	56	4	3
15	22	39	50	50	50	50	61	61	61	4	3
20	28	45	60	60	60	60	-	-	-	4	3
25	35	55	70	70	70	70	82	82	82	4	3
32	43	63	82	82	82	82	-	-	-	4	3
40	49	75	92	92	92	92	103	103	103	4	3
50	61	82	107	107	107	107	113	119	119	4	3
65	77	97	127	127	127	127	137	143	143	4	3
80	90	115	142	142	142	142	148	154	154	4	3
100	115	149	162	162	168	168	174	180	180	4	3
125	141	175	192	192	195	195	210	217	217	4	3
150	169	205	218	218	225	225	247	257	257	4	3
175	195	235	248	248	255	267	277	287	284	4	3
200	220	260	273	273	285	292	309	-	324	4	3
250	274	309	328	330	342	353	364	391	388	4	3
300	325	360	378	385	402	418	424	458	458	4	3
350	368	400	438	445	458	475	486	512	-	4	3
400	420	460	490	497	515	547	543	572	-	4	3
450	470	515	540	557	565	572	-	-	-	8	6
500	520	565	595	618	625	628	657	704	-	8	6
600	620	665	695	735	730	745	764	813	-	8	6
700	720	775	810	805	830	850	879	950	-	8	6
800	820	875	915	910	940	970	988	-	-	8	6
900	920	985	1015	1010	1040	1080	1108	-	-	8	6
1000	1020	1085	1120	1125	1150	1190	1220	-	-	8	6
1200	1220	1295	1340	1340	1360	1395	1452	-	-	8	6
1400	1420	1495	1545	1540	1575	1615	-	-	-	8	6
1600	1620	1705	1770	1760	1795	1830	-	-	-	8	6
1800	1820	1905	1970	1960	2000	-	-	-	-	8	6
2000	2020	2105	2180	2165	2230	-	-	-	-	8	6
2200	2220	2305	2380	2375	-	-	-	-	-	8	6
2400	2420	2505	2590	2585	-	-	-	-	-	8	6
2600	2620	2705	2790	2785	-	-	-	-	-	8	6
2800	2820	2905	3010	-	-	-	-	-	-	8	6
3000	3020	3105	3225	-	-	-	-	-	-	8	6

Gaskets for PN6 flanges available on request

Dimensions in mm

Works standard 179 for flanges in accordance with ANSI/ ASME B 16.5 (Class 150 to Class 2500)

Ordering example:
Profile WL, NBR/1.4541, NPS 5, Class 150, Works standard 179

For ANSI/ASME B16.5 flanges

			class d_3								
NPS	d_1	d_2	150	300	400	600	900	1500	2500	s_1	s_3
½	16	32	45	51	51	51	61	61	67	4	3
¾	22	39	54	64	64	64	67	67	73	4	3
1	28	45	64	70	70	70	76	76	83	4	3
1¼	35	55	73	80	80	80	86	86	102	4	3
1½	43	63	83	93	93	93	95	95	114	4	3
2	61	82	102	108	108	108	140	140	143	4	3
2½	77	97	121	127	127	127	162	162	165	4	3
3	90	115	134	146	146	146	165	172	194	4	3
3½	102	128	159	162	159	159	-	-	-	4	3
4	115	149	172	178	175	191	203	207	232	4	3
5	141	175	194	213	210	238	245	251	276	4	3
6	169	205	220	248	245	264	286	280	314	4	3
8	220	260	277	305	302	318	356	349	384	4	3
10	274	309	337	359	356	397	432	432	473	4	3
12	325	360	407	419	416	454	496	518	546	4	3
14	368	400	448	483	480	489	518	575	-	4	3
16	420	460	512	537	534	562	572	638	-	4	3
18	470	515	547	594	591	610	635	702	-	8	6
20	520	565	604	651	645	680	696	753	-	8	6
22	560	605	658	702	-	730	-	-	-	8	6
24	620	665	715	772	766	788	835	899	-	8	6

Dimensions in mm

Works standard 180 for flanges in accordance with ASME B 16.47 Series A[1] (Class 150 to Class 900)

Ordering example:
Profile WL, NBR/1.4541, NPS 26, class 150, Works standard 180

For ASME B16.47 Series A flanges

			class						
			d_3						
NPS	d_1	d_2	150	300	400	600	900	s_1	s_3
26	665	720	771	832	829	864	880	8	6
28	720	775	829	895	889	911	943	8	6
30	770	825	880	949	943	968	1006	8	6
32	820	875	937	1003	1000	1019	1070	8	6
34	865	920	987	1054	1051	1070	1133	8	6
36	920	975	1045	1114	1114	1127	1197	8	6
38	965	1020	1108	1051	1070	1102	1197	8	6
40	1020	1075	1159	1111	1124	1152	1248	8	6
42	1070	1125	1216	1162	1175	1216	1298	8	6
44	1120	1175	1273	1216	1229	1267	1365	8	6
46	1170	1225	1324	1270	1286	1324	1432	8	6
48	1220	1275	1381	1321	1343	1387	1483	8	6
50	1270	1325	1432	1375	1400	1445	-	8	6
52	1320	1375	1489	1425	1451	1495	-	8	6
54	1370	1425	1546	1489	1515	1552	-	8	6
56	1430	1485	1603	1540	1565	1610	-	8	6
58	1475	1530	1660	1590	1616	1660	-	8	6
60	1530	1585	1711	1641	1680	1730	-	8	6

1) Previously MSS SP-44

Dimensions in mm

Works standard 181 for flanges in accordance with ASME B 16.47 Series B[1] (Class 150 to Class 900)

Ordering example:
Profile WL, NBR/1.4541, NPS 26, class 150, Works standard 181

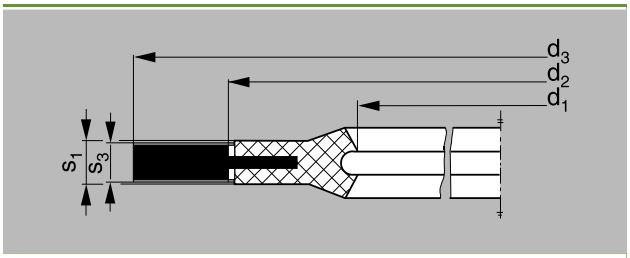
For ASME B16.47 Series B flanges

			class						
			d_3						
NPS	d_1	d_2	150	300	400	600	900	s_1	s_3
26	650	695	722	768	743	762	835	8	6
28	700	745	773	822	797	816	899	8	6
30	745	790	824	883	854	876	956	8	6
32	795	840	878	937	908	930	1013	8	6
34	850	895	932	991	959	994	1070	8	6
36	900	945	984	1045	1019	1045	1121	8	6
38	950	1000	1041	1095	1070	1102	1197	8	6
40	1000	1050	1092	1146	1124	1152	1248	8	6
42	1050	1100	1143	1197	1175	1216	1298	8	6
44	1100	1150	1194	1248	1229	1267	1365	8	6
46	1150	1205	1252	1314	1286	1324	1432	8	6
48	1200	1255	1303	1365	1343	1387	1483	8	6
50	1250	1305	1354	1416	1400	1445	-	8	6
52	1300	1355	1405	1467	1451	1495	-	8	6
54	1350	1405	1460	1527	1515	1552	-	8	6
56	1400	1455	1511	1591	1565	1604	-	8	6
58	1450	1515	1576	1653	1616	1660	-	8	6
60	1500	1565	1627	1703	1680	1730	-	8	6

1) Previously API 605

Dimensions in mm

Rubber-steel gaskets



Rubber-steel gaskets Profile WL-HT

Metal-to-metal gasket, HTB (high thermal load) tested

The rubber-steel gasket Profile WL-HT is essentially designed in the same way as the gasket Profile WL, except that the support ring is made with layers of graphite. The rubber sealing lip is made of NBR 50219.0 (certified for use with gas and water supplies) and the support ring is made of galvanised and chromated metal. In normal use the rubber sealing lip forms the primary seal. Under extreme thermal loads, such as during a fire, the support ring with graphite layers provides the seal.

For DIN/EN flanges

			d_3				
DN	d_1	d_2	PN16	PN40	d_4	S_1	S_3
25	35	57	70	70	44	4,7	3,7
32	43	68	82	82	52	4,7	3,7
40	49	75	92	92	58	4,7	3,7
50	61	90	107	107	71	4,7	3,7
80	90	121	142	142	100	4,7	3,7
100	111	142	162	168	124	4,7	3,7
150	163	195	218	225	176	4,7	3,7
200	212	248	273	-	225	4,7	3,7

Other sizes available on request.

Dimensions in mm

Features:

- certified and tested under high thermal loads at 650°C, 30 minutes by the DVGW research centre, Karlsruhe for conformity with DVGW-VP 401 for flange connections in accordance with DIN EN 1092-1.
- has all the features of the rubber-steel gasket Profile WL
- Easy to replace the rubber sealing rings and graphite layers, meaning the rubber-steel gasket Profile WLHT can be reused again and again

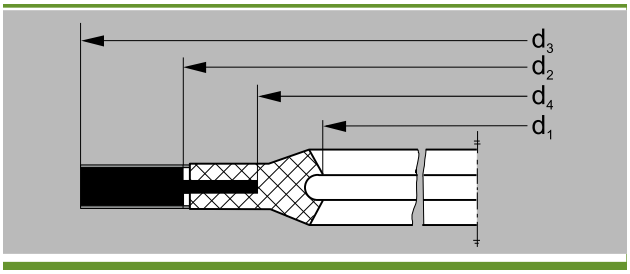
Typical field of application:

- Domestic gas supplies with flanged house connection combinations, pressure regulators and gas meters
- Gas stations
- Drinking water pipelines with associated fire fighting systems in accordance with DIN 1988-600.

Gasket characteristic values, calculations, rubber qualities

Main load gaskets:

Profile	Material	Description	Unit	Temp. ϑ in the gasket area 0°C	100°C
WG WG2 WS	FKM	σ_v σ_ϑ	N/mm² N/mm²	2 15	2 7



* d_4 on request measured

For the steel part in the main-load, range d_2 and d_3

Profile	Material	Description	Unit	Temp. ϑ in the gasket area 20 °C	100 °C
WL	carbon steel	σ_V σ_ϑ	N/mm² N/mm²	12 450	12 450
WL-HT	corrosion-resistant stainless steel	σ_V σ_ϑ	N/mm² N/mm²	12 120	12 120

For the rubber part in the off-load, range d_4 and d_2

Profile	Material	Description	Unit	Temp. ϑ in the gasket area 20 °C	100 °C
WL WL-HT	NBR, EPDM	σ_V	N/mm²	12	12

Rubber qualities for rubber-steel gaskets:

Quality		Temperature range in °C		
NBR	50224*	-30	to	100
NR	Natural rubber	-50	to	80
EPDM	e.g. Buna AP	-40	to	110
EPDM	Peroxide vulkansisation**	-40	to	130
FKM	e.g. Viton	-20	to	200

The thermal resistance relates to air.

* NBR 50224 is certified for use with gas and drinking water supplies

- no need for double storage
- no danger of mixing parts up

Certified in accordance with:

- DVGW-DIN/EN 682 (Gas supply distribution pipelines)
- KTW recommendation Part 1.3.13
  Area D1+D2
  (test for adverse physiological effects)

** EPDM 50323.0 Peroxide is permitted according to the KTW recommendation Part 1.03.13 Areas D1+D2

All permits and tests can be found at www.kempchen.de

Corrugated gaskets

Corrugated gaskets are universally applicable sealing elements. Due to the wide range of shapes that they can be produced in – including rings, ovals, elongated ovals or frames, with or without dividers, holes and retaining plates – they continue to be used in new areas. The gaskets can be fully or partially coated. Corrugated gaskets with torque support have proven excellent when used with inflexible flanges.

Even with unmachined flanges, a satisfactory seal can be achieved with the use of suitable soft-material layers. The gaskets can be produced in all the usual sizes up to 6000 mm.

The corrugation on the carrier hold the layers in place. The gaskets are also suitable for use with vacuums.

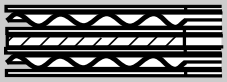
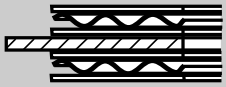
Gaskets of the Profile **W1A** consist of a carrier ring W1 with layers on both sides – PTFE for use at temperatures of up to 250°C, or graphite for temperatures of approx. 500 °C with atmospheric oxygen influx. When fitted, the soft plastic layers are pressed into the corrugation. This creates an extremely elastic sealing element with a low leakage rate.

In pieces with large diameters and sealing widths, or where there are bumps on the existing flange, it is particularly useful to have layers of RivaTherm Super on both sides. This provides the seal with better stability and evenness. RivaTherm Super layers are made from expanded graphite with a stainless steel sheet metal insert. The 1 mm product is designated RS1E1 and the 2 mm product is RS2E1. The layer width for RivaTherm Super should be at least 15 mm. The type of layer required should be specified in each case.

Gaskets with an unlined central edge are marked as Profile **W11A.** For large sealing diameters above DN 1200 we recommend that gaskets of either **Profile W2A** or **Profile W12A** be used. These gaskets are fitted with a stabilising ring as well as a W1A seal on both sides, making them very inherently stable with a greater ability to conform to the surface of the flange.

The gaskets can also be provided with an F1 external eyelet, such as in e.g. **Profile W1A-3·F1**.

Gasket profiles

Profile	Cross-section
W1A	
W1A-3	
W1A-3·F1	
W11A	
W2A	
W12A	

Gasket limiting values

Profiles			W1A, W11A		W1A-3	
Materials			1.4541 graphite	1.4541 PTFE	1.4571 graphite	1.4571 PTFE
Recommended max. roughness of the flange surfaces	µm	from	25	50	12,5	50
		to	50	100	25	100
Surface pressure limits for 20 °C	N/mm²	σ_v	15	15	15	15
		σ_ϑ	180	180	200	200
Surface pressure limits for 300 °C	N/mm²	σ_v	20	-	20	-
		σ_ϑ	150	-	150	-

You can find gasket characteristic values in accordance with EN13555 on our homepage at www.kempchen.de

Corrugated ring gasket W1A-RS 2E2 for manhole covers on steam boiler systems in accordance with TRD 401

(Expired on 1st January 2013.)

Steam drums in energy producing and recycling plants use oval manhole covers with internal caps at pressures of up to 250 bar and temperatures of up to 450°C. For applications such as these we recommend the use of metal/soft-material gaskets. For manhole covers on steam boiler systems operating in accordance with **TRD 401** with pressure of up to **40 bar** and temperatures of up to **250°C**, and frequently in excess of that, the corrugated ring gaskets **W1A** with RivaTherm Super layers on both sides RS2E2 in the 2 mm size have proven to be extremely useful.

The **W1A** gaskets with layers of RS2E2 have been tested by the South German TÜV for compliance with TRD 401 and as a result of the tests have received the TÜV approval mark. The approval mark was granted in compliance with the associated TÜV technical specification sheet Gasket 100 and TRD 401 Appendix 1, and highest class "Test Class d" was awarded.

With appropriate dimensioning of the gasket with regard to measurements, it can withstand pressures of up to 400 bar and temperatures of up to 500°C.

The following table contains the surface pressure limits for the temperature range from 20°C to 500°C.

Gasket limiting values

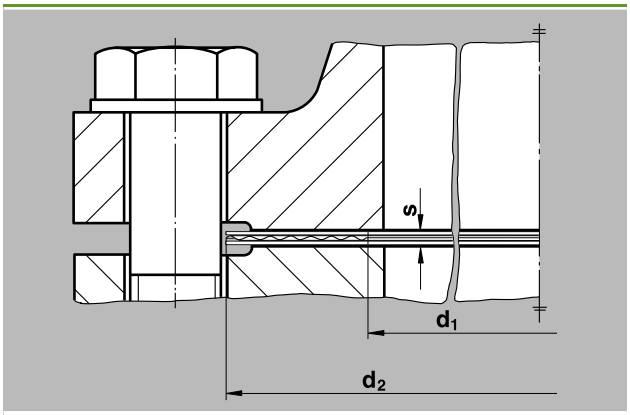
Description		20°C	100°C	200°C	300°C	400°C	500°C
W1A-RS2E2 1.4571/graphite	σ_v [N/mm^2]	15	16	17	20	22	25
	σ_ϑ [N/mm^2]	180	170	160	150	140	130

Conforms to EN 1514-4 (PN 10 to PN 100)

Ordering example for a corrugated gasket with layers, Profile W1A, DN 100, PN 100, EN 1514-4, made of…[1]:

Corrugated gasket, W1A, DN 100, PN 100, EN 1514-4, 1.4541/graphite

[1] Specify material when placing order



Conforms to EN 1514-4 for DIN flanges

DN	d_1	PN 10	PN 16	PN 25	d_2 PN 40	PN 63	PN 100
10	18	48	48	48	48	58	58
15	22	53	53	53	53	63	63
20	27	63	63	63	63	74	74
25	34	73	73	73	73	84	84
32	43	84	84	84	84	90	90
40	49	94	94	94	94	105	105
50	61	109	109	109	109	115	121
65	77	129	129	129	129	140	146
80	89	144	144	144	144	150	156
100	115	164	164	170	170	176	183
125	141	194	194	196	196	213	220
150	169	220	220	226	226	250	260
200	220	275	275	286	293	312	327
250	273	330	331	343	355	367	394
300	324	380	386	403	420	427	461
350	356	440	446	460	477	489	515
400	407	491	498	517	549	546	575
450	458	541	558	567	574	-	-
500	508	596	620	627	631	660	708
600	610	698	737	734	750	768	819
700	712	813	807	836	-	883	956
800	813	920	914	945	-	994	-
900	915	1020	1014	1045	-	1114	-

- Flanges compliant with the standard not available

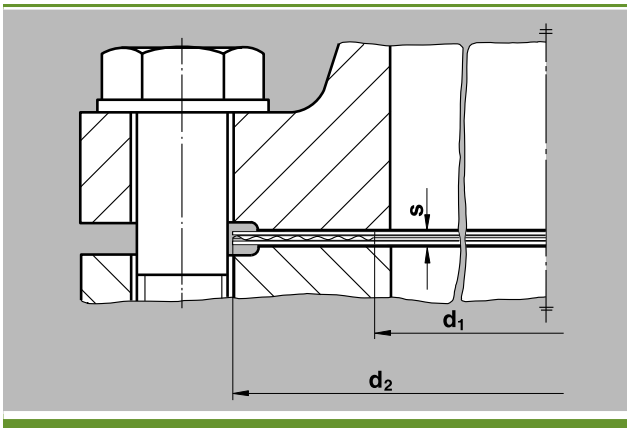
Dimensions in mm

Conforms EN 12560-4 (Class 150 to Class 2500)

Ordering example for a corrugated gasket with layers, Profile W1A, NPS 5, for ANSI flanges, Class 600, EN 12560-4, made of…[1]:

Corrugated gasket, W1A, NPS 5, Class 600, EN 12560-4, 1.4541 / PTFE

[1] Specify material when placing order



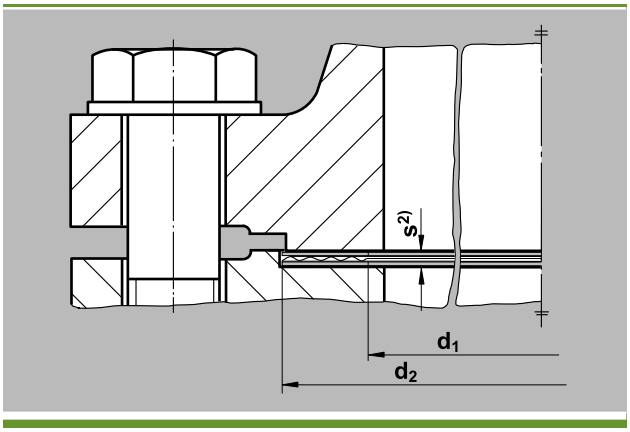
Conforms to EN 12560-4 for flanges in accordance with ANSI B 16.5

NPS	d_1	Class 150	300	600	d_2 900	1500	2500
½	22	47,6	54,0	54,0	63,5	63,5	69,9
¾	27	57,2	66,7	66,7	69,9	69,9	76,2
1	34	66,7	73,0	73,0	79,4	79,4	85,7
1¼	43	76,2	82,6	82,6	88,9	88,9	104,8
1½	49	85,7	95,3	95,3	98,4	98,4	117,5
2	61	104,8	111,1	111,1	142,9	142,9	146,1
2½	73	123,8	130,2	130,2	165,1	165,1	168,3
3	89	136,5	149,2	149,2	168,3	174,6	196,9
4	115	174,6	181,0	193,7	206,4	209,6	235,0
5	141	196,9	215,9	241,3	247,7	254,0	279,4
6	169	222,3	250,8	266,7	288,9	282,6	317,5
8	220	279,4	308,0	320,7	358,8	352,4	387,4
10	273	339,7	362,0	400,1	435,0	435,0	476,3
12	324	409,6	422,3	457,2	498,5	520,7	549,2
14	356	450,9	485,8	492,1	520,7	577,9	-
16	407	514,4	539,8	565,2	574,7	641,4	-
18	458	549,3	596,9	612,8	638,2	704,9	-
20	508	606,4	654,1	682,6	698,5	755,7	-
24	610	717,6	774,7	790,6	838,2	901,7	-

- Flanges compliant with the standard not available

Dimensions in mm

For flanges with male and female faces



Conforms to DIN 2692 (PN 10 to PN 100)

For dimensions, see the section “General dimension tables”. Ordering example for a corrugated gasket with layers, Profile W1A, DN 100, made of ...[1]:

Corrugated gasket, W1A, DN 100, DIN 2692, 1.4541/PTFE

In accordance with ANSI B 16.21 (Class 150 to 1500)

For dimensions, see the section “General dimension tables”. Ordering example for a corrugated gasket with layers, Profile W1A, DN 5, NPS 5, wide finish, made of ...[1]:

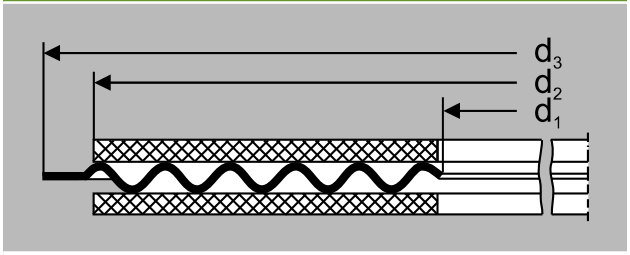
Corrugated gasket, W1A, NPS 5, ANSI B 16.21 wide, male and female face, 1.4541/graphite

[1] Specify material when placing order

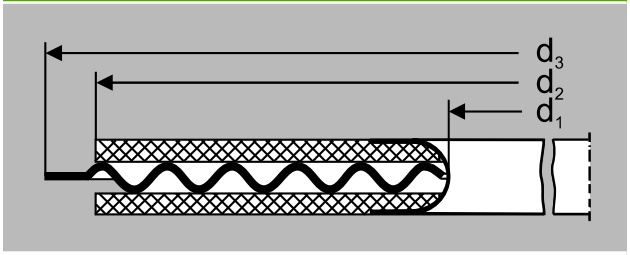
Corrugated TA-Luft gasket Profile W1A-3

with layers of soft material on both sides and an optimised corrugated ring carrier.

Profile: W1A-3



Profile: W1A-3•F1



TA Luft gaskets such as Profile W1A-3 consist of an optimised corrugated ring carrier W1-3 made of 1.4571 with graphite layers on both sides. The 0.8 mm thick layers have a purity of C >= 99%, a density of ρ = 1.0g/cm^3 and a chloride content of <= 25 ppm. The graphite layers do not contain filler or adhesives.

The total thickness of a gasket with graphite layers as delivered is approx. 2.9 mm, made up of the 1.3 mm thick corrugated ring carrier and both 0.8 mm graphite layers.

0.5 mm layers of unsintered PTFE are also used.

The total thickness of a gasket with PTFE layers as delivered is approx. 2.3 mm, made up of the 1.3 mm thick corrugated ring carrier and both 0.5 mm PTFE layers.

When a surface pressure of 30 MPa is applied, the gasket thickness is reduced by approximately 50%.

This means that in a pressurised condition, the gasket has the same thickness as a soft-material flat gasket with a starting thickness of 2 mm. The W1A-3 gasket can also be used with flanges conforming to DIN 2526 Form C.

In order to avoid contact between the medium and the graphite layers, the corrugated ring gasket is also available with an eyelet ring made of 1.4571, Profile W1A-3•F1.

Gaskets that conform to works standard 188 and/or works standard 189 in accordance with DIN 2690 have an external parallel centre ring onto which the corrugated ring material, the nominal width, the nominal pressure and the manufacturer's mark are impressed.

As the external diameter of the layers is approx. 8 mm smaller than the corrugated carrier, this identification area is always visible.

Due to their soft plastic layers, these gaskets conform easily to flange sealing surfaces.

Once fitted, the layers are pressed into the corrugation and are chambered there, resulting in the creation of an extremely elastic sealing element due to the pressure, with a leak rate that is significantly lower than with traditional graphite flat gaskets.

Profile W1A-3 has been tested in accordance with VDI 2440 and fulfils the criteria of the TA Luft type test.

The blow out security of Profile W1A-3 was tested, demonstrated and documented by the Amtec Institute on specimens at a temperature of 400°C. The geometry of the corrugated ring gasket ensures high stability in the seal, making it particularly easy to handle.

Fulfilment of the "Fire Safe" requirements of ISO 10497 has been demonstrated by tests in accordance with API 607 and is confirmed with the relevant certificate.

Corrugated gaskets

Gasket limiting values

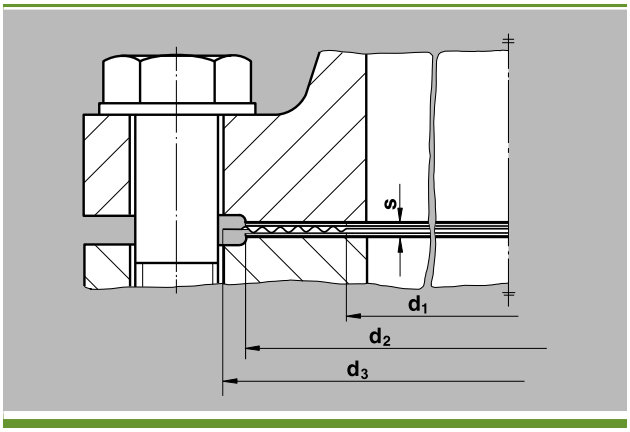
Layer		Graphite	PTFE
Min. surface pressure N/mm^2 at 20 °C:	σ_v	15	15
Min. surface pressure N/mm^2 at 20 °C:	σ_ϑ	200	200
Min. temperature	°C	-200	-200
Max. temperature	°C	+500	+250

You can find gasket characteristic values in accordance with EN13555 on our homepage at www.kempchen.de

Corrugated gaskets

Ordering example for a corrugated ring gasket, Profile W1A-3, DN 100, PN 16, works standard 188, with a corrugated ring carrier made of 1.4571 steel with a graphite layer.

Corrugated ring gasket, W1A-3, DN 100, PN 16, works standard 188, 1.4571/graphite



Works standard 188
For smooth flanges and flanges with raised face as per DIN and/or EN

		PN 10		PN 16		PN 25		PN 40		PN 63		PN 100	
DN	d_1	d_2	d_3	d_2	d_3	d_2	d_3	d_2	d_3	d_2	d_3	d_2	d_3
10	18	39	45	39	45	39	45	39	45	52	58	52	58
15	22	44	50	44	50	44	50	44	50	57	63	57	63
20	28	54	60	54	60	54	60	54	60	68	74	68	74
25	35	64	70	64	70	64	70	64	70	78	84	78	84
32	43	76	82	76	82	76	82	76	82	84	90	84	90
40	49	86	92	86	92	86	92	86	92	99	105	99	105
50	61	101	107	101	107	101	107	101	107	109	115	115	121
65	77	121	127	121	127	121	127	121	127	134	140	140	146
80	90	136	142	136	142	136	142	136	142	144	150	150	156
100	115	156	162	156	162	162	168	162	168	170	176	177	183
125	141	186	192	186	192	189	195	189	195	207	213	**214**	**220**
150	169	212	218	212	218	219	225	219	225	244	250	**254**	**260**
200	220	267	273	267	273	279	285	286	292	306	312	**321**	**327**
250	274	322	328	324	330	336	342	347	353	**361**	**367**	**388**	**394**
300	324	374	380	380	386	397	403	414	420	**421**	**427**	**455**	**461**
350	356	434	440	440	446	454	460	471	477	483	489	**509**	**515**
400	407	485	491	492	498	511	517	543	549	540	546	**569**	**575**
450	458	535	541	552	558	561	567	568	574				
500	508	590	596	614	620	621	627	**625**	**631**	**654**	**660**	**702**	**708**
600	610	692	698	731	737	728	734	**744**	**750**	**762**	**768**	-	-
700	712	807	813	**801**	**807**	**830**	**836**	**844**	**850**	**877**	**883**	-	-
800	813	914	920	**908**	**914**	**939**	**945**	**964**	**970**	**988**	**994**	-	-
900	915	1014	1020	**1008**	**1014**	**1039**	**1045**	**1074**	**1080**	**1108**	**1114**	-	-
1000	1020	1114	1120	**1119**	**1125**	**1144**	**1150**	**1184**	**1190**	-	-	-	-

- Flanges compliant with the standard not available

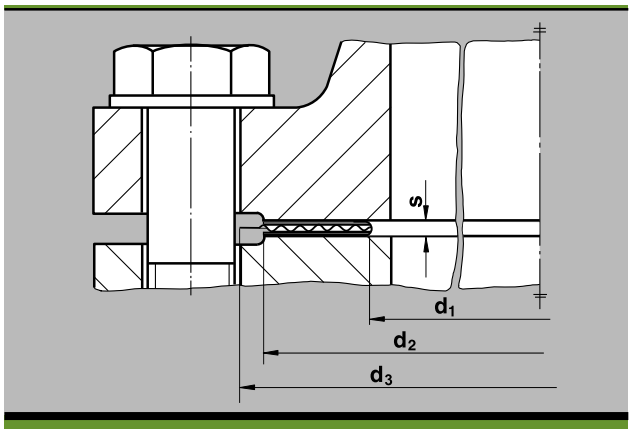
Dimensions in mm

Figures in bold:
For flanges with raised face, the surface pressure must be recalculated and if necessary re-evaluated. In some cases the gasket will not bear the installation tightening torque required by the internal pressure.

Corrugated gaskets

Ordering example for a corrugated ring gasket, Profile W1A-3 • F1, NPS 4, Class 15, works standard 189, with a corrugated ring carrier and a eyelet made of 1.4571 steel with a graphite layer.

Corrugated ring gasket, W1A-3 • F1, NPS 4, Class 150, works standard 189, 1.4571/graphite



Works standard 189
For smooth flanges and flanges with raised face as per ANSI / ASME B16.5 and EN 1759

			Class 150		Class 300		Class 600		Class 900	
DN	NPS	d_1	d_2	d_3	d_2	d_3	d_2	d_3	d_2	d_3
15	½	22	40	47,5	46	54,0	46	54,0	56	63,5
20	¾	27	49	57,0	59	66,5	59	66,5	62	70,0
25	1	34	59	66,5	65	73,0	65	73,0	72	79,5
32	1 ¼	43	68	76,0	75	82,5	75	82,5	81	89,0
40	1 ½	49	78	85,5	88	95,5	88	95,5	91	98,5
50	2	61	97	105,0	103	111,0	103	111,0	135	143,0
65	2 ½	73	116	124,0	122	130,0	122	130,0	157	165,0
80	3	89	129	136,5	141	149,0	141	149,0	161	168,5
100	4	115	167	174,5	173	181,0	186	193,5	199	206,5
125	5	141	189	197,0	208	216,0	234	241,5	240	247,5
150	6	169	215	222,5	243	251,0	259	266,5	**281**	**289,0**
200	8	220	272	279,5	300	308,0	313	320,5	**351**	**359,0**
250	10	273	332	339,5	354	362,0	**392**	**400,0**	**427**	**435,0**
300	12	324	402	409,5	415	422,5	**449**	**457,0**	**491**	**498,5**
350	14	356	443	451,0	478	486,0	**484**	**492,0**	**513**	**520,5**
400	16	407	507	514,5	532	540,0	**557**	**565,0**	**567**	**574,5**
450	18	458	542	549,5	589	597,0	**605**	**613,0**	**630**	**638,0**
500	20	508	599	606,5	646	654,0	**675**	**682,5**	**691**	**698,5**
600	24	610	710	717,5	767	774,5	**783**	**790,5**	**830**	**838,0**

Dimensions in mm

Figures in bold:
For flanges with nubbins, the surface pressure must be recalculated and if necessary re-evaluated. In some cases the gasket will not bear the installation tightening torque required by the internal pressure.

Hot-gas and hot-blast gaskets

Kempchen's hot-gas and hot-blast gaskets have proven themselves over many years of use in the iron and steel industry. Hot-gas and hot-blast gaskets are primarily used with dry gases and with high, dry heat. They are very suitable for the harsh conditions in hot-gas and hot-blast lines which also generally have low pressure. Depending on the leak-tightness required and the flange temperature, there are a number of models available.

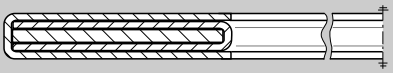
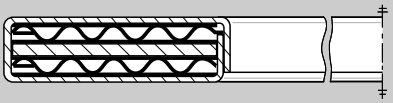
Most gaskets can withstand the demands made of a gasket when used in hot-gas or hot-blast lines. The gaskets can withstand high temperatures, are non-flammable and chemically resistant against dry, hot gases. They are used at high temperatures and at pressures of up to 10 bars. Gaskets with graphite inlays can be used at temperatures up to 550 °C.

The gaskets are available as circular or oval sealing rings or as frames. In their standard form they consist of a 3 mm thick core of unalloyed steel and a coating of fibreglass impregnated with graphite.

We can produce frame gaskets with welded plates or in some cases with holes directly from client drawings. If requested, we can also supply these gaskets with a different steel core, for example 1.4541 or 1.5414.

The **WAG Profile** consists of a steel ring with two U-shaped fibreglass envelope. The first (inner) envelope has an opening facing outwards, the second (outer) envelope has an opening facing inwards. This design helps to prevent the casing being ripped off when fitted in difficult conditions, by packing the gasket into a narrow sealing gap. The gaskets are generally impregnated.

Gasket profiles

Profile	Cross-section
WAG	
W2AM	
B7M-F1-CKP	

In **Profile W2AM** gaskets, the inner steel ring is layered with corrugated gaskets with graphite layers and then coated with fibreglass. The gaskets are generally impregnated.

Profile B7M-F1-CKP gaskets consist of a grooved gasket coated with fibreglass and an inner eyelet and are impregnated with CKP. This design produces comparatively thin gaskets. These gaskets fulfil the need for a fast compression set, particularly when fitting flanges with hydraulic or pneumatic screwing tools or even by hydraulic tension (bolt tensioning). The gasket is certified in accordance with TA Luft and ca be used with other smelting gases.

Corrugated and metal jacketed gaskets can also be used for hot-gas applications.

Gasket limiting values

Profile			WAG	W2AM	B7M-F1 -CKP
Materials			Steel Glasfaser	fibreglass fibreglass	Steel fibreglass
Recommended max. roughness of the flange surfaces	µm	from to	50 100	50 100	50 100
Surface pressure limits for 20 °C	N/mm²	σ_v σ_ϑ	45 120	45 150	30 350
Surface pressure limits for 300 °C	N/mm²	σ_v σ_ϑ	60 100	60 125	25 210

Spiroflex spiral-wound gaskets

Spiral-wound gaskets have long been used as sealing elements in refineries, chemical plants, gas installations, water treatment plants and in general pipeline construction.

Spiroflex gaskets SpV retain the same filler strip throughout. Common filler materials include graphite, sintered or unsintered PTFE and mica. Spiroflex gaskets SpV are only suitable for flange connections below PN 25 where there are sufficiently high bolt loads available.

BAM test report: Profile SpV with graphite for liquid and gaseous oxygen 350°C, 250 bar (Manufacturer certificate on the basis of a BAM test report)

Spiroflex gaskets with sealing zone Profile SpZ have the same filler strip inside and outside and a PTFE filler strip in the middle area. They have a number of distinct technical advantages:

- Lower seating stress required with higher leak-tightness, as the surface pressure is concentrated on the middle area of the sealing zone of unsintered PTFE. This allows Profile SpZ gaskets to be used from PN 10. The minimum surface pressure is 30 N/mm^2 as opposed to the 50 N/mm^2 otherwise required.
- The surface pressure creates smaller radial forces than for example gaskets that are filled entirely with PTFE. There is therefore no need to support the spiral with an inner ring at smaller nominal diameters up to max. DN 200 and at low sealing pressures of approx. 60 N/mm^2. High pressure and/or frequent load changes require a high sealing pressure, in this case the spirals should be supported with an appropriate flange design or additional rings.
- As the PTFE sealing zone is protected by areas filled with graphite, it can withstand extreme operational conditions.
- Using a helium leak detector, leak rates of 10^{-8} mbar l s^{-1} m^{-1} have been measured on SpZ gaskets DN 150 with PTFE sealing zone.

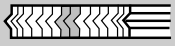
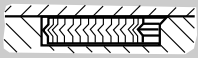
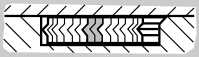
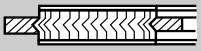
Spiroflex gaskets SpFS in the “Fire Safe” range have unsintered PTFE filler strips on the inside and graphite filler strips on the outside. They are suitable for applications where the product may not come into contact with the graphite and in an operating temperature range below 250 °C . At temperatures above 250 °C which require to be “fire safe”, Spiroflex gaskets SpV with graphite filler band can be used.

Application limits

Spiroflex gaskets can be produced in all sizes from DN 10 to a diameter of four metres. However, from a sealing technology point of view, grooved gaskets are recommended for use at diameters above 1000 mm.

We also produce oval-shaped spiral-wound gaskets for the valve and apparatus construction industries, e.g. as valve cover gaskets or manhole covers. Oval-shaped inner and/or outer rings are also possible.

Gasket profiles

Profile	Cross-section
SpV1	
SpV1J	
SpV2J	
SpZ1	
SpZ2	
SpZ2J	
SpFS2J	
SpVNG	
SpZNG	
SpV2J-HT	

Materials for the metal strip

For DIN areas: 1.4541
For ASME areas: 316L (1.4404)
Other materials available on request.

Materials for the sealing filler strip

Graphite up to 550 °C, unsintered PTFE as the sealing zone or sintered PTFE for all the filling up to 260 °C, other materials available on request.

Materials for the outer ring

The standard model has an outer ring of galvanised sheet steel or a bichromatised ring.

Materials for the inner rin

Generally the material for the inner ring is the same as that used for the metal strip.

Spiroflex spiral-wound gaskets

Gasket limiting values

Profiles			SpV1, SpV2			SpV1J, SpV2J			SpZ1, SpZ2	SpZ1J; SpZ2J
Materials			1.4541 graphite	1.4571 PTFE	1.4571 PTFE sintered	1.4541 graphite	1.4571 PTFE	1.4571 PTFE sintered	1.4571 PTFE/graphite	1.4571 PTFE/Graphit
Recommended max. roughness of the flange surfaces	µm	from	12,5	25	25	12,5	25	25	25	25
		to	25	50	50	25	50	50	50	50
Surface pressure limits for 20 °C	N/mm²	σ_v	50	50	50	50	50	50	30	30
		σ_ϑ	150	150	150	300	300	300	150	300
Surface pressure limits for 300°C	N/mm²	σ_v	60	*	*	60	*	*	45*	45*
		σ_ϑ	120	*	*	220	*	*	120*	220*

* For PTFE, these surface pressures apply at 250°C.

Profile design and gasket thickness

Profile design	single corrugated SpV	single corrugated with zone SpZ	For flange type	Gasket thickness Dimensions in mm SpV or SpZ to DN 80	300	900	1200	1800	≥2000
1 without inner and outer ring	SpV1*	SpZ1*	Tongue and groove Male and female face	2,5	3,0	3,5	4,5	5,5	6,5
1J with inner ring 1)	SpV1J*	SpZ1J	Male and female face	2,5	3,0	3,5	4,5	5,5	6,5
1J with inner ring 2)	SpV1J	SpZ1J	specially-produced male and female face **	4,5	4,5	4,5	4,5	5,5	6,5
2 with outer ring 2)	SpV2	SpZ2*	raised face	4,5	4,5	4,5	4,5	5,5	6,5
2J with inner and outer ring 2)	SpV2J*	SpZ2J*	raised face	4,5	4,5	4,5	4,5	5,5	6,5
			1) Thickness	1,5	1,5	2,0	3,0	3,0	4,0
			2) Thickness	3,0	3,0	3,0	3,0	3,0	4,0

* shown in cross-section.
** The groove and/or female face depth at 4.5 mm = 6 mm, at 5.5 mm = 7 mm and at 6.5 mm = 8 mm.

Production tolerances

Production tolerances for spiral-wound gaskets “SPIROFLEX” and filler material projection (thickness tolerance)

Works standard 127

Sectional steel strip $s^{+0,3}$ mm

Projection of the filler material strip on each side:

s	minimum	maximum
2,5 to 4,5	+ 0,10	+ 0,20
5,5	+ 0,15	+ 0,30
6,5	+ 0,20	+ 0,40
7,2	+ 0,40	+ 0,80

	Works standard 104	Tolerances in mm	ASME B16.20	Tolerances in mm
d1	DN < 100	+ 0,4	NPS < 3	+ 0,8
	100 < DN < 400	+ 0,6	3 < NPS < 24	+ 1,5
	400 < DN < 800	+ 0,8	24 < NPS < 60	+ 3,0
	800 < DN < 1600	+ 1,2		
	1600 < DN < 2000	+ 1,5		
d4	DN < 800	+ 0,8	NPS < 60	+ 0,8
	800 < DN < 1600	+ 1,5		
	1600 < DN < 2000	+ 2,0		

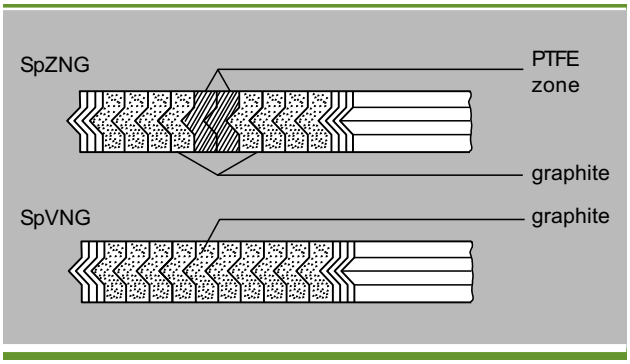
Metal-to-metal spiral gaskets (KNS)

This type of gasket has proven itself in many applications as well in valve construction for power plants. The gasket is in a groove and the flanges are tensioned against each other in such a way as to achieve metal-to-metal contact. The gasket is therefore in metal-to-metal contact. Full contact must be ensured under all operating conditions.

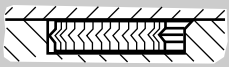
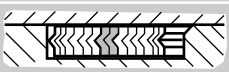
An alignment at stepped face design is also usual. However this gives rise to a risk that the inner and/or outer spirals will find their way into the gap.

Our Spiroflex gasket fulfils the particular requirement of the user for the lowest possible ferrite and chloride content in the filler. Spiroflex gaskets Profile SpZNG are virtually chloride and ferrite free. For temperatures up to 280 °C we recommend our Profile SpZNG with graphite and PTFE. Here the intermediate filler windings are made of PTFE. During use, a zone of increased surface pressure is produced due to the incompressibility of the PTFE material. Up to temperatures of approximately 350 °C we recommend our gaskets made of pure graphite. We supply gaskets with a thickness of 5.5 mm as double-corrugated models.

The application limit of approx. 350 °C is due to the peculiarities of metal-to-metal connections. Spiral-wound gaskets should not be used in metal-to-metal contact at temperatures above 350 °C without prior testing or experiment.



Gasket profiles

Profile	Cross-section
SpVNG	
SpZNG	

Gasket limiting values

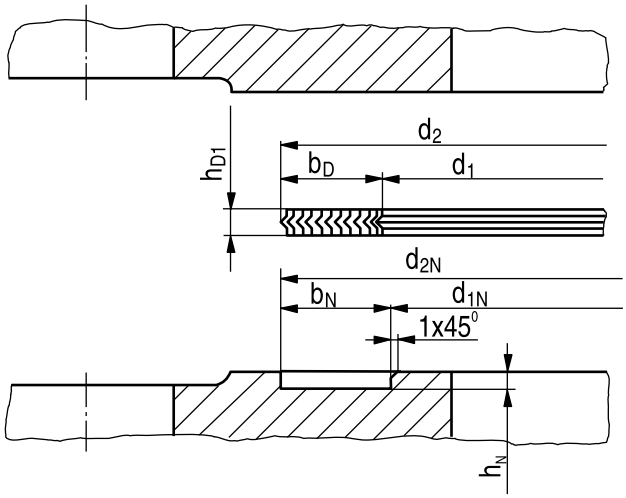
Material	1.4541	< 280 °C = graphite/PTFE > 280 °C = graphite > 350 °C not recommended
k_0K_D	[N/mm]	70 b_D
k_1	[mm]	1,4 b_D
R_Z*	[µm]	12,5 to 25

Works standard 121

Ordering example for a spiral-wound gasket “SPIROFLEX”, Profile SpZNG, works standard 121, for groove d_{1N} x d_{2N} x 3,3, made of…[1]:

Spiral-wound gasket, SpZNG, WN121, for groove 600 x 634 x 3.3, 1.4541/graphite/PTFE

1) Specify material when placing order



Recommended gasket and groove width

Ø-Range	40 to 400	80 to 800	160 to 1000	320 to 1600
b_D	6,0 to 8,5	8,6 to 12	12,1 to 17	17,1 to 25
b_N	8,0 to 10,0	10,5 to 14,0	14,5 to 19,0	19,5 to 28,0

Recommended application range

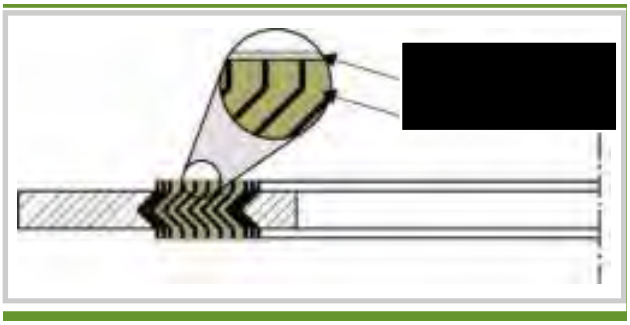
Range	d_2 < 1200	d_2 < 1600
Number of corrugations	1	2
$h_{D1}^{+0,3}$	4,5**	5,5**
d_{1N}	Specified by client	
$d_{2N}^{+0,2}$		
$b_N^{+0,1}$		
Depth of groove $h_N^{+0,1}$	3,3	3,6

* Recommended maximum roughness of the flange surfaces
** Height of the metal strips; the filler protrudes further

SPV2I-HT

This type of gasket unifies the features of high-temperature suitable metallic gaskets and the good return-ability behaviour of spiral wound gaskets.

Through the combination of modified spiral wound gaskets with a metallic layer a lowest possible leakage rate is also probable in a temperature range up to **750 °C**.



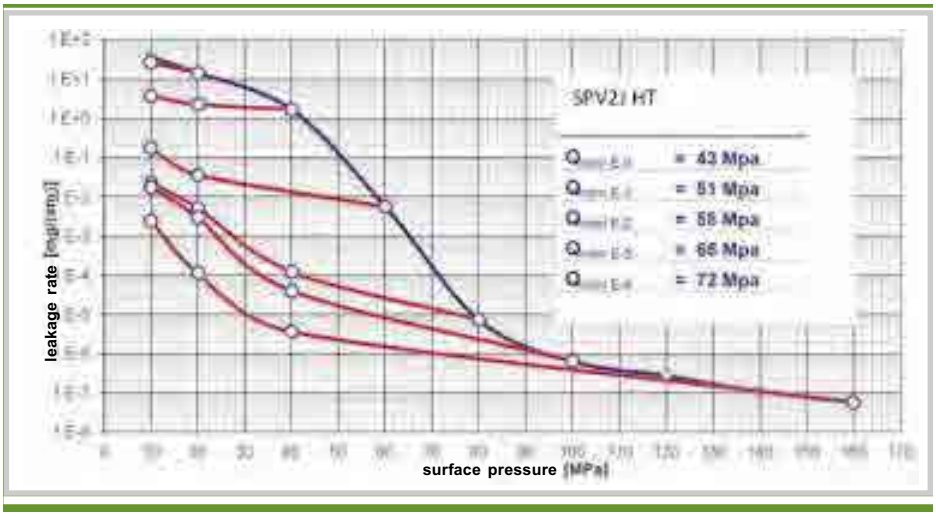
The decisive, leak relevant construction feature is the execution ofthe soft-material-filled spiral wound gasket, especially that the filling material lines up precisely with the metal band. So the metal band is in direct contact with the silver layer. This leads to a pure metallic sealing between flanges and metall band.

The elastic core additionally enables the compensation of flange distance increase, e.g. by thermic expansion. Up to 0,1 mm this gasket can rebound, thanks to the elastic spiral core.

In the leakage diagram according to EN 13555 this advantageous behaviour is visible in the nearly horizontally running returnability branches. A reduction of the surface pressure therefore does not necessaruly lead to a distincly higher leakage rate. In practice this also means a high blow-off proofness.

The mica filled core is covered by the metallic layer. Thereby the soft material is chambered and protected against volume loss through oxidation.

In contrast to conventional metallic gaskets this gasket only needs one third of the normally needed surface pressure.



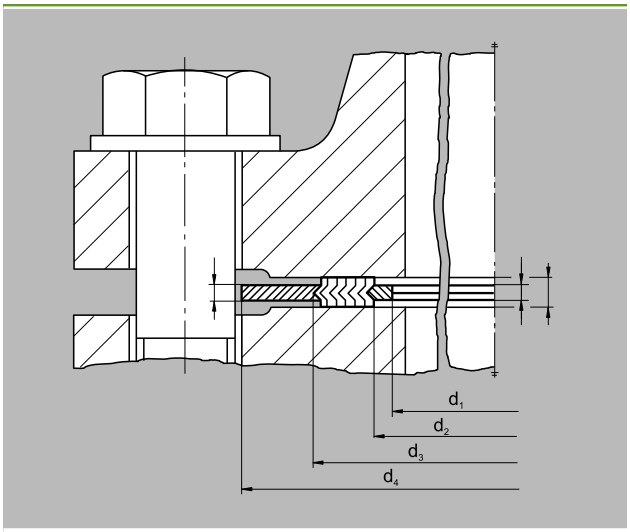
Spiroflex spiral-wound gaskets

Conforms to works standard 104 for DIN flanges

Ordering example for a spiral-wound gasket “SPIROFLEX”, Profile SpV2J, DN 150, PN 63 for DIN flanges, works standard 104, made of ...[1)]:

Spiral-wound gasket SpV2J, DN 150, PN 63, works standard 104, 1.4571 / graphite

1) Specify material when placing order



Works standard 104 for DIN flanges

					PN									
	d_1	d_2	d_3						d_4					
DN	10-400	10-400	10-40	63-400	10	16	25	40	63	100	160	250	320	400
10	18	24	36	36	46	46	46	46	56	56	56	67	67	67
15	22	28	40	40	51	51	51	51	61	61	61	72	72	78
20	27	33	47	47	61	61	61	61	-	-	-	-	-	-
25	34	40	54	54	71	71	71	71	82	82	82	83	92	104
32	43	49	65	65	82	82	82	82	-	-	-	-	-	-
40	48	54	70	70	92	92	92	92	103	103	103	109	119	135
50	57	66	84	84	107	107	107	107	113	119	119	124	134	150
65	73	82	102	104	127	127	127	127	137	143	143	153	170	192
80	86	95	115	119	142	142	142	142	148	154	154	170	190	207
100	108	120	140	144	162	162	168	168	174	180	180	202	229	256
125	134	146	168	172	192	192	194	194	210	217	217	242	274	301
150	162	174	196	200	217	217	224	224	247	257	257	284	311	348
175	183	195	221	227	247	247	254	265	277	287	284	316	358	402
200	213	225	251	257	272	272	284	290	309	324	324	358	398	442
250	267	279	307	315	327	328	340	352	364	391	388	442	488	-
300	318	330	358	366	377	383	400	417	424	458	458	538	-	-
350	363	375	405	413	437	443	457	474	486	512	-	-	-	-
400	414	426	458	466	488	495	514	546	543	572	-	-	-	-
500	518	530	566	574	593	617	624	628	657	704	-	-	-	-
600	618	630	666	674	695	734	731	747	764	813	-	-	-	-
700	718	730	770	778	810	804	833	852	879	950	-	-	-	-
800	818	830	874	882	917	911	942	974	988	-	-	-	-	-
900	910	930	974	982	1017	1011	1042	1084	1108	-	-	-	-	-
1000	1010	1030	1078	1086	1124	1128	1154	1194	1220	-	-	-	-	-
1200	1210	1230	1280	1290	1341	1342	1364	1398	1452	-	-	-	-	-
1400	1420	1450	1510	-	1548	1542	1578	1618	-	-	-	-	-	-
1600	1630	1660	1720	-	1772	1764	1798	1830	-	-	-	-	-	-
1800	1830	1860	1920	-	1972	1964	2000	-	-	-	-	-	-	-
2000	2020	2050	2120	-	2182	2168	2230	-	-	-	-	-	-	-

- Flanges compliant with the standard not available

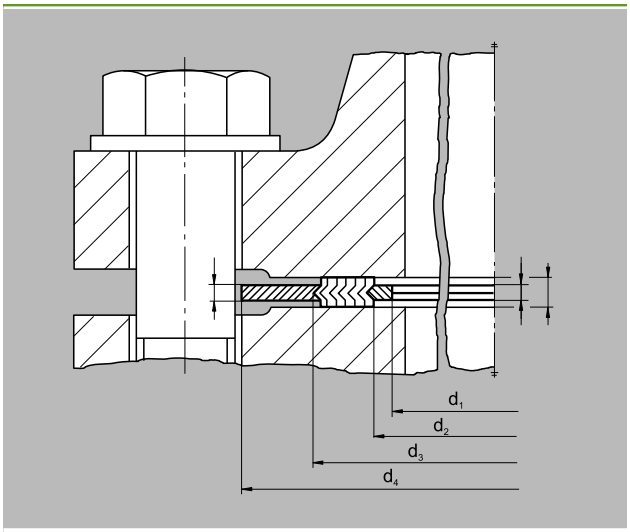
Dimensions in mm

Dimensions for spiral-wound gaskets in accordance with EN 12560-2 for flanges in accordance with ASME/ANSI B16.5

Ordering example for a spiral-wound gasket “SPIROFLEX”, Profile SpV2J, NPS 5, Class 600, in accordance with EN 12560-2 for flanges in accordance with ASME/ANSI B 16.5, made of...[1]:

Spiral-wound gasket SpV2J, NPS 5, Class 600, EN 12560-2, ASME/ ANSI B 16.5, 316L / graphite

1) Specify material when placing order



EN 12560-2 for flanges in accordance with ASME/ANSI B16.5

NPS	d_1 Class 150/300	600	900	1500	2500	d_2 Class 150/300	600	900	1500	2500	d_3 Class 150/600	900-2500	d_4 Class 150	300	600	900	1500	2500
½	14,3	14,3	14,3	14,3	14,3	19,1	19,1	19,1	19,1	19,1	31,8	31,8	47,8	54,1	54,1	63,5	63,5	69,9
¾	20,7	20,7	20,7	20,7	20,7	25,4	25,4	25,4	25,4	25,4	39,6	39,6	57,2	66,8	66,8	69,9	69,9	76,2
1	27,0	27,0	27,0	27,0	27,0	31,8	31,8	31,8	31,8	31,8	47,8	47,8	66,8	73,2	73,2	79,5	79,5	85,9
1¼	38,1	38,1	33,4	33,4	33,4	47,8	47,8	39,6	39,6	39,6	60,5	60,5	76,2	82,6	82,6	88,9	88,9	104,9
1½	44,5	44,5	41,3	41,3	41,3	54,1	54,1	47,8	47,8	47,8	69,9	69,9	85,9	95,3	95,3	98,6	98,6	117,6
2	55,6	55,6	52,4	52,4	52,4	69,9	69,9	58,7	58,7	58,7	85,9	85,9	104,9	111,3	111,3	143,0	143,0	146,1
2½	66,7	66,7	63,5	63,5	63,5	82,6	82,6	69,9	69,9	69,9	98,6	98,6	124,0	130,3	130,3	165,1	165,1	168,4
3	81,0	81,0	81,0	81,0	81,0	101,6	101,6	95,3	92,2	92,2	120,7	120,7	136,7	149,4	149,4	168,4	174,8	196,9
4	106,4	106,4	106,4	106,4	106,4	127,0	120,7	120,7	117,6	117,6	149,4	149,4	174,8	181,1	193,8	206,5	209,6	235,0
5	131,8	131,8	131,8	131,8	131,8	155,7	147,6	147,6	143,0	143,0	177,8	177,8	196,9	215,9	241,3	247,7	254,0	279,4
6	157,2	157,2	157,2	157,2	157,2	182,6	174,8	174,8	171,5	171,5	209,6	209,6	222,3	251,0	266,7	289,1	282,7	317,5
8	215,9	209,6	196,9	196,9	196,9	233,4	225,6	222,3	215,9	215,9	263,7	257,3	279,4	308,1	320,8	358,9	352,6	387,4
10	268,3	260,4	246,1	246,1	246,1	287,3	274,6	276,4	266,7	270,0	317,5	311,2	339,9	362,0	400,1	435,1	435,1	476,3
12	317,5	317,5	292,1	292,1	292,1	339,9	327,2	323,9	323,9	317,5	374,7	368,3	409,7	422,4	457,2	498,6	520,7	549,4
14	349,3	349,3	320,8	320,8	-	371,6	362,0	355,6	362,0	-	406,4	400,1	450,9	485,9	492,3	520,7	577,9	-
16	400,0	400,0	374,7	368,3	-	422,4	412,8	412,8	406,4	-	463,6	457,2	514,4	539,8	565,2	574,8	641,4	-
18	449,3	449,3	425,5	425,5	-	474,7	469,9	463,6	463,6	-	527,1	520,7	549,4	596,9	612,9	638,3	704,9	-
20	500,0	500,0	482,6	476,3	-	525,5	520,7	520,7	514,4	-	577,9	571,5	606,6	654,1	682,8	698,5	755,7	-
24	603,3	603,3	590,6	577,9	-	628,7	628,7	628,7	616,0	-	685,8	679,5	717,6	774,7	790,7	838,2	901,7	-

- Flanges compliant with the standard not available

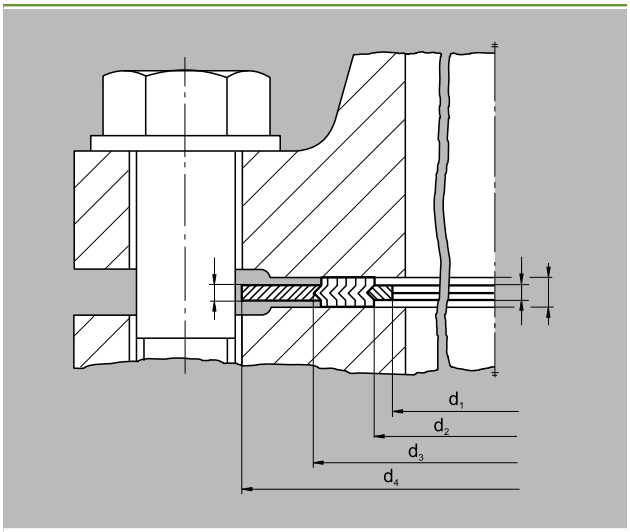
Dimensions in mm

Dimensions for spiral-wound gaskets in accordance with ASME B16.20 for flanges in accordance with ASME/ANSI B16.5

Ordering example for a spiral-wound gasket “SPIROFLEX”, Profile SpV2J, NPS 5, Class 600, in accordance with ASME B16.20 for flanges in accordance with ASME/ANSI B 16.5, made of ...[1]:

Spiral-wound gasket SpV2J, NPS 5, Class 600, ASME B16.20, ASME/ ANSI B 16.5, 316L / graphite

1) Specify material when placing order
2) With metric bolts it can be advisable to use gaskets in the d_4 size which is approx. 3 mm smaller Sizes deviating from ASME B 16.20 should in particular be reconciled.



For flanges in accordance with ASME/ANSI B16.5

NPS	d_1 Class 150/300	d_1 Class 400/600	d_1 Class 900	d_1 Class 1500	d_1 Class 2500	d_2 Class 150/300	d_2 Class 400/600	d_2 Class 900	d_2 Class 1500	d_2 Class 2500	d_3 Class 150-600	d_3 Class 900-2500	d_4 Class 150	d_4 Class 300	d_4 Class 400	d_4 Class 600	d_4 Class 900	d_4 Class 1500	d_4 Class 2500
½	14,2	14,2	-	14,2	14,2	19,1	19,1	-	19,1	19,1	31,8	31,8	47,8	54,1	-	54,1	-	63,5	69,9
¾	20,6	20,6	-	20,6	20,6	25,4	25,4	-	25,4	25,4	39,6	39,6	57,2	66,8	-	66,8	-	69,9	76,2
1	26,9	26,9	-	26,9	26,9	31,8	31,8	-	31,8	31,8	47,8	47,8	66,8	73,2	-	73,2	-	79,5	85,9
1¼	38,1	38,1	-	33,3	33,3	47,8	47,8	-	39,6	39,6	60,5	60,5	76,2	82,6	-	82,6	-	88,9	104,9
1½	44,5	44,5	-	41,4	41,4	54,1	54,1	-	47,8	47,8	69,9	69,9	85,9	95,3	-	95,3	-	98,6	117,6
2	55,6	55,6	-	52,3	52,3	69,9	69,9	-	58,7	58,7	85,9	85,9	104,9	111,3	-	111,3	-	143,0	146,1
2½	66,5	66,5	-	63,5	63,5	82,6	82,6	-	69,9	69,9	98,6	98,6	124,0	130,3	-	130,3	-	165,1	168,4
3	81,0	81,0	81,0	81,0	81,0	101,6	101,6	95,3	92,2	92,2	120,7	120,7	136,7	149,4	-	149,4	168,4	174,8	196,9
4	106,4	106,4	106,4	106,4	106,4	127,0	120,7	120,7	117,6	117,6	149,4	149,4	174,8	181,1	177,8	193,8	206,5	209,6	235,0
5	131,8	131,8	131,8	131,8	131,8	155,7	147,6	147,6	143,0	143,0	177,8	177,8	196,9	215,9	212,9	241,3	247,7	254,0	279,4
6	157,2	157,2	157,2	157,2	157,2	182,6	174,8	174,8	171,5	171,5	209,6	209,6	222,3	251,0	247,7	266,7	289,1	282,7	317,5
8	215,9	209,6	196,9	196,9	196,9	233,4	225,6	222,3	215,9	215,9	263,7	257,3	279,4	308,1	304,8	320,8	358,9	352,6	387,4
10	268,2	260,4	246,1	246,1	246,1	287,3	274,6	276,4	266,7	270,0	317,5	311,2	339,9	362,0	358,9	400,1	435,1	435,1	476,3
12	317,5	317,5	292,1	292,1	292,1	339,9	327,2	323,9	323,9	317,5	374,7	368,3	409,7	422,4	419,1	457,2	498,6	520,7	549,4
14	349,3	349,3	320,8	320,8	-	371,6	362,0	355,6	362,0	-	406,4	400,1	450,9	485,9	482,6	492,3	520,7	577,9	-
16	400,1	400,1	374,7	368,3	-	422,4	412,8	412,8	406,4	-	463,6	457,2	514,4	539,8	536,7	565,2	574,8	641,4	-
18	449,3	449,3	425,5	425,5	-	474,7	469,9	463,6	463,6	-	527,1	520,7	549,4	596,9	593,9	612,9	638,3	704,9	-
20	500,1	500,1	482,6	476,3	-	525,5	520,7	520,7	514,4	-	577,9	571,5	606,6	654,1	647,7	682,8	698,5	755,7	-
24	603,3	603,3	590,6	577,9	-	628,7	628,7	628,7	616,0	-	685,8	679,5	717,6	774,7	768,4	790,7	838,2	901,7	-

- Flanges compliant with the standard not available

Dimensions in mm

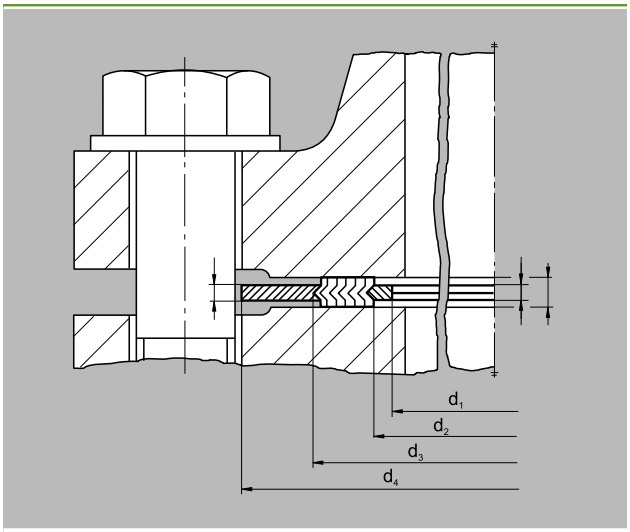
Dimensions for spiral-wound gaskets in accordance with ASME B16.20 for flanges in accordance with ASME/ANSI B16.47 Series B

(previously API 601 for flanges in accordance with API 605)

Ordering example for a spiral-wound gasket “SPIROFLEX”, Profile SpV2J, NPS 30, Class 150, in accordance with ASME B16.20 for flanges in accordance with ASME/ANSI B 16.47 Series B, made of ...[1]:

Spiral-wound gasket SpV2J, NPS 30, Class 150, ASME B16.20, ASME/ ANSI B 16.47 Series B, 316L / graphite

1) Specify material when placing order



For flanges in accordance with ASME/ANSI B16.47 Series B

	d_1 Class					d_2 Class					d_3 Class					d_4 Class				
NPS	150	300	400	600	900	150	300	400	600	900	150	300	400	600	900	150	300	400	600	900
26	654,1	654,1	654,1	644,7	666,8	673,1	673,1	666,8	663,7	692,2	698,5	711,2	698,5	714,5	749,3	725,4	771,7	746,3	765,3	838,2
28	704,9	704,9	701,8	692,2	717,6	723,9	723,9	714,5	704,9	743,0	749,3	762,0	749,3	755,7	800,1	776,2	825,5	800,1	819,2	901,7
30	755,7	755,7	752,6	752,6	781,1	774,7	774,7	765,3	778,0	806,5	800,1	812,8	806,5	828,8	857,3	827,0	886,0	857,3	879,6	958,9
32	806,5	806,5	800,1	793,8	838,2	825,5	825,5	812,8	831,9	863,6	850,9	863,6	860,6	882,7	914,4	881,1	939,8	911,4	933,5	1016,0
34	857,3	857,3	850,9	850,9	895,4	876,3	876,3	866,9	889,0	920,8	908,1	914,4	911,4	939,8	971,6	935,0	993,9	962,2	997,0	1073,2
36	908,1	908,1	898,7	901,7	920,8	927,1	927,1	917,7	939,8	946,2	958,9	965,2	965,2	990,6	997,0	987,6	1047,8	1022,4	1047,8	1124,0
38	958,9	971,6	952,5	952,5	1009,7	974,6	1009,7	971,6	990,6	1035,1	1009,7	1047,8	1022,4	1041,4	1085,9	1044,7	1098,6	1073,2	1104,9	1200,2
40	1009,7	1022,4	1000,3	1009,7	1060,5	1022,4	1060,5	1025,7	1047,8	1098,6	1063,8	1098,6	1076,5	1098,6	1149,4	1095,5	1149,4	1127,3	1155,7	1251,0
42	1060,5	1085,9	1051,1	1066,8	1111,3	1079,5	1111,3	1076,5	1104,9	1149,4	1114,6	1149,4	1127,3	1155,7	1200,2	1146,3	1200,2	1178,1	1219,2	1301,8
44	1111,3	1124,0	1104,9	1111,3	1155,7	1124,0	1162,1	1130,3	1162,1	1206,5	1165,4	1200,2	1181,1	1212,9	1257,3	1197,1	1251,0	1231,9	1270,0	1368,6
46	1162,1	1178,1	1168,4	1162,1	1219,2	1181,1	1216,2	1193,8	1212,9	1270,0	1224,0	1254,3	1244,6	1263,7	1320,8	1255,8	1317,8	1289,1	1327,2	1435,1
48	1212,9	1231,9	1206,5	1219,2	1270,0	1231,9	1263,7	1244,6	1270,0	1320,8	1270,0	1311,4	1295,4	1320,8	1371,6	1306,6	1368,6	1346,2	1390,7	1485,9
50	1263,7	1267,0	1257,3	1270,0	-	1282,7	1317,8	1295,4	1320,8	-	1325,6	1355,9	1346,2	1371,6	-	1357,4	1419,4	1403,4	1447,8	-
52	1314,5	1317,8	1308,1	1320,8	-	1333,5	1368,6	1346,2	1371,6	-	1376,4	1406,7	1397,0	1422,4	-	1408,2	1470,2	1454,2	1498,6	-
54	1365,3	1365,3	1352,6	1378,0	-	1384,3	1403,4	1403,4	1428,8	-	1422,4	1454,2	1454,2	1479,6	-	1463,8	1530,4	1517,7	1555,8	-
56	1422,4	1428,8	1403,4	1428,8	-	1444,8	1479,6	1454,2	1479,6	-	1477,8	1524,0	1505,0	1530,4	-	1514,6	1593,9	1568,5	1612,9	-
58	1478,0	1484,4	1454,2	1473,2	-	1500,4	1535,2	1505,0	1536,7	-	1528,8	1573,3	1555,8	1587,5	-	1579,6	1655,8	1619,3	1663,7	-
60	1535,2	1557,3	1517,7	1530,4	-	1557,3	1589,0	1568,5	1593,9	-	1586,0	1630,4	1619,3	1644,7	-	1630,4	1706,6	1682,8	1733,6	-

- Flanges compliant with the standard not available

Dimensions in mm

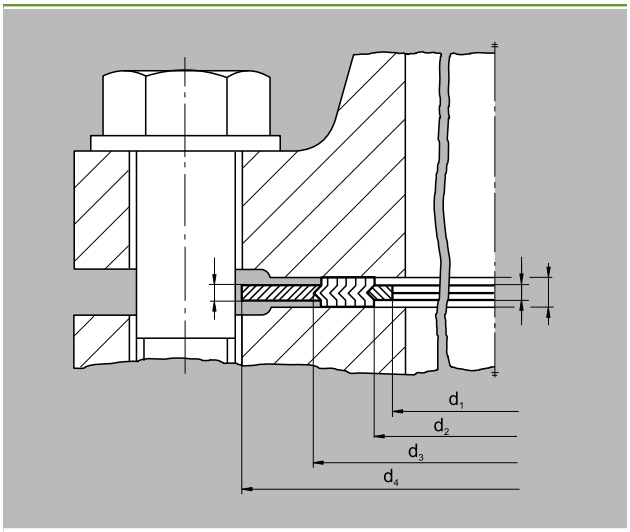
Dimensions for spiral-wound gaskets in accordance with ASME B16.20 for flanges in accordance with ASME/ANSI B16.47 Series A

(previously API 601 for flanges in accordance with MSS SP-44)

Ordering example for a spiral-wound gasket “SPIROFLEX”, Profile SpV2J, NPS 30, Class 150, ASME B16.20, ASME/ANSI B16.47 Series A, made of ...[1]:

Spiral-wound gasket SpV2J, NPS 30, Class 150, ASME B16.20, ASME/ ANSI B 16.47 Series A, 316L / graphite

1) Specify material when placing order

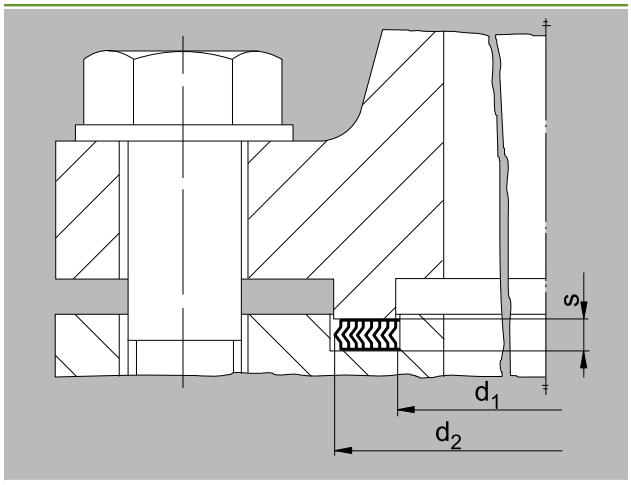


For flanges in accordance with ASME/ANSI B16.47 Series A

	d_1 Class					d_2 Class					d_3 Class					d_4 Class				
NPS	150	300	400	600	900	150	300	400	600	900	150	300	400	600	900	150	300	400	600	900
26	654,1	654,1	660,4	647,7	660,4	673,1	685,8	685,8	685,8	685,8	704,9	736,6	736,6	736,6	736,6	774,7	835,2	831,9	866,9	882,7
28	704,9	704,9	711,2	698,5	711,2	723,9	736,6	736,6	736,6	736,6	755,7	787,4	787,4	787,4	787,4	831,9	898,7	892,3	914,4	946,2
30	755,7	755,7	755,7	755,7	774,7	774,7	793,8	793,8	793,8	793,8	806,5	844,6	844,6	844,6	844,6	882,7	952,5	946,2	971,6	1009,7
32	806,5	806,5	812,8	812,8	812,8	825,5	850,9	850,9	850,9	850,9	860,6	901,7	901,7	901,7	901,7	939,8	1006,6	1003,3	1022,4	1073,2
34	857,3	857,3	863,6	863,6	863,6	876,3	901,7	901,7	901,7	901,7	911,4	952,5	952,5	952,5	952,5	990,6	1057,4	1054,1	1073,2	1136,7
36	908,1	908,1	917,7	917,7	920,8	927,1	955,8	955,8	955,8	958,9	968,5	1006,6	1006,6	1006,6	1009,7	1047,8	1117,6	1117,6	1130,3	1200,2
38	958,9	952,5	952,5	952,5	1009,7	977,9	977,9	971,6	990,6	1035,1	1019,3	1016,0	1022,4	1041,4	1085,9	1111,3	1054,1	1073,2	1104,9	1200,2
40	1009,7	1003,3	1000,3	1009,7	1060,5	1028,7	1022,4	1025,7	1047,8	1098,6	1070,1	1070,1	1076,5	1098,6	1149,4	1162,1	1114,6	1127,3	1155,7	1251,0
42	1060,5	1054,1	1051,1	1066,8	1111,3	1079,5	1073,2	1076,5	1104,9	1149,4	1124,0	1120,9	1127,3	1155,7	1200,2	1219,2	1165,4	1178,1	1219,2	1301,8
44	1111,3	1104,9	1104,9	1111,3	1155,7	1130,3	1130,3	1130,3	1162,1	1206,5	1178,1	1181,1	1181,1	1212,9	1257,3	1276,4	1219,2	1231,9	1270,0	1368,6
46	1162,1	1152,7	1168,4	1162,1	1219,2	1181,1	1178,1	1193,8	1212,9	1270,0	1228,9	1228,9	1244,6	1263,7	1320,8	1327,2	1273,3	1289,1	1327,3	1435,1
48	1212,9	1209,8	1206,5	1219,2	1270,0	1231,9	1235,2	1244,6	1270,0	1320,8	1279,7	1286,0	1295,4	1320,8	1371,6	1384,3	1324,1	1346,2	1390,7	1485,9
50	1263,7	1244,6	1257,3	1270,0	-	1282,7	1295,4	1295,4	1320,8	-	1333,5	1346,2	1346,2	1371,6	-	1435,1	1378,0	1403,4	1447,8	-
52	1314,5	1320,8	1308,1	1320,8	-	1333,5	1346,2	1346,2	1371,6	-	1384,3	1397,0	1397,0	1422,4	-	1492,3	1428,8	1454,2	1498,6	-
54	1358,9	1352,6	1352,6	1378,0	-	1384,3	1403,4	1403,4	1428,8	-	1435,1	1454,2	1454,2	1479,6	-	1549,4	1492,3	1517,7	1555,8	-
56	1409,7	1403,4	1403,4	1428,8	-	1435,1	1454,2	1454,2	1479,6	-	1485,9	1505,0	1505,0	1530,4	-	1606,6	1543,1	1568,5	1612,9	-
58	1460,5	1447,8	1454,2	1473,2	-	1485,9	1511,3	1505,0	1536,7	-	1536,7	1562,1	1555,8	1587,5	-	1663,7	1593,9	1619,3	1663,7	-
60	1511,3	1524,0	1517,7	1530,4	-	1536,7	1562,1	1568,5	1593,9	-	1587,5	1612,9	1619,3	1644,7	-	1714,5	1644,7	1682,8	1733,6	-

- Flanges compliant with the standard not available

Dimensions in mm



Spiral gaskets "SPIROFLEX" for flanges with tongue and groove

Gasket thickness

Measurements in mm	DN				NPS				s[2]
		to	80	resp.		to	3		2,5
	100	to	300	resp.	4	to	12		3,0
	350	to	900	resp.	14	to	36		3,5
		for	1000	resp.	40				4,5

Conforming to EN 1514-1 Form TG

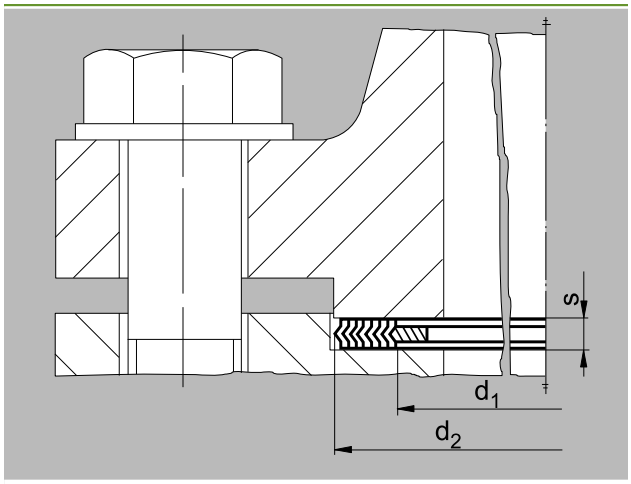
Ordering example for a spiral-wound gasket "SPIROFLEX", Form TG, Profile SpV1, in accordance with EN 1514-1, DN 100, made of ...[1]:

Spiral-wound gasket TG, SpV1, EN 1514-1, DN 100, 1.4571 / graphite

Conforming to EN 12560-1 Form TG

Ordering example for a spiral-wound gasket "SPIROFLEX", Form TG, Profile SpV1, NPS 5, EN 12560-1, made of ...[1]:

Spiral-wound gasket TG, SpV1, NPS 5", EN 12560-1, 1.4571 / graphite



Spiral gaskets "SPIROFLEX" for flanges with male and female

Gasket thickness

Measurements in mm	DN				NPS				s[2]
	10	to	80	resp.	⅜	to	3		$2,5^{+0,3}$
	100	to	300	resp.	4	to	12		$3,0^{+0,3}$
	350	to	900	resp.	14	to	36		$3,5^{+0,3}$

Conforming to EN 1514-1 Form SR

Ordering example for a spiral-wound gasket "SPIROFLEX", Form SR, Profile SpV1J, DN 100, EN 1514-1, made of ...[1]:

Spiral-wound gasket SR, SpV1J, DN 100, EN 1514-1, 1.4571 / graphite

Conforming to EN 12560-1 Form SR

Ordering example for a spiral-wound gasket "SPIROFLEX", Form SR, Profile SpV1J, NPS 5, EN 12560-1, made of ...[1]:

Spiral-wound gasket SR, SpV1J, NPS 5", EN 12560-1, 1.4571 / graphite

* see section "General Dimension Tables for DIN, ASME/ANSI, BS for flat gaskets"

[1] Specify material when placing order

[2] Take care with complicated fittings.