












seal material and profile overview

standard materials specification	properties	standard	unit	polyurethanes								
				s-mart PU standard polyurethane	s-mart HPU hydrolysis-resistant polyurethane	s-mart GPU polyurethane for giant seals and big cross sections	s-mart LTPU low-temperature polyurethane	s-mart HTPU high-temperature polyurethane	s-mart SPU self-lubricated polyurethane	s-mart XPU hard polyurethane	s-mart XHPU hard hydrolysis resistant polyurethane	s-mart XSPU hard self-lubricated polyurethane
colour				 green	 red	 red	 blue	 white	 grey/black	 dark green	 dark red/yellow	 dark grey
hardness	DIN 53505 / ISO 868	Shore A	95 ⁺²	95 ⁺²	95 ⁺²	95 ⁺²	96 ^{+2*}	95 ⁺²				
hardness	DIN 53505 / ISO 868	Shore D	48 ⁺³	48 ⁺³	47 ⁺³	48 ⁺³	50 ^{+3*}	48 ⁺³	57 ⁺³	60 ⁺³	57 ⁺³	
ball indentation hardness	DIN 53456 H 135/30	N/mm ²										
density	DIN 53479 / ISO 1183	g/cm ³	1,20	1,20	1,20	1,17	1,17*	1,24	1,21	1,22	1,26	
100% modulus	DIN 53504	N/mm ²	≥12	≥13	≥11	≥12	11	17	≥18	≥20	24	
tensile strength / yield stress	DIN 53504[53455] ASTM D 4745-79	N/mm ²	≥40	≥50	≥45	≥50	45	50	≥50	≥50	45	
compressive strength	DIN 53455	N/mm ²										
elongation at break	DIN 53504[53455] ASTM D 4745-79	%	≥430	≥330	≥280	≥450	500	380	≥400	≥350	350	
modulus of elasticity - tensile test	DIN 53457	N/mm ²										
compression set 70°C/24h 20% Def		%	≤30	≤27	≤30	≤27		25	24	26	24	
100°C/24h 20% Def		%	≤35	≤33	≤40	≤33		30	29	30	30	
100°C /22h	DIN 53517	%										
175°C /24h	DIN 53517	%										
rebound resilience	DIN 52512	%	42	29	43	50						
tear strength	DIN 53515	N/mm	≥100	≥100	≥40	≥80	80	120	≥140	170	160	
abrasion	DIN 53516	mm ³	18	17	25	15	15	17	18	20	20	
minimum service temperature		°C	-30	-20	-30	-50	-35	-20	-30	-20	-20	
maximum service temperature		°C	+110	+110	+110	+110	+135	+110	+110	+110	+110	
mineral oil based resistance		RT	+	+	+	+		+	+	+	+	
		60°C	+	+	+	+		+	+	+	+	
HFA-E water +oil emuls. resistance		RT	0	+	+	0		+	0	+	+	
		60°C	-	+	0	-		+	-	+	+	
water resistance		RT	+	+	+	+		+	+	+	+	
		60°C	-	+	0	-		+	-	+	+	

due to our innovative manufacturing system, we are able to provide you any special seal profile

legend;
+ suitable
- not recommended
0 unknown data or limited resistance
RT room temperature (20°C)
* ISO standard
** ASTM standard

rubber elastomers					thermoplastics										
S-smart NBR acrylonitrile-butadiene-rubber	S-smart HNBR hydrogenated acrylonitrile-butadiene rubber	S-smart FKM VITON® / fluorocarbon rubber	S-smart EPDM ethylene propylene diene rubber	S-smart MVQ vinyl methyl silicone rubber	S-smart TFE/P - ALFAS tetrafluoroethylene propylene rubber (AFLAS)	S-smart PTFE virgin polytetrafluoro ethylene	S-smart PTFE glass polytetrafluoro ethylene filled with 15% Glass Fibre + 5% MoS ₂	S-smart PTFE bronze polytetrafluoro ethylene filled with 40% Bronze	S-smart PTFE carbon polytetrafluoro ethylene filled with 25% Carbon	S-smart PTFE graphite polytetrafluoro ethylene filled with 15% Graphite	S-smart PTFE ekonol polytetrafluoro ethylene filled with 10% Ekonol	S-smart POM polyoxymethylene (polyacetal)	S-smart PA polyamide	S-smart PAEK polyaryletherketone	S-smart UHMWPE ultra high molecular weight polyethylene
●	●●●	●	●	●●	●	○	●	●	●	●	●	○●	●●	●	○●
black	black/green	brown	black	reddish brown/blue	black	white	grey	bronze (brown)	black	dark grey	cream	white/black	natural/black	cream	natural/white
85 ^{±5}	85 ^{±5}	83 ^{±5}	85 ^{±5}	85 ^{±5}	83 ^{±5}										
						57	60	64	65	60 ^{±3*}	56 ^{±3*}	82	77	86	61 ^{±3*}
										26 ^{±5}	28 ^{±5}				36
1,31	1,22	2,30	1,22	1,52	1,60	2,17	2,25	3,00	2,10	2,13	2,04	1,41	1,15	1,32	0,93
≥11	≥10	≥5	≥9	≥5	8										
≥16	≥18	≥8	≥12	≥7	13	27	18	22	15	16 ^{**}	20 ^{**}	62	65	97	40 ^{**}
											11				88
≥130	≥180	≥200	≥110	≥130	200	300	200	280	180	140 ^{**}	250 ^{**}	40	120	≥50	50 ^{**}
												2600	1800	3600	680
≤22	≤22		≤15												
		≤20		≤15	29										
28	29	7	38	44											
21	20	15	21		19										
90	90	150	120		110										
-30	-25	-20	-50	-60	-10	-200	-200	-200	-200	-200	-200	-50	-40		-200
+100	+150	+200	+150	+200	+200	+260	+260	+260	+260	+260	+260	+100	+100	+260	+80
+	+	+	-	+/0	+	+	+	+	+	+	+	+	+	+	+
+	+	+	-	+/0	+	+	+	+	+	+	+	+	+	+	+
+	+	+	-	0	+	+	+	+	+	+	+	+	+	+	+
+	+	0	-	0	+	+	+	+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+	+	+	+	+	+	0	+	+
+	+	+	+	+	+	+	+	+	+	+	+	+	0	+	+

in any diameter (up to 4.000 mm). do not hesitate to contact our technical department for further informations

complete in product range and services

at seal-mart we offer you:

- sealing solutions tailored to your specifications
- partnership from the design phase to serial production
- just-in-time manufacturing of seals and components up to 4.000 mm diameter
- production of industrial gaskets of any kind
- production of advanced engineering plastics products (AEPP)

quality makes the difference

quality is at the core of everything we do. production breakdowns due to sealing problems can cause huge losses. therefore, we make every effort to deliver high quality sealing products that meet our customers' needs. at seal-mart, we are constantly striving to enforce and improve our quality standards, since customers demand the highest quality sealing solutions to compete in their highly competitive markets.

superior manufacturing concept

at seal-mart we know that only state-of-the-art technology can provide us with an edge on our competitors. a rapidly changing environment demanded for a new production concept that surpasses our customers' requirements, such as:

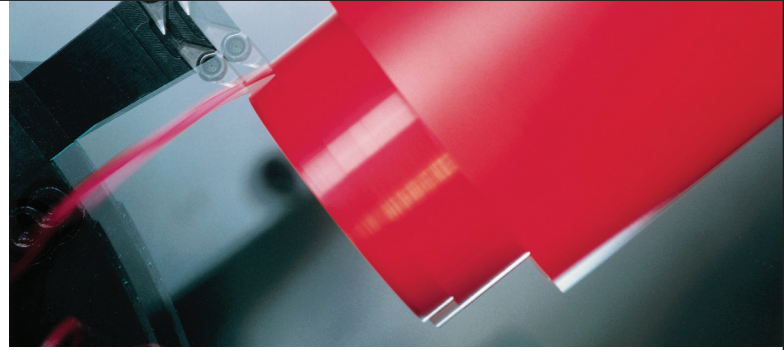
- delivery on demand with short cycle times
- no mould or tooling limitations
- no stock requirements for our customers
- seal engineering to customer specification

to face this challenge, we manufacture seals with cutting edge CNC turning technology to satisfy the very specific needs of every customer, in every industry.

classification of sealing materials

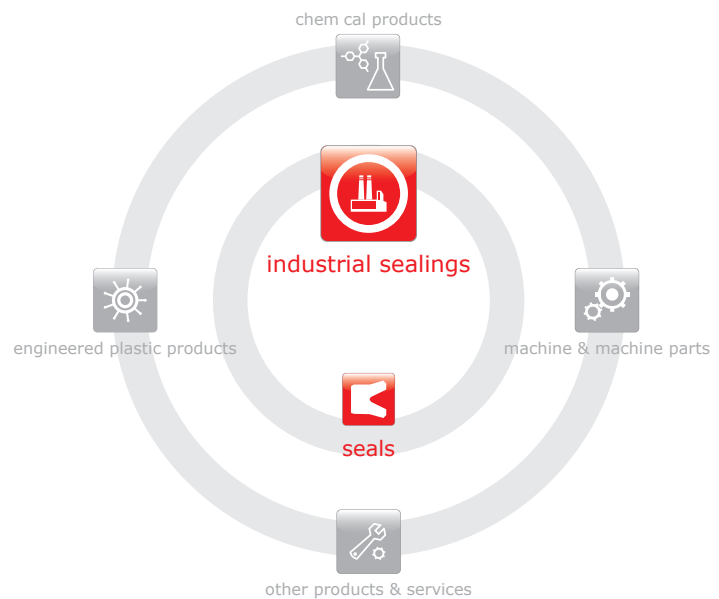
in sealing technology, mainly representatives of two groups of macromolecular (polymeric) substances are used, i.e. substances of the groups of elastomers and thermoplastics.

macromolecular substances are organic compounds whose molecules exist of several thousands, often even millions, of atoms which are known as macro, giant, string or chain molecules. they can be created either by modification of highly molecular natural materials (e.g. natural rubber) or by depositing low-molecular elements (so called monomers) through various chemical reactions (synthetic materials, plastics).

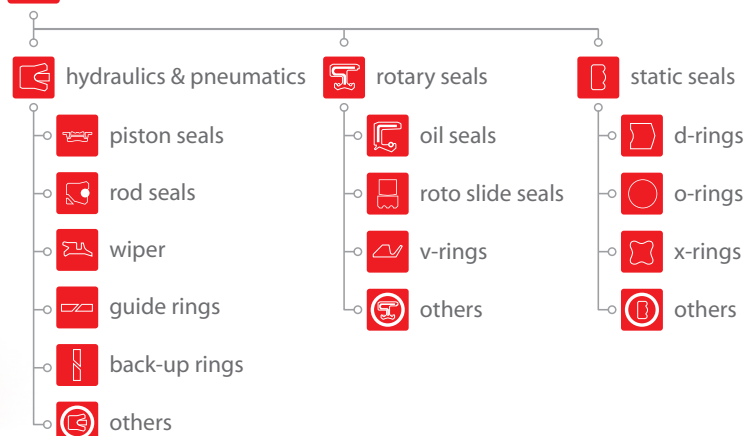


we serve the following industries

- agricultural industry
- automotive industry
- cement, lime, ceramic & refractory industry
- chemical industry
- construction industry
- electronic industry
- food and pharmaceutical industry
- general mechanical engineering
- mining industry
- non-ferrous industry
- oil & gas industry
- plastic & rubber processing industry
- power supply industry
- pulp & paper industry
- shipbuilding industry
- steel industry
- textile industry
- water supply & water treatment industry
- wood & wood processing industry
























seals



PISTON SEALS

K01-P  0 1 3	K01-R  0 1 3	K02-P  0 1	K02-PD  0	K02-R  0 1	K02-RD  0
K02-SA  2	K02-SB  1	K03-P  0	K03-F  0	K03-S  0	K04-P  0
K04-PD  0	K05-P  0 1	K05-R  0 1 3	K05-SA  1 3	K05-SB  1 3	K05-SE  1 3
K06-P  0 1 3	K06-R  0 1 3	K06-SA  1 3	K06-SB  3	K07-P  0	K08-D  0 1 3
K08-DS  0 1 3	K08-E  0 1 3	K08-ES  0 1 3	K08-P  1	K08-SA  1 3	K08-SB  1 3
K08-SC  1 3	K08-SD  1	K08-SE  2 3	K08-SF  1 3	K08-SG  1 3	K08-SH  1 3
K09-N  0	K09-D  0	K09-H  0	K09-F  0	K09-SA  2 3	K09-SB  2 3
K09-SC  2	K09-SD  2	K09-SE  3	K09-SF  3	K09-SJ  2 3	K09-SL  3
K09-SN  3	K09-SO  1	K1012-M  0 3	K1012-SA  3	K1012-T  0	K1315-T  0
K16-A  0 1 3	K16-B  0	K16-SA  1	K17-P  0 1	K17-R  0	K19-F  0 1 3
K20-R  0	K21-P  0	K22-P  0	K22-R  0	K23-N  0 1	K23-D  0
K23-H  1	K23-F  0 1	K23-SA  1	K23-SB  3	K24-P  0	K32-P  0
K35-P  0 1 3	K60  1 3	K61  1 3	K62  2 3	K64  3	K65  2 3
K66  2 3	K67  3	K68  3	K68-B  3	K69  3	K70  3
K71  3	K72  3	K73  3	K74  3	K75  1	K76  1
K77  1	K78  2 3	K80  2	K82  2 3	K86  1	K88  2









ROD SEALS

S01-P  0 1	S01-R  0 1 3	S01-SC  1 3	S02-P  0	S02-PD  0	S02-R  0 1
S02-RD  0	S02-S  0 1	S02-SA  2	S03-P  0	S03-F  0	S03-S  0
S04-P  0	S04-PD  0	S05-P  0 1	S05-R  0 1 3	S06-P  0 1 3	S06-R  0 1 3
S06-SA  1 3	S07-P  0 1	S08-P  0	S08-PE  0	S08-R  0	S08-SA  1
S08-SB  1	S09-D  0 1 3	S09-DS  0 1 3	S09-E  0 1 3	S09-ES  0	S09-P  0
S09-SA  1 3	S09-SB  1 3	S09-SD  1	S09-SF  1 3	S09-SG  1 3	S09-SH  1
S1012-T  0	S1012-M  0 3	S1012-SA  2 3	S1315-T  0	S16-A  0 1 3	S16-B  0
S16-SB  1	S17-P  0 1 3	S17-R  0	S17-SA  1	S17-SB  1	S18-P  0 1
S18-R  0	S19-F  0 1 3	S20-R  0	S21-P  0	S22-P  0	S22-R  0
S24-P  0 1	S2527-F  0	S2931-F  0 1	S32-P  0	S32-SA  2 3	S35-P  0 1 3
S60  2 3	S61  1	S62  2 3	S63  2 3	S64  1	S65  1
S67  1	S68  2 3	S69  1	S70  2 3	S73  1	S75  2
S76  1	S78  3				








WIPER

A01-A  0 1 3	A01-B  0 1	A02-A  0 1 3	A02-B  0 1 3	A02-I  0	A02-SA  1 3
A02-SB  1	A03-A  0	A03-SA  2 3	A03-SC  2 3	A03-SD  2 3	A04-A  0
A04-B  0 1	A05-A  0	A05-B  0	A05-I  0	A06-A  0	A07-A  0
A08-A  0	A08-B  0	A09-A  0	A10-A  0	A11-A  0 1 3	A11-I  0
A11-SC  1 3	A11-SF  2 3	A11-SG  2 3	A11-SJ  2 3	A11-SK  1 3	A11-SL  1
A12-A  0	A12-B  0	A13-A  0	A25-F  0 1 3	A26-F  0 1 3	A27-F  0 1
A27-SA  1 3	A27-SB  1 3	A27-SC  1 3	A27-SD  1	A62-A  3	A62-C  3
A63  1	A64  3	A65  2	A66  3	A67  2	A68  1 3
A69  1	A70  1	A71  1 3	A72  1	A73  1	A74  1
A75  1					

























GUIDE RINGS













F01  0 1 3	F02  0	F03  0	F04  0	F05  0 1	F06  0
F07  0	F08  0				


BACKUP RINGS



ST08  0 1 3	ST09  0 1 3	ST10  0	ST11  0	ST12  0	ST13  0
ST60  3					


OIL SEALS











R01-P  0	R01-R  0	R01-AF  0	R01-AS  0	R01-F  0 1	R02-P  0
R02-R  0	R60-A  2 3	R60-C  3	R60-D  2	R60-F  2	R60-Y  2
R61-A  2 3	R61-C  3	R61-D  2	R61-F  2	R61-G  2	R61-Y  2
R62-A  2 3	R62-C  3	R62-D  2	R62-E  2 3	R63-A  2	R63-C  2
R63-D  2	R63-E  2 3	R64  2 3	R65  2 3	R66-A  3	R66-SA  3
R67  3	R68  3	R69  3	R70  3	R71-A  3	R71-B  3
R71-C  3	R72-A  2 3	R73-A  2 3	R73-C  3	R74-A  3	R74-B  3
R75  3	R80-A  2 3	R81-A  2 3	R82-A  2 3	R83  3	R84  3
R85  3	R86  3	R87  3	R88  3	R89  3	R90  3
R91  3	R92  3	R93  3	R98-A  2 3	R98-B  2	R98-C  3
R99  3	R100  3	R102  3	R103-A  2 3	R103-B  3	R104-A  2 3
R105-A  2 3	R105-B  3	R108  3	R109  3	R110  3	R111  3
R112  3	R113  3	R114-A  3	R115  3	R116  3	R117  3











ROTO SLIDE SEALS					
R03-P  0	R03-R  0	R03-SA  2 3	R03-SB  2 3	R03-SH  2 3	R04-A  0
R05-A  0	R09-F  0 1 3	R09-FS  0	R10-F  0 1 3	R10-FS  0	R19-F  0 1 3

D-RINGS
R35-A  0











O-RINGS	
R13  0 1 3	R13-C  3

X-RINGS
R16-R  0 1 3

V RINGS					
R06-P  0	R06-R  1 3	R06-SA  1 3	R06-SB  1 3	R06-SC  1 3	R06-SD  1 3
R06-SE  3	R06-SF  3	R07-P  0	R07-R  1 3		

STATIC OTHERS					
R12-F  0 1	R14  0 1 3	R15-P  0 1 3	R20-P  0	R20-SA  1	R30-A  0
ST61  1	ST62  1	ST63  1	ST64  1		

legend;
 1 machine or molded/standard/trade product
 2 molded/standard/trade product or machine with minor design change
 3 molded/standard/trade product only
 0 only machined

ROTARY OTHERS					
R08-A  0	R11-F  0	R94-A  3	R95-A  3	R96  3	R97  3
R118  3	R119  3	R120  3	R121  3		

special materials

data of other special materials such as list below available on request

	material name	color	description
polyurethanes	s-smart HPU-95A-blue	blue	hydrolysis resistant polyurethane, 95 shore A, blue
	s-smart HPU-95A-natural	natural	hydrolysis resistant polyurethane, 95 shore A, natural
	s-smart GPU-57D-yellow	yellow	polyurethane, 57 shore D, casted polyurethane, yellow
	s-smart GPU-72D-black	black	polyurethane, 72 shore D, casted polyurethane, black
rubber elastomers	s-smart NBR-85A-white	white	acrylonitrile butadiene rubber, 85 shore A, white
	s-smart NBR-85A-LT-black	black	acrylonitrile butadiene rubber, 85 shore A, for low temperature, black
	s-smart HNBR-85A-FG-black	black	hydrogenated acrylonitrile butadiene rubber, 85 shore A, food grade, black
	s-smart HNBR-85A-LT-black	black	hydrogenated acrylonitrile butadiene rubber, 85 shore A, for low temperature, black
	s-smart HNBR-85A-ED-black	black	hydrogenated acrylonitrile butadiene rubber, 85 shore A, explosive decompression grade, black
	s-smart HNBR-90A-black	black	hydrogenated acrylonitrile butadiene rubber, 90 shore A, black
	s-smart HNBR-93A-black	black	hydrogenated acrylonitrile butadiene rubber, 93 shore A, black
	s-smart FKM-75A-PEROX-black	black	fluorocarbon rubber, 75 shore A, peroxide cured, black
	s-smart FKM-75A-LC-black	black	fluorocarbon rubber, 75 shore A, low compression set, black
	s-smart FKM-80A-black	black	fluorocarbon rubber, 80 shore A, black
	s-smart FKM-80A-FG-black	black	fluorocarbon rubber, 80 shore A, food grade, black
	s-smart FKM-85A-FG-white [brown]	white/brown	fluorocarbon rubber, 85 shore A, food grade, white/brown
	s-smart FKM-90A-black	black	fluorocarbon rubber, 90 shore A, black
	s-smart FKM-95A-black	black	fluorocarbon rubber, 95 shore A, black
	s-smart EPDM-85A-FG-white	white	ethylene propylene diene rubber, 85 shore A, food grade, white
	s-smart EPDM-85A-FG-black	black	ethylene propylene diene rubber, 85 shore A, food grade, black
	s-smart EPDM-93A-black	black	ethylene propylene diene rubber, 93 shore A, black
	s-smart MVQ-85A-FG-translucent	translucent	vinyl methyl silicone rubber, 85 shore A, food grade, translucent
s-smart TFE/P-85A-ED-black	black	tetrafluoroethylene propylene rubber (AFLAS), 85 shore A, explosive decompression grade, black	
thermoplastics	s-smart PTFE-57D-turquoise	turquoise	polytetrafluoro ethylene, 57 shore D, filled with 1% pigments, turquoise
	s-smart PTFE-60D-GF25-grey	grey	polytetrafluoro ethylene, 60 shore D, filled with 25% glassfiber, grey
	s-smart PTFE-60D-GF15-turquoise	turquoise	polytetrafluoro ethylene, 60 shore D, filled with 15% glassfiber & 1% pigments, turquoise
	s-smart PTFE-62D-GP-orange	orange	polytetrafluoro ethylene, 62 shore D, filled with glass & pigments, orange
	s-smart PTFE-63D-BR46-blue	blue	polytetrafluoro ethylene, 63 shore D, filled with 46% bronze and 1% pigments, bronze blue
	s-smart PTFE-64D-BR40-green	green	polytetrafluoro ethylene, 64 shore D, filled with 40% bronze, green
	s-smart PTFE-60D-CA-black	black	polytetrafluoro ethylene, 60 shore D, filled with carbon & additives, black
s-smart TEXTGRA	grey	polyester fabric reinforced polyester resin with graphite filler, grey	



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