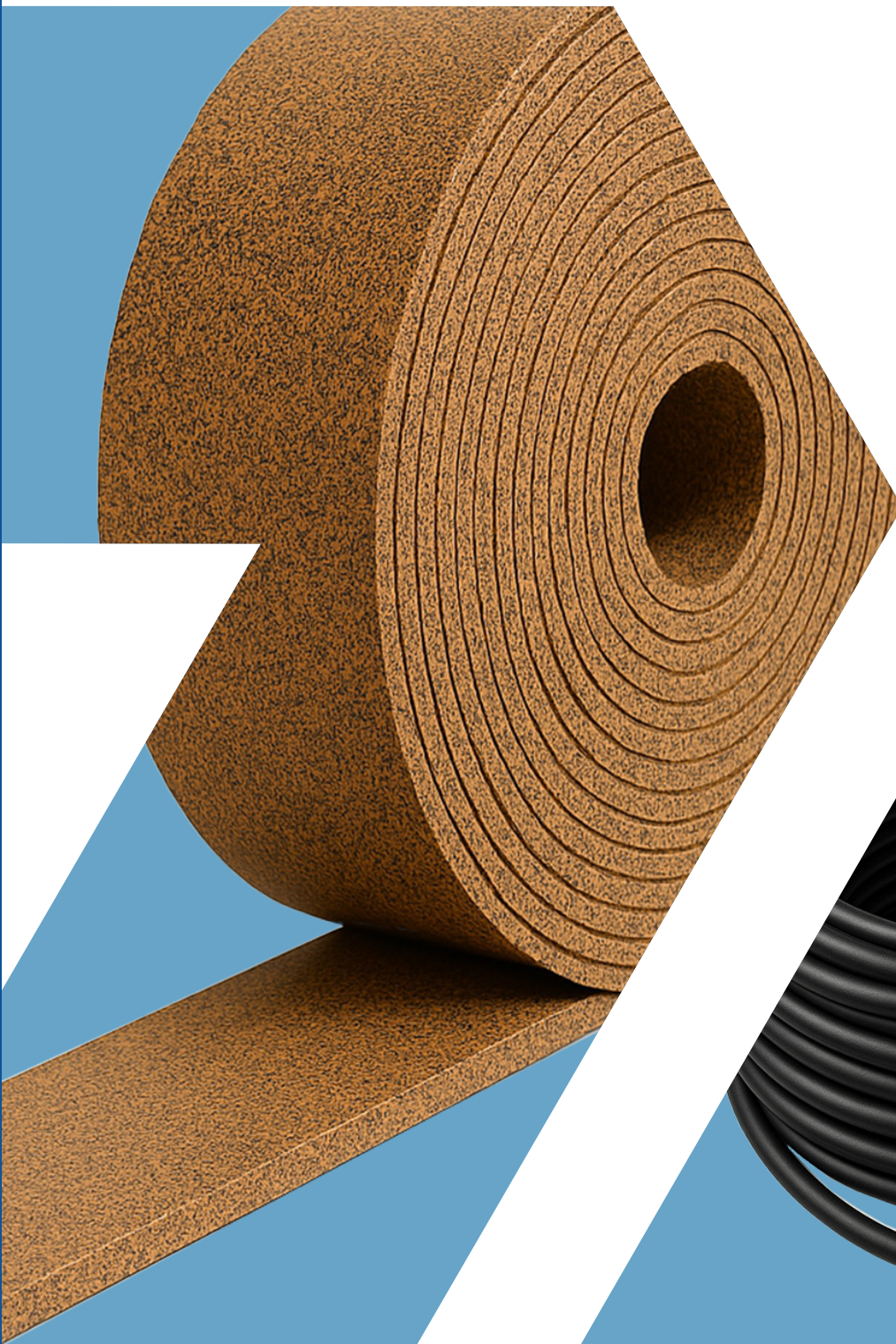


Rubber Cords, Sheets and Strips

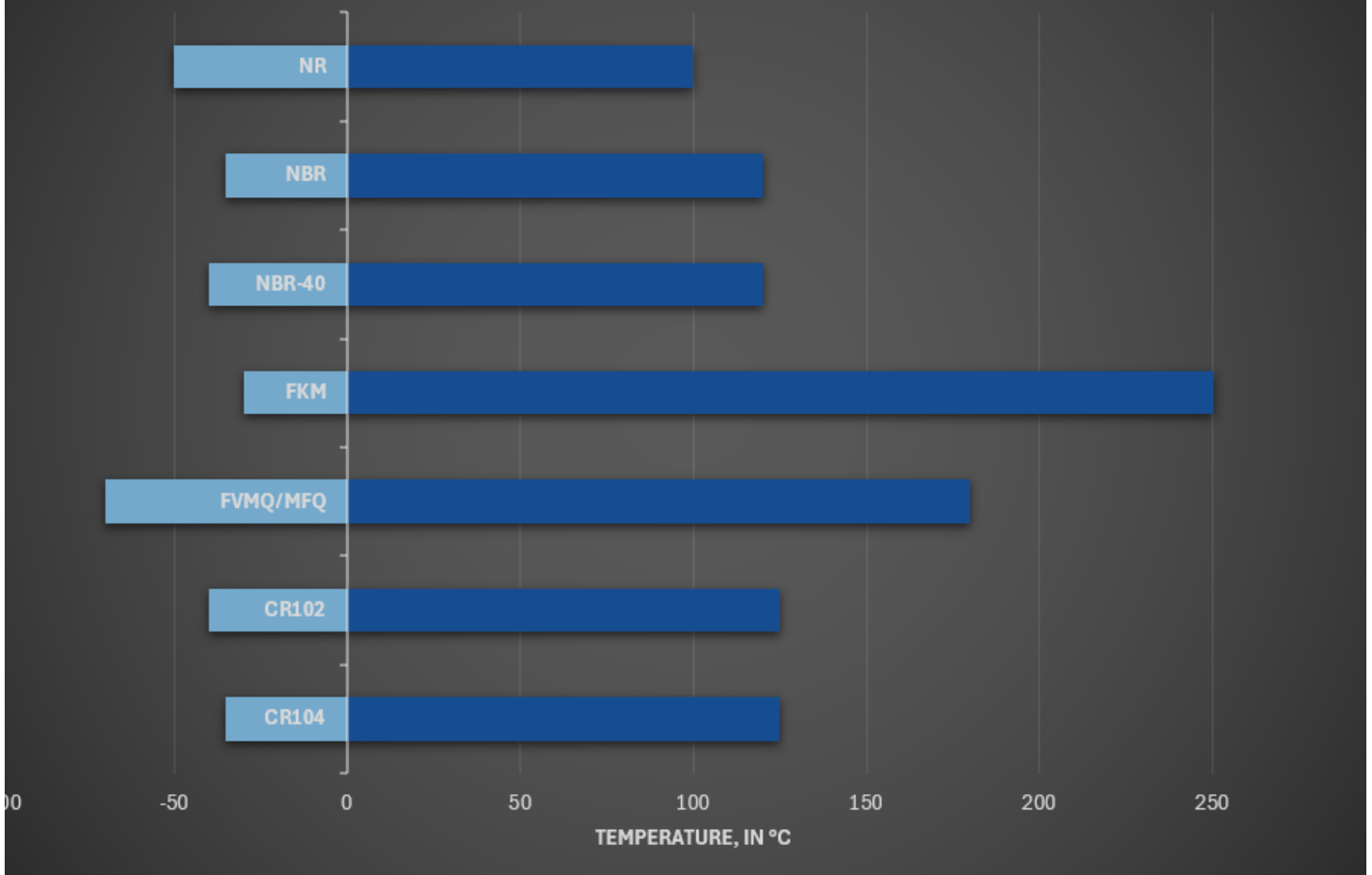


General Properties of Rubber

General Name	Natural Rubber*	Nitrile (standard)	Nitrile (-40 °C)	Fluorocarbon	Fluorosilicone	Cork Rubber 102	Cork Rubber 104
Chemical	Polyisoprene	Acrylonitrile Butadien Rubber	Acrylonitrile Butadien Rubber	Fluorocarbon Rubber	Fluorosilicone Rubber	NBR Rubber binded with Cork Granules	NBR Rubber binded with Cork Granules
Abbreviation	NR	NBR	NBR-40	FKM	FVMQ/MFQ	CR102	CR104
Hardness	30-95	70	60-70	60-70	70	65-75	75
Cross Reference				Viton		TD1120	TD1049
Service Temperature Range							
Max.	75 °C	120 °C	120 °C	250 °C	180 °C	125 °C	125 °C
Min.	-60 °C	-35 °C	-40 °C	-30 °C	-70 °C	-40 °C	-35 °C

*Natural Rubber (NR) is used as a reference to compare itself to the products offered by PREIS

Temperature Resistance of Rubber



Environmental Resistance Properties of Rubber

Polymer	NR*	NBR	NBR-40	FKM	FVMQ/ MFQ	CR102	CR104
Oxidation Resistance	2-3	2-3	2-3	1	1	-	-
Ozone Resistance	4	4	4	1	1	-	-
Weathering Resistance	4	2-3	2-3	1	1	-	-
Sunlight Resistance	3-4	3-4	3-4	1	1	-	-
Water Resistance	1	1-2	1-2	1-2	1	-	-
Flame Resistance	4	4	4	1-2	1	-	-
Heat Resistance	4	2	2	1	1	-	-
Low Temperature Flexibility	1-2	2-3	2-3	2-3	1	-	-

1 = Excellent 2 = Good 3 = Fair 4 = Poor *Natural Rubber (NR) is used as a reference to compare itself to the products offered by PREIS

Chemical Resistance Properties of Rubber

Polymer	NR*	NBR	NBR-40	FKM	FVMQ/ MFQ	CR102	CR104
Oil and Gasoline	4	1-2	1-2	1	2	-	-
Animal and Vegetable Oils	3	1-2	1-2	1	1	-	-
Alcohols	2	2-3	2-3	2-3	1-2	-	-
Alkalies	3	1-2	1-2	2-3	1	-	-
Acids	2-3	2	2-3	2	1	-	-
Aliphatic Hydro-carbon Solvents	4	1	1	1	1	-	-
Aromatic Hydro-carbon Solvents	4	2-3	2-3	1	1-2	-	-
Oxygenated Solvents	2	4	4	4	2	-	-

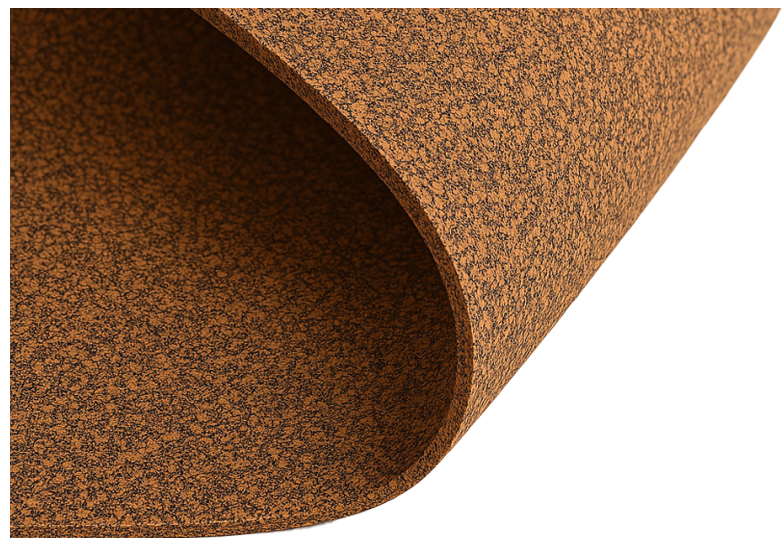
1 = Excellent 2 = Good 3 = Fair 4 = Poor *Natural Rubber (NR) is used as a reference to compare itself to the products offered by PREIS

Rubber and Cork Rubber Sheets

Meet your specific performance requirements with our rubber sheets, which can be crafted from a range of elastomers. Our NBR, FKM, FVMQ/MFQ and cork rubber sheets are specially formulated to ensure high performance for transformer applications.

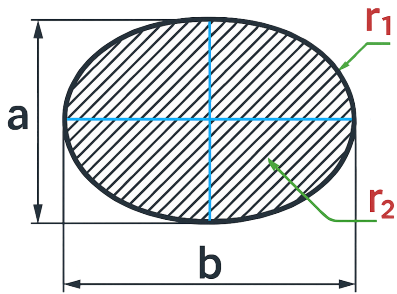


STANDARD SHEET SIZES	
Width x Length (mm)	Thickness (mm)
540 x 540	2 - 3 - 4 - 5 - 6 - 8 - 10 - 12
700 x 1000	2 - 3 - 4 - 5 - 6 - 8 - 10 - 12
1000 x 1000	2 - 3 - 4 - 5 - 6 - 8 - 10 - 12
1000 x 2000	2 - 3 - 4 - 5 - 6 - 8 - 10 - 12
1000 x 10000*	2 - 3 - 4 - 5 - 6 - 8 - 10 - 12
* only for rubber sheets	



Metric Rubber Cords, Rubber and Cork Rubber Strips

Transformer lid rubbers can be manufactured from a range of elastomers to fulfill your specific performance requirements. Available options include NBR, FKM, FVMQ/MFQ and cork rubber. Custom dimensions can also be produced upon request to perfectly fit your application.



METRIC CORDS	
Diameter (mm)	Roll Length (m)
6	50
8	50
10	50
12	50
14	50
16	50
20	25
22	25
24	25
30	25

ELLIPTICAL CORDS	
Dimensions a x b (mm)	Roll Length (m)
11 x 14	50
14 x 18	50

RECTANGULAR SHAPED STRIPS	
Dimensions a x b (mm)	Roll Length (m)
8 x 12	50
10 x 20	25
12 x 20	25
10 x 25	25
10 x 30	25
20 x 30	25
12 x 40	25
10 x 100	10

CORK RUBBER STRIPS		
Width (mm)	Thickness (mm)	Roll Length (m)
30	4 - 6	10
40	4 - 6	10
50	4 - 6	10
60	4 - 6	10
65	4	10
70	6	10
80	6 - 8 - 10	10
100	6 - 8 - 10	10

NBR Rubber (standard) Technical Report

Rubber Type: Acrylonitrile Butadien Rubber (NBR)
Working Temperature: -35 °C - +120 °C

Test	Test Method	Unit	Test Result
Hardness	TS ISO 7619-1	Shore A	70
Density	TS 2827-ISO281 (Method A)	gr/cm ³	1.3
Tensile Strength	DIN 53504 (Mold S1)	N/mm ²	15.7
Elongation at break	DIN 53504 (Mold S1)	%	398
Compression Set (70 °C, 24 hours)	DIN ISO 815 (sample type A)	%	16
Compression Set (100 °C, 24 hours)	DIN ISO 815 (sample type A)	%	32
Tear Resistance	ASTM D 624-00 (Mold C)	N/mm ²	46
Elasticity	DIN 53512	%	20
Aging in Oven (70 °C, 168 hours)	DIN 53508		
Change in Hardness	TS ISO 7619-1	Shore A	+4
Change in Tensile Strength	DIN 53504 (Mold S1)	%	-1
Change in Elongation	DIN 53504 (Mold S1)	%	-24
Low Temperature Resistance (-35 °C, 5 hours)	TS 4709	-----	resistant
After aging in SHELL DIALA AX oil according to TS ISO 1817 (120 °C, 72 hours)			
Change in Hardness	TS ISO 7619-1	Shore A	-5
Change in Tensile Strength	DIN 53504 (Mold S1)	%	-8
Change in Elongation	DIN 53504 (Mold S1)	%	-27
Change in Volume	DIN ISO 1817	%	+7.9
Change in Weight	DIN ISO 1817	%	+4.7
Low Temperature Resistance (-35 °C, 5 hours)	TS 4709 NO. 2.3.9.	-----	after bending the test pieces no cracks and fractures were observed.
Fluid Compatibility			
Mineral Oil	suitable		
Natural and Synthetic Oil	suitable		
Silicone Oil	suitable		

NBR-40 Shore A 60 Rubber Technical Report

Rubber Type: Acrylonitrile Butadien Rubber (NBR)
Working Temperature: -40 °C - +120 °C

Test	Test Method	Unit	Test Result
Hardness	TS ISO 7619-1	Shore A	60
Density	TS 2827-ISO281 (Method A)	gr/cm ³	1.31
Tensile Strength	DIN 53504 (Mold S1)	N/mm ²	15.7
Elongation at break	DIN 53504 (Mold S1)	%	398
Compression Set (70 °C, 24 hours)	DIN ISO 815 (sample type A)	%	16
Compression Set (100 °C, 24 hours)	DIN ISO 815 (sample type A)	%	32
Tear Resistance	ASTM D 624-00 (Mold C)	N/mm ²	46
Elasticity	DIN 53512	%	20
Aging in Oven (70 °C, 168 hours)	DIN 53508		
Change in Hardness	TS ISO 7619-1	Shore A	+4
Change in Tensile Strength	DIN 53504 (Mold S1)	%	-1
Change in Elongation	DIN 53504 (Mold S1)	%	-24
Low Temperature Resistance (-40 °C, 5 hours)	TS 4709	-----	resistant
After aging in SHELL DIALA AX oil according to TS ISO 1817 (120 °C, 72 hours)			
Change in Hardness	TS ISO 7619-1	Shore A	-5
Change in Tensile Strength	DIN 53504 (Mold S1)	%	-8
Change in Elongation	DIN 53504 (Mold S1)	%	-27
Change in Volume	DIN ISO 1817	%	+7.9
Change in Weight	DIN ISO 1817	%	+4.7
Low Temperature Resistance (-40 °C, 5 hours)	TS 4709 NO. 2.3.9.	-----	after bending the test pieces no cracks and fractures were observed.
Fluid Compatibility			
Mineral Oil	suitable		
Natural and Synthetic Oil	suitable		
Silicone Oil	suitable		

NBR-40 Shore A 70 Rubber Technical Report

Rubber Type: Acrylonitrile Butadien Rubber (NBR)
 Working Temperature: -40 °C - +120 °C

Test	Test Method	Unit	Test Result
Hardness	TS ISO 7619-1	Shore A	70
Density	TS 2827-ISO281	gr/cm ³	1.31
	(Method A)		
Tensile Strength	DIN 53504	N/mm ²	15.7
	(Mold S1)		
Elongation at break	DIN 53504	%	398
	(Mold S1)		
Compression Set (70 °C, 24 hours)	DIN ISO 815 (sample type A)	%	16
Compression Set (100 °C, 24 hours)	DIN ISO 815 (sample type A)	%	32
Tear Resistance	ASTM D 624-00	N/mm ²	46
	(Mold C)		
Elasticity	DIN 53512	%	20
Aging in Oven (70 °C, 168 hours)	DIN 53508		
Change in Hardness	TS ISO 7619-1	Shore A	+4
Change in Tensile Strength	DIN 53504	%	-1
	(Mold S1)		
Change in Elongation	DIN 53504	%	-24
	(Mold S1)		
Low Temperature Resistance (-40 °C, 5 hours)	TS 4709	-----	resistant
After aging in SHELL DIALA AX oil according to TS ISO 1817			
			(120 °C, 72 hours)
Change in Hardness	TS ISO 7619-1	Shore A	-5
Change in Tensile Strength	DIN 53504	%	-8
	(Mold S1)		
Change in Elongation	DIN 53504	%	-27
	(Mold S1)		
Change in Volume	DIN ISO 1817	%	+7.9
Change in Weight	DIN ISO 1817	%	+4.7
Low Temperature Resistance (-40 °C, 5 hours)	TS 4709 NO. 2.3.9.	-----	after bending the test pieces no cracks and fractures were observed.
Fluid Compatibility			
Mineral Oil	suitable		
Natural and Synthetic Oil	suitable		
Silicone Oil	suitable		

FKM Shore A 60 Technical Report

Rubber Type:

Fluorocarbon Rubber (FKM)

Test	Test Method	Unit	Test Result
Hardness	TS ISO 7619-1	Shore A	61
Density	TS 2827-ISO281	gr/cm ³	2
	(Method A)		
Tensile Strength	DIN 53504	N/mm ²	21
	(Mold S1)		
Elongation at break	DIN 53504	%	230
	(Mold S1)		
Compression Set (100 °C, 22 hours)	DIN 53517	%	19
Tear Resistance	ASTM D 624 B	N/mm ²	24
Ozone Resistance (23 °C, 2 ppm, 4 hours)	DIN 53509		ok
Aging in Oven (70 °C, 250 hours)	ASTM D573		
Change in Hardness		Shore A	+2
Change in Tensile Strength		%	15
Fluid Compatibility			
Mineral Oil	suitable		
Natural and Synthetic Oil	suitable		
Silicone Oil	suitable		
Working Temperature			
Min. Temperature		min. dynamic	-20 °C
		min. static	-30 °C
Max. Temperature		long time	+250 °C
		short time	+275 °C

Cross Reference: Viton

FKM Shore A 70 Rubber Technical Report

Rubber Type:

Fluorocarbon Rubber (FKM)

Test	Test Method	Unit	Test Result
Hardness	TS ISO 7619-1	Shore A	73
Density	TS 2827-ISO281	gr/cm ³	2.14
	(Method A)		
Tensile Strength	DIN 53504	N/mm ²	21
	(Mold S1)		
Elongation at break	DIN 53504	%	230
	(Mold S1)		
Compression Set (100 °C, 22 hours)	DIN 53517	%	19
Tear Resistance	ASTM D 624 B	N/mm ²	24
Ozone Resistance (23 °C, 2 ppm, 4 hours)	DIN 53509		ok
Aging in Oven (70 °C, 250 hours)	ASTM D573		
Change in Hardness		Shore A	+2
Change in Tensile Strength		%	15
Fluid Compatibility			
Mineral Oil	suitable		
Natural and Synthetic Oil	suitable		
Silicone Oil	suitable		
Working Temperature			
Min. Temperature		min. dynamic	-20 °C
		min. static	-30 °C
Max. Temperature		long time	+250 °C
		short time	+275 °C

Cross Reference: Viton

FVMQ/MFQ Rubber Technical Report

Rubber Type: Fluorosilicone Rubber (FVMQ/MFQ)
 Working Temperature: -70 °C - +180 °C

Test	Test Method	Unit	Test Result
Colour			grey
Density	DIN 53479	gr/cm ³	1.48
Hardness	DIN 53505 A	Shore A	70
Tensile	DIN 53504 S1	N/mm ²	9
Elongation	DIN 53504 S1	%	256
Modulus %100	DIN 53504 S1	N/mm ²	-
Modulus %200	DIN 53504 S1	N/mm ²	-
Tear Strength	ASTM D 624 C	N/mm ²	-
Abrasion Resistance	ISO 4649	mm ³	-
Rebound Resilience	DIN 53512	%	35
Compression Set (70 °C, 24 hours)	DIN 53517	%	8
Compression Set (100 °C, 24 hours)	DIN 53517	%	9
Low Temperature Resistance (-60 °C, 5 hours)	DIN 53509	%	no cracks observed after bending
Aging in Oven			
(70 °C, 168 hours)			
Change in Hardness	DIN 53505 A	Shore A	+1
Change in Tensile	DIN 53504 S1	%	-15
Change in Elongation	DIN 53504 S1	%	-14
Aging in IRM 902			
(100 °C, 168 hours)			
Change in Hardness	DIN 53505 A	Shore A	-2
Change in Tensile	DIN 53504 S1	%	-3
Change in Elongation	DIN 53504 S1	%	-10
Change in Volume	DIN ISO 1817	%	+6.8
Change in Weight	DIN ISO 1817	%	+2.4
Aging in IRM 903			
(100 °C, 168 hours)			
Change in Hardness	DIN 53505 A	Shore A	-16
Change in Tensile	DIN 53504 S1	%	-10
Change in Elongation	DIN 53504 S1	%	-10
Change in Volume	DIN ISO 1817	%	+23.6
Change in Weight	DIN ISO 1817	%	+14.2

Cork Rubber 102 (CR102) Technical Report

Rubber Type: Acrylonitrile Butadien Rubber (NBR) binded with Cork Granules
Working Temperature: -40 °C - +125 °C

Test	Unit	Range	Test Result
Colour			black/natural
Hardness	Shore A	65 - 75	70
Density	kg/m ³	850 - 900	860
Tensile Strength	Mpa		2.2
Elongation	%		90
Compressive Strength	Mpa		71
Flexibility			
Original			no cracks
ASTM No: 1 Oil (125 °C, 70 hours)			no cracks
Oven (100 °C, 70 hours)			no cracks
Volume Change after Aging			
ASTM No: 1 Oil (100 °C, 70 hours)		-10 to +10	-1
Fluid Compatibility			
Mineral Oil	suitable		
SF6 Gas	acceptable		
Natural Ester Oil	suitable		
Silicone Oil	suitable		

Asbestos-free
Heavy metal (Pb, Cd, Hg, Cr) free
Polycyclic aromatic hydrocarbon (PAH) free

Cross Reference: TD1120

Cork Rubber 104 (CR104) Technical Report

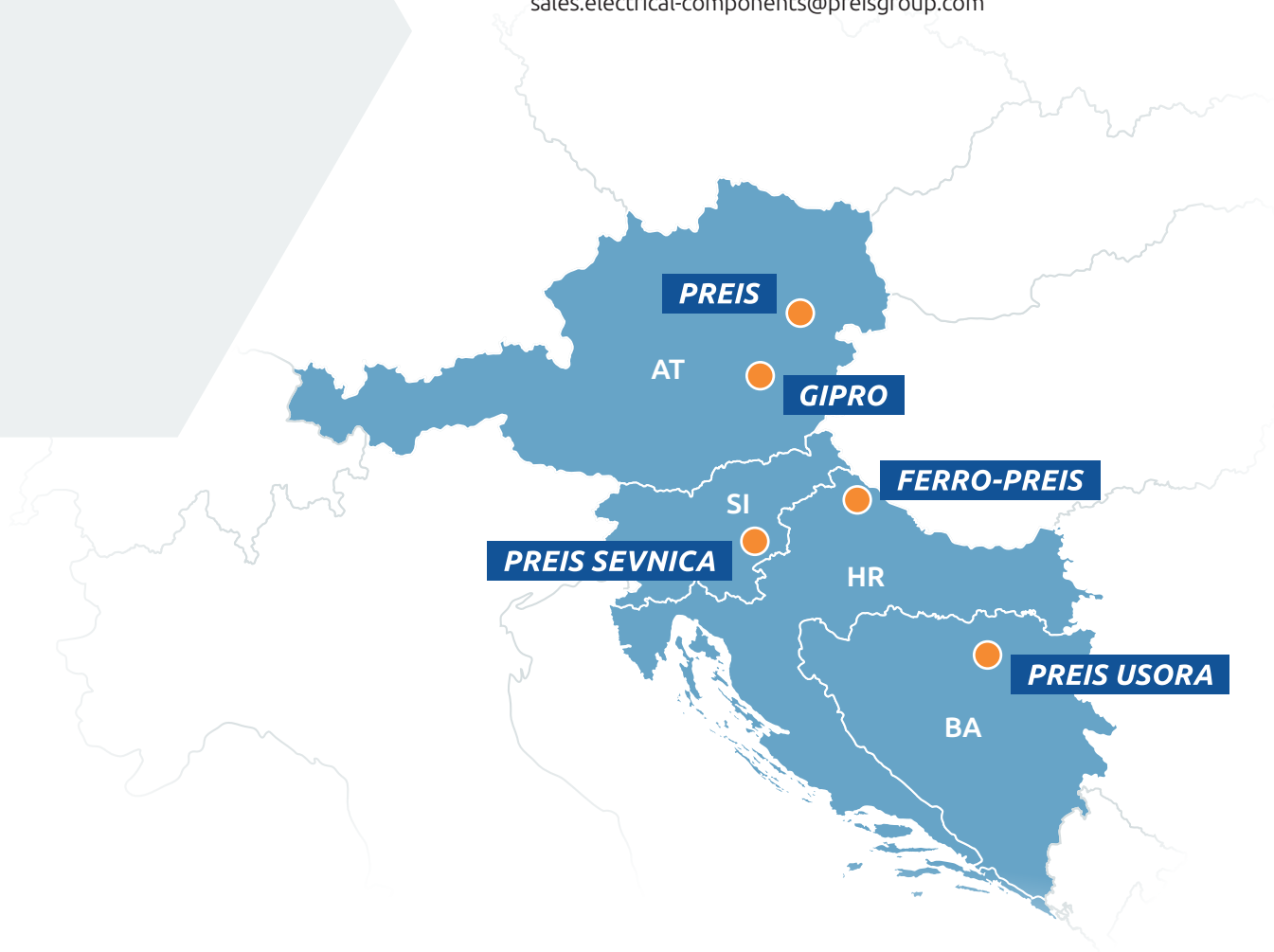
Rubber Type: Acrylonitrile Butadien Rubber (NBR) binded with Cork Granules
Cork Granules: 0.5 - 1 mm
Working Temperature: -35 °C - +125 °C

Test	Test Method	Unit	Range	Test Result
Density	ASTM D297	kg/m ³	850 - 1100	900
Hardness	ASTM D2240	Shore A		73
after immersion (100 °C, 70 hours), IRM 903 oil				73
after immersion (100 °C, 70 hours), IRM 901 oil				73
Tensile Strength (Mpa) Min.	ASTM D412			2.43
after immersion (100 °C, 70 hours), IRM 903 oil				2.75
after immersion (100 °C, 70 hours), IRM 901 oil				2.62
Compressibility at 2.76 Mpa (%)	ASTM F146			2.1
after immersion (100 °C, 70 hours), IRM 903 oil				2.1
after immersion (100 °C, 70 hours), IRM 901 oil				2.2
Recovery after 2.76 Mpa (%)	ASTM F146			
after immersion (100 °C, 70 hours), IRM 903 oil			> 80	99.2
after immersion (100 °C, 70 hours), IRM 901 oil			> 80	99.6
Volume Change after Aging	ASTM F146			
after immersion (100 °C, 70 hours), IRM 903 oil				
Thickness increase		%	Max. 25 %	0.3
Weight increase		%		2.7
Volume increase		%		2.2
after immersion (100 °C, 70 hours), IRM 901 oil				
Thickness increase		%	Max. 15 %	0.7
Weight increase		%		2.3
Volume increase		%		0.5
Flexibility	ASTM F147			
At room temperature		after < 0 mm radius		no cracks
After immersion in IRM 903 and IRM 901 for 70 hours at 100 °C		after < 0 mm radius		no cracks
After 70 hours heating at 100 °C		after < 0 mm radius		no cracks
Flexibility at -40 °C				cracks after 50 - 60 mm radius



For more technical information
contact us now!

sales.electrical-components@preisgroup.com



This document does not claim to be exhaustive. Errors and omissions excepted. Edition 03-2026



PREIS GmbH
Headquarter

Josef Nitsch-Straße 5
2763 Pernitz, AT
+43 (0) 2632 733 55 0
office.austria@preisgroup.com
preisgroup.com



Ferro-PREIS d.o.o.
Iron Foundry – Grey and Ductile Iron

Ul. dr. Tome Bratkovića 2
40000 Čakovec, HR
+385 (0) 40 384 206
office.croatia@preisgroup.com
preisgroup.com



PREIS SEVNICA d.o.o.
Steel Construction and Welded Constructions

Savska cesta 23
8290 Sevnica, SI
+386 (0) 781 61 852
office.slovenia@preisgroup.com
preisgroup.com



PREIS USORA d.o.o.
Steel Construction and Welded Constructions

Žabljak polje 52
74230 Usora, BA
+387 (0) 32 891 022
office.bosnia@preisgroup.com
preisgroup.com



GIPRO GmbH
Production of Epoxy Insulators

Wilhelm-Jentsch-Straße 2
8120 Peggau, AT
+43 (0) 3127 20940
info@gipro.com
www.gipro.com