

# RHIMEX.com

Profiles of rubber, sponge rubber,  
silicone, foam silicone

**complete overview  
of  
technical information**

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### important:

Functioning and endurance lifetime of sealing materials are dependent especially on installation conditions, on which we have no effect as the producer. That's why we can guarantee only a flawless quality of our material. Our technical service is bases on experiences, the values are intended only as a source of information and are given without of guarantee and do not constitute a warranty. Any technical modifications are reserved by us.

VITON® = Entered registered trade mark of the company DuPont  
FasTape = Entered registered trade mark of Avery International.

# technical information

## **sponge rubber** in EPDM

elastomer: ETHYLENE-PROPYLENE-DIENE TERPOLYMERS (EPDM)  
(no blend-quality)

special characteristics: continuous extruded and vulcanized

no adhesive-connection

100% cell-closed, all around closed skin even at cuts -  
there is no water absorption

colour: black  
(according to available request other colours)

density: a) ca. 0,5 g/cm<sup>3</sup>  
b) ca. 0,6 – 0,8 g/cm<sup>3</sup>

dimensional tolerance: according to DIN ISO 3302-1 E3

### resistance

temperature: from –35°C till +110°C

ozone, weathering, uv-light: black: very good to excellent  
grey: limited – in relationship of outlet

oil and grease: vegetable very good  
animal limited  
mineral moderate

acid, alkaline, ketone, alcohol: excellent

lacquer: inert – only by peroxide vulcanisation  
– not by sulphur vulcanisation

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# technical information

## **sponge rubber** in CR (Neoprene)

elastomer:	POLYCHLOROPRENE (CR) (no blend-quality)
special characteristics:	continuous extruded and vulcanized  no adhesive-connection  100% cell-closed, all around closed skin even at cuts - there is no water absorption
colour:	black
density:	ca. 0,4 – 0,6 g/cm <sup>3</sup>
dimensional tolerance:	according to DIN ISO 3302-1 E3

### resistance

temperature:	from –35°C to +110°C
ozone and weathering:	very good
oil and grease:	limited resistant
acid and alkaline:	very good

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# technical information

## **sponge rubber** in NBR (Perbunan)

elastomer:	ACRYLONITRIL-BUTADIENE-COPOLYMER (NBR)
special characteristics:	continuous extruded and vulcanized  no adhesive-connection  100% cell-closed, all around closed skin even at cuts - there is no water absorption
colour:	grey or black (according to available request other colours)
density:	ca. 0,35 g/cm <sup>3</sup>
dimensional tolerance:	according to DIN ISO 3302-1 E3
compression set:	at 50% deformation after 22 h with 23°C = after 24 h discharge ≤ 25%.

Information on compression set is a nominal value, as the compression set is dependent on the geometry of the test specimen. The test was made on a cross section profile 20 x 20 mm..

### resistance

temperature:	from -30°C till +80°C	
fire:	not resistant	
ozone, weathering, uv-light:	moderate	
stiffening in cold:	good	
cold brittleness:	good	
aliphatic hydrocarbon:	good	
aromatic hydrocarbon:	not resistant	
ketone:	not resistant	
oil and grease:	vegetable	very good
	animal	very good
	mineral	very good
acid and alkaline:	limited till not resistant	
water:	moderate	
dielectric strength:	moderate	

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# technical information

## **sponge rubber** in FPM/FMQ (VITON<sup>®</sup>)

elastomer:	FLUOR RUBBER (FPM/FMQ)
special characteristics:	continuous extruded and vulcanized no adhesive-connection 100% cell-closed, all around closed skin even at cuts - there is no water absorption
colour:	black
density:	ca. 0,95 g/cm <sup>3</sup>
dimensional tolerance:	according to DIN ISO 3302-1 E3

### resistance

temperature:	from -20°C till +200°C, short-term +250 °C
ozone, weathering, uv-light:	very good
fire characteristic:	hard inflammable, self-extinguishing
chemicals:	excellent
hydrochloric-/sulphuric acid (50%):	very good
nitric acid (60%):	very good
hydrocarbon:	very good
oil and lubricant:	very good

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# technical information

## **foam silicone** quality SPS

elastomer:	METHYLVINYLPOLYSILOXAN (VMQ)
special characteristics:	continuous extruded and vulcanized 100% cell-closed, all around closed skin water and organic-productions refused physiological clean and bacteriological indifferent contains no poisonous material not corrosive – not adhering
colour:	white (according to available request other colours)
density:	ca. 0,25 – 0,55 g/cm <sup>3</sup>
dimensional tolerance:	according to DIN ISO 3302-1 E3 or ±10%

### resistance

temperature:	from –60°C till ca.+220°C
weathering, age limit, ozone:	excellent
tropical-climate, ultraviolet rays:	excellent
radioactive- and x-rays:	very good
aliphatic motor- and gear oil:	general good
heat conductivity:	0,18 – 0,23 Kcal. x s <sup>-1</sup> °C <sup>-1</sup>
specific heat:	0,3 cal. x gr <sup>-1</sup> °C <sup>-1</sup>
fire characteristic:	normal inflammable and not dropping fire class DIN 4102, section 1, B2

Physical-mechanical values are inclined from the cross-section of the profile. The quality performed the instructions of the American Material Specification AMS 3195.

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# technical information

## **foam silicone** quality SPS / FDA conform

elastomer:	METHYLVINYLPOLYSILOXAN (VMQ)
special characteristics:	continuous extruded and vulcanized 100% cell-closed, all around closed skin water and organic-productions refused physiological clean and bacteriological indifferent contains no poisonous material not corrosive – not adhering
colour:	nature
density:	0,40 g/cm <sup>3</sup>
shore:	15 ±5
tensile strength:	1,5 MPA
elongation:	300%
resistance to tearing:	5 kN
compression set:	after 22 hours with 100°C: < 50% (crushing 25%) (ASTM D 395-methode B)
dimensional tolerance:	according to DIN ISO 3302-1 E3 or ±10%

### resistance

temperature:	+200°C
FDA conform:	yes

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# technical information

## **foam silicone** quality SPS / HT

elastomer:	METHYLVINYLPOLYSILOXAN (VMQ)
special characteristics:	continuous extruded and vulcanized 100% cell-closed, all around closed skin water and organic-productions refused physiological clean and bacteriological indifferent contains no poisonous material not corrosive – not adhering
colour:	white
density:	ca. 0,25 g/cm <sup>3</sup>
dimensional tolerance:	according to DIN ISO 3302-1 E3 or ±10%

### resistance

temperature:	from –60°C till ca.+220°C; for a short time till +300°C
weathering, age limit, ozone:	excellent
tropical-climate, ultraviolet rays:	excellent
radioactive- and x-rays:	very good
aliphatic motor- and gear oil:	general good
heat conductivity:	0,18 – 0,23 Kcal. x s <sup>-1</sup> °C <sup>-1</sup>
specific heat:	0,3 cal. x gr <sup>-1</sup> °C <sup>-1</sup>
fire characteristic:	normal inflammable and not dropping fire class DIN 4102, section 1, B2

Physical-mechanical values are inclined from the cross-section of the profile. The quality performed the instructions of the American Material Specification AMS 3195.

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# technical information

## **solid rubber** in EPDM

elastomer:	ETHYLENE-PROPYLENE-DIENE-TERPOLYMERS (EPDM) (no blend-quality)
special characteristics:	homogenous  continuous extruded and vulcanized  no adhesive-connection
colour:	black (according to available request other colours)
density:	ca. 1,15 – 1,25 g/cm <sup>3</sup>
shore:	40 – 55 – 65 – 75 – 85 ±5
dimensional tolerance:	according to DIN ISO 3302-1 E2

### resistance

temperature:	from –35°C till +120°C
ozone, weathering, uv-light:	black: very good to excellent grey: limited – in relationship of outlet
oil and grease:	vegetable very good animal limited mineral moderate
acid, base, ketone, alcohol:	excellent
lacquer:	inert – only by peroxide vulcanisation – not by sulphur vulcanisation

### important:

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comparison between the instructions  
DIN 7863  
and combination EPDM  
hardness 60/65 shore

A: 70 hours +100 °C

B: 7 days +100 °C

C: 14 days +100 °C

	NAAM-Stand SG – 1 – 70	gummi-plast EPDM 60 Sh			DIN 7863
hardness shore A	60 / 65 ±5	60 / 65 ±5			60 / 65 ±5
tensile strength kg/cm <sup>2</sup>	mind. 127	120			mind. 85
elongation at break %	mind. 250	330			mind. 200
compression set %	mind. 25	24,5			max. 35
age limit	(70 h +100 °C) 70 h +100 °C	(70 h +100 °C) A   B   C			(22 h +100 °C) 7 days +100 °C
Δ hardness (grade)	max. +10	+0	+1	+4	max. +15 –5
Δ tensile strength	max. –15	+3	+5	+7	max. –25
Δ elongation %	max. –40	+1	+3	+3	max. –50
examination at lower temperature (ASTMD – 746)	–40 °C	acc. the ASTM – 746 examination satisfied			---
examination at lower temperature (DIN 53505 7 days –10 °C)	---	no information at order			+12 Sh
ozone resistance	no split (1 ppm. 20% expansibility 100 h +40 °C)	no split (1 ppm. 20% expansibility 100 h +40 °C)			no split (50 ppm. 20% expansibility 100 h +40 °C)

# technical information

## **solid rubber** in CR (Neoprene)

elastomer:	POLYCHLOROPRENE (CR)
special characteristics:	homogenous continuous extruded and vulcanized no adhesive-connection
colour:	black (according to available request other colours)
density:	ca. 1,35 – 1,45 g/cm <sup>3</sup>
shore:	50 – 60 – 70 – 80 ±5
elongation at break:	300 – 350%
compression set:	27 – 28%
dimensional tolerance:	according to DIN ISO 3302-1 E2

### resistance

temperature:	from –35°C till +110°C / short term +120°C	
flame resistance:	medium till good	
ozone:	good	
water:	good	
oil and grease:	vegetable animal mineral	limited till good limited till good limited till good
fuel:	not resistant	

### important:

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# technical information

## **solid rubber** in NBR (Perbunan)

elastomer:	ACRYLONITRIL-BUTADIENE-COPOLYMER (NBR)
special characteristics:	homogenous continuous extruded and vulcanized no adhesive-connection
colour:	black (according to available request other colours)
density:	ca. 1,35 g/cm <sup>3</sup>
shore:	55 - 65 – 75 ±5
dimensional tolerance:	according to DIN ISO 3302-1 E2

### resistance

temperature:	from –35°C till +90°C
fuel and grease:	excellent
aliphatic hydrocarbon:	excellent
water:	good

### important:

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# technical information

## **solid rubber** in FPM/FMQ (VITON®)

elastomer:	FLUOR RUBBER (FPM/FMQ)
special characteristics:	continuous extruded and vulcanized
	no adhesive-connection
colour:	black
density:	ca. 1,88 g/cm <sup>3</sup>
shore:	60 – 70 - 75 ±5
tensile strength:	≥ 140 kg/cm <sup>2</sup>
elongation:	≥ 250 %
resistance to tearing:	≥ 25 kg/cm
compression set:	after 22 hours with 175 °C: ≤ 30% (crushing 25%)
dimensional tolerance:	according to DIN ISO 3302-1 E2

### resistance

chemicals:	excellent
hydrochloric-/sulphuric acid (50%):	very good
nitric acid (60%):	very good
hydrocarbon:	very good
oil and lubricant:	very good

age limit in warm air (70 hours to 275 °C):

change of hardness:	+5
change of tensile strength:	-35%
change of breaking strain:	-10%

age limit in fluid ASTM B (7 days at room-temperature):

change of hardness:	+2
change of volume:	+1,5%

age limit in fluid ASTM c (7 days at room-temperature):

change of hardness:	-5
change of volume:	+5%

important:

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# technical informations

## **solid rubber** in NR (Nature Rubber)

elastomer:	NATURE RUBBER (NR/Para)
special characteristics:	homogenous continuous extruded and vulcanized no adhesive-connection
colour:	grey
density:	ca. 1,11 g/cm <sup>3</sup>
shore:	45 ±5
elongation:	550%
tensile strength:	16 MPa
resistance to tearing:	50 kN/m
compression set:	30% max.
dimensional tolerance:	according to DIN ISO 3302-1 E2

### resistance

temperature:	air oven (till 60°C) moderate
stiffening in cold:	good
flame resistance:	dissatisfied
ozone and weathering:	dissatisfied
acid:	dissatisfied
alkaline:	moderate
water:	good
ketone:	moderate
oil and grease:	dissatisfied
aromatic hydrocarbon:	dissatisfied
solvent with chlorine:	dissatisfied
fuel:	dissatisfied
dielectric strength:	moderate

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# technical information

## **silicone rubber**

elastomer:	METHYLVINYLPOLYSILOXAN (VMQ)
special characteristics:	continuous extruded and vulcanized water - and organic-products refused scentless and no taste physiological clean and bacteriological indifferent repeatedly sterilizable contains no poisonous materials not corrosive – not adhesive
colour:	translucent
density:	ca. 1,20 g/cm <sup>3</sup>
hardness:	60° shore A
tensile strength:	90 kg/cm <sup>3</sup>
elongation:	420%
resistance to tearing:	18 kg/cm
dimensional tolerance:	according to DIN ISO 3302-1 E3
compressing set:	after 22 hours with 175°C: 34%

### **resistance**

temperature:	from -70°C till ca. +220°C – special quality till +250/300°C
weathering, age limit, ozone:	excellent
tropical-climate, ultraviolet rays:	excellent
radioactive- and x-rays:	very good
aliphatic motor- and gear oil:	generally good
distilled water:	very good
seawater:	excellent
chemical resistance:	ask for the different cases with specification of chemical substance
vapour resistance:	1,5 – 2 bar short-term
heat conductivity:	0,18 – 0,23 Kcal. x s <sup>-1</sup> °C <sup>-1</sup>
specific heat:	0,3 cal. x gr <sup>-1</sup> °C <sup>-1</sup>
specific volume resistance:	3 x 10 <sup>15</sup> - 10 <sup>16</sup> Ohm/cm
dielectric tangente by 1 MHz:	2,8 – 3
loss tangente by 1 MHz:	1,10 – 2,50 x 10 <sup>-3</sup>
breakdown strength 2 mm:	16 KV/mm

Physical-mechanical values are inclined from the cross-section of the profile. The quality performed the instructions of the American Material Specification AMS 3195.

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## technical information

# PVC edge protector profiles

## with embedded steel base strip

material:	<u>basic profile:</u>	soft-PVC	75 ±5 shore
	<u>retentionlips:</u>	elastic-PVC	57 ±5 shore
	<u>steelband:</u>	ST 4	16 x 0,3 mm
	<u>tightreach:</u>	sponge rubber EPDM-quality –	according your request other qualities

special characteristics: continuous extruded  
metal tape broken  
no adhesive-connection

colour: black, white, silver  
(according to available request other colours)

dimensional tolerance: according to DIN 16941  
as combination for sponge rubber according to  
DIN ISO 3302-1 E3

### resistance

temperature: from –35°C till +80°C

ozone, weathering, uv-light: good

oil and grease:	vegetable	inconstant
	animal	inconstant
	mineral	moderate till inconstant

acid, base, ketone, alcohol: moderate till inconstant

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# self-adhesive tape for sponge rubber and solid rubber

Typ FasTape 666\* (polyester scrim)

## description

666 is a double coated polyester scrim designed for bonding foamed synthetic rubbers and plastics in the production of gasketing and for cold; it is intended as a support for mainting.

## structure

adhesive: Permanent synthetic rubber glue adhesive typified by an extremely high tack and high shear performance.  
carrier: Polyester scrim.  
cover: Brown impregnated silicone paper.

## benefits

- Provides excellent initial adhesion to a wide variety of materials.
- Good bonding to uneven surfaces.

## surface preparation

It is essential, as with all pressure-sensitive tapes, that the surface to which the tape is applied is clean, dry and free of grease and oil.

## storage and shelf life

6 months when stored at 21°C (70°F), 50% relative humidity, out of direct sunlight.

## important

Information on the above characteristics is based upon tests we believe to be reliable. The values given are typical values that vary according to application conditions. The values are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine prior to use the suitability of this material for their purposes.

\*FasTape = Entered registered trade mark of Avery International.

# self-adhesive tape *sk normal* for foam silicone and silicone

Typ FasTape 666\* (polyester scrim)

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666 is a double coated polyester scrim designed for bonding foamed synthetic rubbers and plastics in the production of gasketing and for cold; it is intended as a support for mainting.

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It is essential, as with all pressure-sensitive tapes, that the surface to which the tape is applied is clean, dry and free of grease and oil.

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6 months when stored at 21°C (70°F), 50% relative humidity, out of direct sunlight.

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Information on the above characteristics is based upon tests we believe to be reliable. The values given are typical values that vary according to application conditions. The values are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine prior to use the suitability of this material for their purposes.

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## special physical information of FasTape 666

physical properties	typical values		units	testmethods
thickness adhesive + carrier	190		microns	FTM.7
liner	75		microns	
total	265		microns	
elongation	25		%	
tensile strength	2.0		kN/m	
tack (FINAT)	1.450		N/m	FINAT.9 FTM.8
adhesion (180° peel)	(20 min.)	(24 h)	N/m	FINAT.1 PSTC.1
stainless steel	2.000	2.200		
aluminium	2.000	2.200		
painted steel	2.000	2.200		
ABS	2.000	2.200		
EPDM, expended	920	920		
hard-PVC	2.100	2.100		
polystyrene	2.000	2.400		
polycarbonat	2.100	2.100		
plywood	850	1.900		
shear resistance (static, 500g)	60		ks	FTM.2 FINAT.8 PSTC.7
temperatures				
application (min.)	+10		°C	
service:				
continous	-40 / +65		°C	
short terme	+70		°C	

## self-adhesive tape *sk super* for foam silicon and silicon

carrier-type:	polyester
carrier-thickness:	0,025 mm
adhesive-type:	mod. polysiloxan
adhesive quantity:	each side ca. 0,075 mm
total thickness:	ca. 0,175 mm
cover:	PVC backing tape
adhesive-strength – departure of a plate:	2 – 4 N/cm
breaking force:	30 – 40 N/10 mm
breaking extension:	20 – 30%
inflammability:	Bu1
warmness:	B
temperature:	from –30°C till +180°C

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**our worksnorm  
to lean on the DIN ISO 3302-1  
class E 3, E2 and E 1**

This edition invalidates any previous versions.

scale in mm	tolerance group E 3 in mm	tolerance group E 2 in mm	tolerance group E 1 in mm
0 to 1,5	± 0,40	± 0,25	± 0,15
over 1,5 to 2,5	± 0,50	± 0,35	± 0,20
over 2,5 to 4	± 0,70	± 0,40	± 0,25
over 4 to 6,3	± 0,80	± 0,50	± 0,35
over 6,3 to 10	± 1,00	± 0,70	± 0,40
over 10 to 16	± 1,30	± 0,80	± 0,50
over 16 to 25	± 1,60	± 1,00	± 0,70
over 25 to 40	± 2,00	± 1,30	± 0,80
over 40 to 63	± 2,50	± 1,60	± 1,00
over 63 to 100	± 3,20	± 2,00	± 1,30
over 100 to 250	± 4,00	± 2,25	
over 250 to 315	± 5,00	± 2,50	
over 315 to 400	± 6,00	± 3,00	
over 400 to 500	± 7,00	± 3,50	

At one-sided tolerance, therefore only at + or at -, is the declared tolerance quantity doubled, insted of ± 0,50 mm, +1,00 or -1,00 mm.