

DONIFLEX® GR-EM



Composite gasket material consisting of advanced graphite-based, »beater-addition« facing material mechanically bonded to a galvanized low carbon expanded mild steel insert with exceptional radial strength, significantly improved tensile strength and resilience.

BASIS

Aramid fibers, graphite, NBR

COLOR

Black

SURFACE TREATMENT

Branded, without coating

A special silver coloured non-stick top and bottom layer as well as other additional surface treatments (silicone, PTFE) are available on request.

APPLICATION

Doniflex® GR-EM is a composite gasket material consisting of advanced graphite-based, »beater-addition« facing material mechanically bonded to a galvanized low carbon expanded mild steel insert. Due to the expanded metal reinforcement, the gasket material features a number of outstanding properties as compared to conventional soft materials. It provides exceptional radial strength, significantly improved tensile strength, resilience and other fluid resisting properties required of a reliable gasket material capable to cope with higher combinations of pressure and temperature stress. The expanded metal reinforcement permits the optimization of surface pressure distribution on assembled gasket. Thanks to optimum properties and dimensions of expanded metal insert material is easy to handle; without additional slitting significant reduction of operation costs can be achieved. In spite of its expanded metal reinforcement gasket material also exhibits high sealability against gases at elevated temperature. Doniflex® GR-EM can, therefore be used as a general purpose material for many industrial-sealing applications, as well as a high-performance gasketing material for dynamically and thermally stressed joints. Typical applications include sealing of water, steam, oils, hydrocarbons and chemicals where the medium to be sealed allows the use of a zinc-galvanized steel reinforcement, in flanges, fittings, pumps, valves, exhaust systems, engines, vessels and heat exchangers in automotive, petrochemical, pulp and paper, food, pharmaceutical industry in power stations as well as in shipbuilding.

DIMENSIONS OF STANDARD SHEET

Sheet size: 1500 × 1480 mm

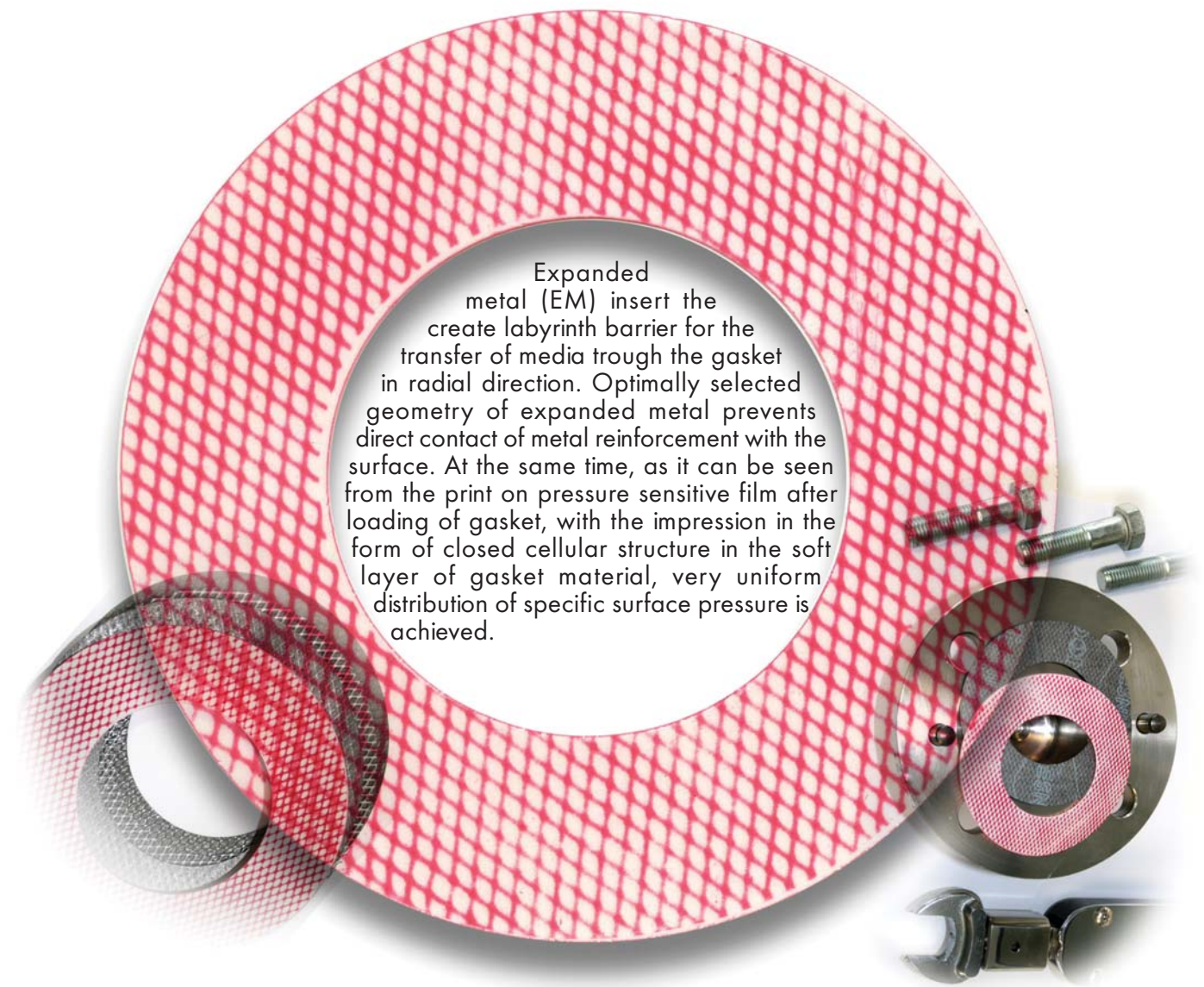
Thickness: 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm, 4.0 mm

TECHNICAL DATA

General information for a thickness of 1 mm

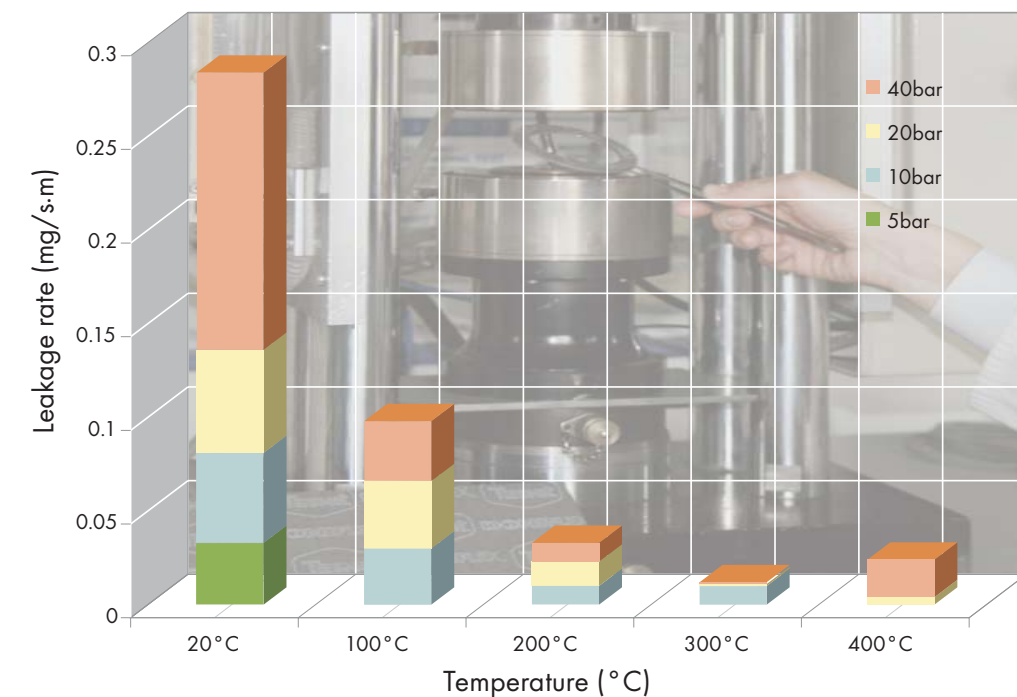
Density	DIN 28090-2	g/cm ³	1.75 - 1.95
Compressibility	ASTM F 36/J	%	15 - 25
Recovery	ASTM F36/J	%	min 20
Stress resistance (50MPa, T=300°C, 16h)	DIN 52913	MPa	min 40
Stress resistance (50MPa, T=175°C, 16h)	DIN 52913	MPa	min 42
Immersion in oil IRM 903, 5h, 150°C	ASTM F146		
· thickness increase		%	max 10
· weight increase		%	max 20
Immersion in ASTM fuel B, 5h, 20°C	ASTM F146		
· thickness increase		%	max 10
· weight increase		%	max 20
Specific leak rate	DIN 3535/6	mg/(s.m)	max 0.1
Specific leak rate at 100°C	DIN 28090/2	mg/(s.m)	max 0.05
Specific leak rate at 300°C	DIN 28090/2	mg/(s.m)	max 0.1
Creep deformation - 50MPa			
· change in thickness at 300°C		%	max 10
· change in thickness at 450°C		%	max 15
Maximum continuous temperature		°C	400
Short-term peak temperature		°C	500

All information data are based on years of experience in production and operation of sealing elements. However, in view of the wide variety of possible installation and operating conditions one cannot draw final conclusions in all application cases regarding the behavior in gasket joint. The data may not, therefore, be used to support any warranty claims. This edition cancels all previous issues. Subject to change without notice.



Expanded metal (EM) insert the create labyrinth barrier for the transfer of media trough the gasket in radial direction. Optimally selected geometry of expanded metal prevents direct contact of metal reinforcement with the surface. At the same time, as it can be seen from the print on pressure sensitive film after loading of gasket, with the impression in the form of closed cellular structure in the soft layer of gasket material, very uniform distribution of specific surface pressure is achieved.

High temperature leakage test with N₂



MEDIA RESISTANCE

Media resistance chart serves only as a guideline for the selection of material for particular application. Due to the variety of assembly and operating conditions, the data may not be used to support any warranty claims.

ACETALDEHYDE	liquid solutions	MALEIC ANHYDRIDE	liquid solutions
AIR	oil, mineral oil products	MARLOTERM	gas
ALLYL CHLORIDE	miscellaneous	MERCURY	liquid solutions
ALUM	liquid solutions	MERCURY SALTS	liquid solutions
ALUMINIUM CHLORIDE	oil, mineral oil products	MINERAL OIL	liquid solutions
ALUMINIUM SULPHATE	oil, mineral oil products	MINERAL OIL	liquid solutions
AMMONIUM PHOSPHATE	oil, mineral oil products	MOTOR OIL	liquid solutions
ANILIN-HYDROCHLORIDE			liquid solutions
ASPHALT	liquid solutions	NICKEL SALTS	oil, mineral oil products
ASTM OIL NO.1 FUEL	gas	NITROGEN	oil, mineral oil products
ASTM OIL NO.2 FUEL			oil, mineral oil products
ASTM OIL NO.3C FUEL	oil, mineral oil products	OIL ACID	oil, mineral oil products
ASTM FUEL A			oil, mineral oil products
ASTM FUEL B	oil, mineral oil products	PARAFFIN	oil, mineral oil products
ASTM FUEL C	oil, mineral oil products	PETROLEUM	oil, mineral oil products
ASTM FUEL D	liquid solutions	PHOTOGRAPHIC EMULSIONS	oil, mineral oil products
AZ 20 (32+125)	liquid solutions	PHTHALIC ANHYDRIDE	oil, mineral oil products
	oil, mineral oil products	POLYETHYLENE GLYCOL	
BEER	liquid solutions	POTASH	liquid solutions
BENZINE	liquid solutions	POTASSIUM ALUM	oil, mineral oil products.
BITUMEN	liquid solutions	POTASSIUM BROMATE	oil, mineral oil products
BORAX	liquid solutions	POTASSIUM BROMIDE	liquid solutions
BRAKE FLUID (GLYCOL BASIS)	liquid solutions	POTASSIUM CARBONATE	oil, mineral oil products
BUTADIENE	liquid solutions	POTASSIUM PHOSPHATE	oil, mineral oil products
BUTENE (BUTYLENE)	liquid solutions	POTASSIUM SALT	oil, mineral oil products
	gas	POTASSIUM SULPHATE	
CALCIUM CHLORIDE		PROPYLENE OXIDE	liquid solutions
CALCIUM NITRATE			liquid solutions
CARBON DIOXIDE	liquid solutions	SACCHAROSE	gas
CHLORINE GAS DRY	liquid solutions	SALT	gas
CHROME ALUM	oil, mineral oil products	SANTOTHERM 66	liquid solutions
COCONUT OIL	liquid solutions	SEA WATER	oil, mineral oil products
CONDENSATE WATER	oil, mineral oil products	SILICONE GRAESE	water, steam
COPPER SALT	liquid solutions	SILVER SALT	liquid solutions
	liquid solutions	SOAP SOLUTION	
DEMINERALIZED WATER	liquid solutions	SODA	water, steam
DEXTRINE	liquid solutions	SODIUM BROMIDE	liquid solutions
DIESEL FUEL	liquid solutions	SODIUM CARBONATE	oil, mineral oil products
DIPHYL (HEAT CARRIER OIL)	liquid solutions	SODIUM CHLORIDE	oil, mineral oil products
	liquid solutions	SODIUM DISULPHITE	
ETHYLCELLULOSE	liquid solutions	SODIUM DITHIONITE	liquid solutions
	liquid solutions	SODIUM FLUORIDE	
FRUIT JUICE	liquid solutions	SODIUM HYDROGEN-CARBONATE	liquid solutions
FLUE GAS	liquid solutions	SODIUM HYDROGEN-SULPHATE	gas
FURNACE GAS	liquid solutions	SODIUM HYDROGEN-SULPHITE	gas
	liquid solutions	SODIUM IODIDE	
GEAR OIL	liquid solutions	SODIUM PERBORATE	oil, mineral oil products
GELATIN	liquid solutions	SODIUM PHOSPHATE	liquid solutions
GENERATOR GAS	liquid solutions	SODIUM SILICATE	gas
GLAUBER SALT	liquid solutions	SODIUM SULPHATE	liquid solutions
GLUCOSE	liquid solutions	SODIUM SULPHITE	liquid solutions
GLYCOL	liquid solutions	SODIUM THIOSUPHATE	liquid solutions
GLUE	oil, mineral oil products	SPINDLE OIL	liquid solutions
	oil, mineral oil products	SPIRITS	
HEAT CARRIER OIL	liquid solutions	STARCH SOLUTION	oil, mineral oil products
HEPTANE (-n)	water, steam	STEAM	oil, mineral oil products
HEXANE (-n)	gas	SULPHUR DIOXIDE	oil, mineral oil products
HOT WATER	oil, mineral oil products	SYLTERM 800	water, steam
HYDRAULIC OIL	oil, mineral oil products	SYNTREL 350	oil, mineral oil products
HYDROSULPHITE			liquid solutions
	liquid solutions	TANNIC ACID	
INERT GAS	oil, mineral oil products	TAR	gas
ISOCTANE	oil, mineral oil products	TEST BENZINE	oil, mineral oil products
ISOPROPYL ACETATE	oil, mineral oil products	TETRAETHYL LEAD	liquid solutions food
	oil, mineral oil products	TRANSFORMER OIL	
KEROSINE FUEL	liquid solutions	TRI SODIUM PHOSPHATE	oil, mineral oil products
	oil, mineral oil products	TURBINE OIL	
LANOLINE (WOOL GREASE)			liquid solutions
LATEX	oil, mineral oil products	VASELINE	liquid solutions
LAUGHING GAS	oil, mineral oil products	VEGETABLE FAT	gas
LIGHTING GAS	oil, mineral oil products	VEGETABLE OILS	oil, mineral oil products
LINK UP MEDIUMS	gas	VINYL CHLORIDE	liquid solutions
LINSEED OIL			liquid solutions
LITHIUM BROMIDE	liquid solutions	WASCHING AGENT	liquid solutions
LUBRICATING OIL	gas	WASTE GAS	oil, mineral oil products
	liquid solutions	WASTE WATER	
MACHINE OIL			oil, mineral oil products
MAGNESIUM SALT	liquid solutions	ZINC SALTS	liquid solutions

In order to spread the most comprehensive knowledge of our products, our highly skilled group of experts organized in technical-service department can assist you by solving your sealing problem. If you need our help, contact us.

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DONIFLEX®
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Sealing
Materials

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