VR X

Technical Data Sheet 180, previously ---
Issue 05/2002, this supersedes all previous versions

Material	**VR X** consists of a pegged stainless steel sheet as the core, with a layer of fibreglass reinforced mica material applied to both sides. 0.20 mm thick stainless steel 1.4828 is used as the core. In addition to expanded mica, the material contains high-temperature-resistant fibres, together with a small proportion of high quality elastomers as binding agents.
Properties	**VR X** is resistant to high temperatures up to 950 °C, due to the use of mica and the heat-resistant 1.4828 mm stainless steel core. **VR X** displays excellent sealing potential over the full temperature range due to this combination. Its high compressibility and elasticity gives it good adaptability, allows it to compensate optimally for component distortions (macro-adaptation), and it also displays constant material properties under alternating operating conditions. The pegged steel core lends the material a high resistance to pressure, i.e. little settlement. **VR X** is resistant to agents such as oils, fuels, exhaust gases, antifreezes and many other besides.
Application	As a material for the exhaust area in any internal combustion engine (e.g. truck engines, marine diesel engines, gas engines for fitting between the cylinder head and manifold, and in the follow-on flanged connections for exhaust systems, for turbocharger seals or afterburner gaskets (exhaust gas recycling), especially for the purpose of complying with stringent emission limits as laid down in EURO D4. It may also be used for sealed unions on burners in heating systems, high-temperature heat exchangers, gas turbines and other applications. With extreme mechanical loadings and sealing requirements, we recommend the use of a stainless steel inner eyelet. In addition to increased internal pressure loading capability, cross-sectional sealing, and blow-out safety, it also provides improved resistance to chemicals.

Technical Data
(Nominal thickness 1.6 mm)

Stress resistance according to DIN 52 913; 16 hours, 300°C

Nominal thickness 1.2 mm	N/mm²	≥ 42
Nominal thickness 1.6 mm	N/mm²	≥ 38

Core

Stainless steel		1.4828

Core Thickness	mm	0,20

Ignition loss of the soft material; 1 hour, 950°C	%	< 10

Compressibility and recovery
according to ASTM F 36, Process J

compressibility	%	5 – 15
recovery	%	> 40

Swelling according to ASTM F 146

in oil, IRM 903 (replaces ASTM oil No. 3)

5 hours, 150°C		
increase in thickness increase in weight	% %	≤ 5 ≤ 15
in ASTM fuel B 5 hours, room temperature		
increase in thickness increase in weight	% %	≤ 5 ≤ 10
in water/antifreeze (50:50) 5 hours, 100°C		
increase in thickness increase in weight	% %	≤ 10 ≤ 18
Thermal conductivity	W/(m·K)	≈ 0,6
Maximum continuous temperature	°C	950
Maximum surface pressure at 600°C	N/mm²	75

The data quoted above are valid for the material "as delivered" without any additional treatment. In view of the multiplicity of possible installation and operating conditions, definitive conclusions cannot be drawn for all applications regarding the behavior in a sealing joint. For this reason, we do not give any warranty for technical data. They do not represent warranted properties. If you have any doubt, please contact us and specify exact operating conditions.

Form of delivery

Gaskets	according to a drawing, dimensions given or other arrangement.
Rolls	500 mm wide

Additional delivery forms as agreed.

Nominal thicknesses and tolerances (mm)

1,2	**1,6**			
±0,1	±0,1			

Length of roll (m)
170 (thickness 1.2 mm)
130 (thickness 1.6 mm)

Inner eyelet
For critical applications, an inner eyelet is recommended.