



AFM 34 Metall

AFM 34 Metall

Technical Data Sheet 134 (previously TD 279)

Edition: 05/2012, supersedes all prior editions.

Please see the latest issue under www.reinz.com/datasheet

Material

AFM 34 METALL is an asbestos-free gasket material with a strong reinforcement of expanded stainless steel 1.4404 (316L) which is 0.5 mm thick. The material is physiologically safe and contains no color pigments. It is composed of aramide fibers and other asbestos substitutes which are resistant to high temperatures and are processed with high-grade elastomers under elevated pressure and temperature.

Properties

AFM 34 METALL is resistant to media such as oils, solvents, fuels, steam, saline solutions, refrigerating agents (freons), alcohols, and many others.

Due to the expanded metal mesh reinforcement, the gasket material features a number of outstanding properties as compared to conventional composite materials. **AFM 34 METALL** exhibits very high tensile strength, high stress and shear resistance, and is extremely easy to handle. **AFM 34 METALL** exhibits far lower values for hot creep than conventional composite materials.

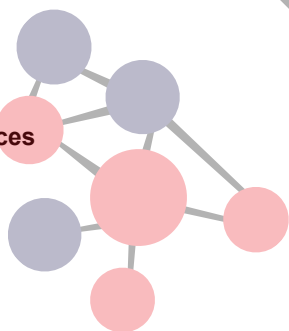
The expanded metal mesh reinforcement permits **AFM 34 METALL** to cope better with higher pressures and temperatures than conventional non-reinforced materials. It is also suitable for sealing hot water and steam up to 200 °C in stationary applications and with an installation surface pressure of at least 75 N/mm². Please consult us if you have a specific application.

In spite of its expanded metal reinforcement, the gasket material exhibits high sealability with gases – a novel feature with metal-reinforced fiber gasket materials.

Application

- for DIN and ANSI flanges, fittings, pumps and apparatus in chemical plants, refineries, power stations as well as in shipbuilding and in high-pressure gas supply plants and refrigeration engineering
- in general for sealed joints in which high mechanical and/or thermal stresses or alternating loads occur
- for sealing components with relatively narrow lands, e.g. heat exchangers, steam fittings, air and refrigerating compressors as well as all threaded couplings
- also suitable for sealed joints subject to high mechanical stress in IC engines, e.g. for sealing intake manifolds and timing cases.

Surfaces



As standard, both sides of **AFM 34 METALL** are coated with a non-stick, high-friction layer that greatly facilitates disassembly. In most cases, additional surface treatment is unnecessary. However, a graphite coating on one or both sides of the gasket is required when used with components that rotate on the gasket during assembly, e.g. in threaded couplings, radiator plugs, etc., as a low friction value is required in these cases.

Approvals

UVV 61 "Gases", AD- B7 (VdTÜV) blowout-proof gasket

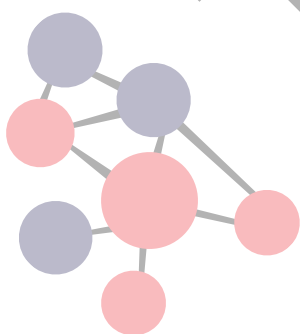


AFM 34 Metall

Technical Data

(nominal thickness 1.0 mm)

Density	g/ cm ³	≈ 2.6
Ignition loss acc. to DIN 52 911	%	< 22
Tensile strength		
across grain	N/ mm ²	> 60
with grain	N/ mm ²	> 33
Residual stress acc. to DIN 52 913		
16 h, 300 °C	N/ mm ²	≈ 42
16 h, 175 °C	N/ mm ²	≈ 46
Compressibility and recovery		
acc. to ASTM F 36, procedure J		
compressibility	%	≈ 5
recovery	%	≈ 60
Sealability against nitrogen		
acc. to DIN 3535, part 6 FA	mg/ (s·m)	≈ 0.05
Swelling acc. to ASTM F 146		
in IRM 903 Oil (replaces ASTM Oil No. 3)		
5 h, 150 °C		
increase in thickness	%	< 10
increase in weight	%	< 10
in ASTM Fuel B		
5 h, room temp.		
increase in thickness	%	< 10
increase in weight	%	< 10
in water / antifreeze (50:50)		
5 h, 100 °C		
increase in thickness	%	< 5
increase in weight	%	< 5
Content of water- soluble chloride	ppm	< 100
Minimum installed surface pressure σ_{VUL}		
for sealing against helium acc. to		
Reinz Test Method RPM 505:		
Leakage rate 10-2 mbar·l/ s·m = 0.6 cm ³ / min·m		
at 10 bar	N/ mm ²	60
at 25 bar	N/ mm ²	80
at 50 bar	N/ mm ²	100
Short- term peak temperature	°C	400
Maximum continuous temperature	°C	275
for steam up to	°C	240
Maximum operating pressure	bar	300



Max. continuous temperature and max. pressure must not occur simultaneously, please refer to the table entitled "Max. operating pressures at various temperatures and with various media"!

The data quoted above are valid for the material "as delivered" without any additional treatment. In view of the countless possible installation and operating conditions, definitive conclusions cannot be drawn for all applications regarding the behaviour in a sealed joint. Therefore, we do not give any warranty for technical data, as they do not represent assured characteristics. If you have any doubt, please contact us and specify the exact operating conditions.

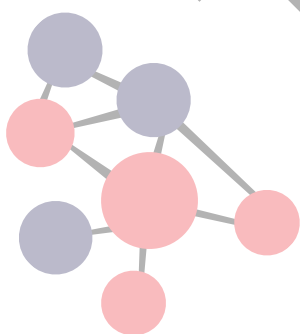


AFM 34 Metall

Technical Data

(nominal thickness 1.5 mm)

Density	g/ cm ³	≈ 2.45
Ignition loss acc. to DIN 52 911	%	< 24
Tensile strength		
across grain	N/ mm ²	> 52
with grain	N/ mm ²	> 33
Residual stress acc. to DIN 52 913		
16 h, 300 °C	N/ mm ²	≈ 33
16 h, 175 °C	N/ mm ²	≈ 43
Compressibility and recovery		
acc. to ASTM F 36, procedure J		
compressibility	%	≈ 5
recovery	%	≈ 60
Sealability against nitrogen		
acc. to DIN 3535, part 6 FA	mg/ (s·m)	≈ 0.05
Swelling acc. to ASTM F 146		
in IRM 903 Oil (replaces ASTM Oil No. 3)		
5 h, 150 °C		
increase in thickness	%	< 10
increase in weight	%	< 10
in ASTM Fuel B		
5 h, room temp.		
increase in thickness	%	< 10
increase in weight	%	< 10
in water / antifreeze (50:50)		
5 h, 100 °C		
increase in thickness	%	< 5
increase in weight	%	< 5
Content of water- soluble chloride	ppm	< 100
Minimum installed surface pressure σ_{VUL}		
for sealing against helium acc. to		
Reinz Test Method RPM 505:		
Leakage rate 10-2 mbar·l/ s·m = 0.6 cm ³ / min·m		
at 10 bar	N/ mm ²	45
at 25 bar	N/ mm ²	60
at 50 bar	N/ mm ²	80
Short- term peak temperature	°C	400
Maximum continuous temperature	°C	260
for steam up to	°C	240
Maximum operating pressure	bar	250



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AFM 34 Metall

Technical Data

(nominal thickness 2.0 mm)

Density g/ cm³ ≈ 2.3

Ignition loss acc. to DIN 52 911 % < 26

Tensile strength

across grain N/ mm² > 45
with grain N/ mm² > 33

Residual stress acc. to DIN 52 913

16 h, 300 °C N/ mm² ≈ 25
16 h, 175 °C N/ mm² ≈ 40

Compressibility and recovery

acc. to ASTM F 36, procedure J
compressibility % ≈ 5
recovery % ≈ 60

Sealability against nitrogen

acc. to DIN 3535, part 6 FA mg/ (s·m) ≈ 0.05

Swelling acc. to ASTM F 146

in IRM 903 Oil (replaces ASTM Oil No. 3)

5 h, 150 °C
increase in thickness % < 10
increase in weight % < 10

in ASTM Fuel B

5 h, room temp.
increase in thickness % < 10
increase in weight % < 10

in water / antifreeze (50:50)

5 h, 100 °C
increase in thickness % < 5
increase in weight % < 5

Content of water- soluble chloride ppm < 100

Minimum installed surface pressure $\sigma_{VUI,L}$

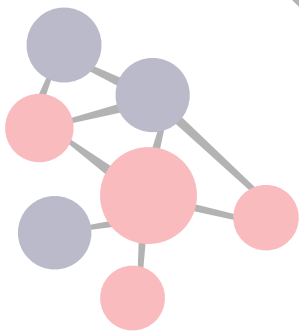
for sealing against helium acc. to
Reinz Test Method RPM 505:
Leakage rate 10-2 mbar·l/ s·m = 0.6 cm³/ min·m
at 10 bar N/ mm² 34
at 25 bar N/ mm² 45
at 50 bar N/ mm² 60

Short- term peak temperature °C 400

Maximum continuous temperature °C 250
for steam up to °C 240
with metal inner eyelet (ME)
for steam up to °C 275

Maximum operating pressure bar 200

Max. continuous temperature and max. pressure must not occur simultaneously, please refer to the table entitled "Max. operating pressures at various temperatures and with various media"!



AFM 34 Metall

DIN 28091-2:

Cold creep ϵ_{KSW}	%	5 - 8
Cold recovery ϵ_{KRW}	%	2 - 4
Hot creep during service $\epsilon_{WSW/T}$	%	4 - 7
Hot recovery $\epsilon_{WRW/T}$	%	≈ 0.60
Recovery R	mm	≈ 0.01
Specific leakage rate λ	mg/ (s·m)	< 0.1
Residual surface pressure after 1000 h (in air at 100 °C)	%	> 50

Sealing parameters see [Table](#)



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Form of delivery

Gaskets according to a drawing, dimensions supplied or other arrangement.

Sheets 1250 x 1500 mm (standard size)

Nominal thicknesses and tolerances acc. to DIN 28091-1 (mm)
Dimensional limits within a shipment

1.00	±0.10
1.50	±0.15
2.00	±0.20

Max. thickness variation in a sheet:
0.1 mm for sheet thickness ≤ 1.00 mm, and 0.2 mm for thickness > 1.00 mm

