Fabric
expansion joints

Overview of Materials

ROTH fabric expansion joints are manufactured without any asbestos as a matter of principle. Insulation is provided nowadays by glass and silicate materials, which also serve as a substrate for various coating. Sealing foils and fully vulcanized elastomers are also used.

The suitability and durability of an expansion joint are determined less by structure of an individual layer than by correct composition of materials and appropriate processing. Both, practical experience and the Know-How of the expansion joint manufacturer are essential in this context.

The following table contains information regarding the compatibility of the most common materials used in the construction of fabric expansion joints against the most common chemical substances: acids and lyes. Also, the maximal temperature resistance (in operation) for each of these materials is showed in the second column.

Material overview	Temperature resistance max. [°C]	Chemical resistance		Description
		Acids	Lye	
Insulating material				
Ceramic fiber	1250 °C	+	+	For loose filling or quilted in fabric, also available incorporated in expansion joint.
Mineral wool	750 °C	O	O	For loose filling or quilted in fabric, also available incorporated in expansion joint.
Insulating glass	500 °C	+	+	Glass mat, also for use in some types of shaped fabric expansion joints.

Material overview	Temperature resistance max. [°C]	Chemical resistance		Description
		Acids	Lye	
Uncoated fabric				
INCONEL	1250°C	+	+	Woven ceramic fiber with INCONEL reinforcement.
Thermosil 650H	1100°C	+	+	Silicate fabric, extremely resistant to acids and temperature.
Thermotex 1100 HT	700 °C	+	+	Special fabric with high-temperature finish.
Thermotex 1100 NIRO	600 °C	+	+	Woven mineral fiber with stainless steel wire reinforcement ≈ 1100 g/m^2.
Glastex 1000	550 °C	+	+	Special glass fabric with high temperature resistance and good insulating effect, ≈ 1000 g/m^2
Glastex 800	500 °C	+	+	Glass fiber fabric, high tensile strength, ≈ 800 g/m^2.
Glastex 440	500 °C	+	+	Glass fiber fabric, high tensile strength, ≈ 440 g/m^2.
Aramid	200 °C	+	+	High-strength fabric for extreme mechanical loads.
Stainless steel 1.4301 1.4828	600-1000 °C	+	+	Fine wire-netting, choice of material depends on requirements.
Coated fabric				
VITON-Glastex 1 VITON-Glastex 2	180 °C	+	+	Glass fiber fabric with VITON-coating, excellent chemical resistance.
PTFE Glastex 20/600	280 °C	+	+	Glass fiber fabric, one side with PTFE-Foil 0,2 mm, compound material.
PTFE Glastex 20/10/600	280 °C	+	+	Glass fiber fabric, one side 0,2 mm, other side 0,1 mm PTFE-foil, compound material.
TFM-Glastex	280 °C	+	+	Glass fiber fabric, one side with TFM-Foil 0,4 mm, compound material.
PTFE-Glas 15	280 °C	+	+	PTFE-covered glass fabric, 0,15 mm thickness
Silglas 1 Silglas 2	180 °C	–	O	Glass fabric, one side/both sides with silicone-coating grey or white.
Silaramid 1 Silaramid 2	150 °C	–	O	Aramid fabric, one side/both sides with silicone-coating grey or white.

Material overview	Temperature resistance max. [°C]	Chemical resistance		Description
		Acids	Lye	
Coated fabric				
Alufix 1 Alufix 2	150 °C	–	–	Glass fabric, one side/both sides with PU-coating, grey hardly inflammable, oil resistant.
Aluglas 430	200 °C	–	–	Glass fabric, one side with aluminum-coating.
Glastex 4435	400 °C	+	+	Glass fabric, one side with stainless steel coating.
Hypatex	120 °C	+	+	Polyester fabric, both sides with hypalon-coating.
Polytex	70 °C	+	+	Polyester fabric, both sides with PVC-coating.
Foils				
PTFE 25	260 °C	+	+	PTFE-foil 0,25 mm thick, virginal
Silicone	180 °C	–	O	Silicone-foil 1,5 mm or 2,5 mm thick, for high tightness requirements.
FPM (z.B. / pl. Viton)	180 °C	+	+	FPM-foil with high chemical resistance.
Stainless steel, INCONEL	600 °C	+	+	Stainless steel foil, good chemical and thermal resistance, choice of materials depends on requirements.
Soft-PVC	90 °C	+	+	High chemical resistance.
EPDM Neoprene Perbunan Butyl Mipolam	80 °C	+	+	With different layer thickness, also with inner fabric layer.
Hypalon	120 °C	+	+	Hypalon-foil, 2,0 mm thick, high chemical resistance.

+ = Resistant; O = Conditionally Resistant; – = Not resistant.

Insulation Notes

Normally fabric expansion joints must not be included in external piping insulation to allow the calculated and necessary heat transfer. If you would like to install an insulation, please contact us, such that we may choose a special design for your expansion joints.

The piping insulation must not contact the expansion joint flanges under all circumstances. Generally a distance of at least 80 mm has to be kept between piping insulation and expansion joint. The duct insulation at ROTH fabric expansion joints has to be approved by our technical department. The installation of outer protection shields at the expansion joints has to be approved too.