



TYPE APPROVAL CERTIFICATE

Certificate No:
TAP000015T
Revision No:
1

This is to certify:

That the Compensator, Textile Material

with type designation(s)
FRENZELIT FLEXIBLE EXPANSION JOINTS

Issued to

Frenzelit GmbH
Bad Berneck i. Fichtelgebirge, Bayern, Germany

is found to comply with
RAL-GZ 719:2016-08 Expansion Joints – Quality Assurance

Application :

Refer to certificate

Temperature range: see manufacturer's instruction
Max. working press.: see manufacturer's instruction
Sizes:

Issued at **Hamburg** on **2023-05-04**

for **DNV**

This Certificate is valid until **2028-05-03** .

DNV local unit: **Augsburg**

Approval Engineer: **Christof Kotzmann-Bendrien**

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Sven Klinger
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 281

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Product description

Fabric flexible expansion joints. Type: FRENZELIT FLEXIBLE EXPANSION JOINTS

The flexible expansion joints are made of non-asbestos fabrics depending upon the medium and temperature range:

Up to 250 [°C]:

The number of layers of coated fabrics and the geometry and processing are adapted individually to each requirement.

If necessary, single layers can be fully glued up with each other.

Above 250 [°C] up to 450 [°C]:

Multi-layer construction, the compensators are made of isolating layers, sealing films and carrier layers. Carrier layers support the inner layers and the sealing films as well as outer layers.

Above 450 [°C] up to 1000 [°C]:

Multi-layer construction, using guiding plates and insulation pad from mineral and ceramic wool, fixed with stainless steel wire mesh, which is placed in front of the expansion joint.

Technical data

Isolating layers:	silica fabric, Isowool HT 1200, Isowool 750, isotherm fabric, isoglas fabric and isoglas needlemat.
Sealing films:	aluminium-, stainless steel foil, PTFE film, coated fabrics.
Carrier layers:	wire mesh, glass fabric with or without coating, if necessary outer layers fully glued.
Supporting rings:	supporting rings from stainless steel pipes will be used for stabilisation against positive pressure and vacuum.
Protection:	outer coatings from silicone or PTFE as protection against splashing water, dust etc., if required.

Application/Limitation

The fabric flexible expansion joints are approved for the use in:

- Exhaust gas lines of internal combustion engines, in case of supercharging only behind exhaust gas turbine
- Air inlet lines of internal combustion engines
- Exhaust gas lines of boilers
- Air inlet and exhaust gas lines of gas turbines
- Ventilation and aeration lines

This Type Approval certificate is not valid for designs, components, equipment, systems or products which are subject to classification by DNV.

Limitation

The installation has to be carried out in accordance with the instructions of the manufacturer.

The use of the above described fabric flexible expansion joints outside the specified application is not permitted.

Type Approval documentation

- Product Specification
- Installation Requirements
- Quality Assurance Manual
- Type Approval Assessment Report, dated: 2017-12-01

Tests carried out

- RAL-GZ-719 – Expansion joints Quality assurance (Edition 03/2017) /
Quality levels and test specifications for fabric expansion joints

Marking of product

Every expansion joint is marked with a tag number on a label to clearly identify the production and supply data in manufacturers data base for traceability.

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment to verify that the conditions for the Type Approval are complied with. Refer to the Class Program DNV-CP-0338, Sec.4.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>