



Germanischer Lloyd

# Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No. **82 675 - 80 HH**

Company **Frenzelit-Werke GmbH & Co. KG**  
**Postfach 1140**  
**95456 Bad Berneck, GERMANY**

Product Description **FABRIC COMPENSATORS**

Type **FRENZELIT FLEXIBLE EXPANSION JOINTS**

Environmental Category **None**

Technical Data /  
Range of Application **TECHNICAL DATA**  
**- see page 2 -**

## RANGE OF APPLICATION

The compensators 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

## INSTALLATION

- In accordance with the installation instructions of the manufacturer.

Test Standard • Regulations for the Performance of Type Tests on Mechanical Components and Equipment of Germanischer Lloyd.

Documents • Product Specification  
• Installation Requirements  
• Quality Assurance Manual

Remarks **None**

Valid until **2012-07-01**

Page **1 of 2**

Type Approval Symbol



File No. **II.D.07**

**Hamburg, 2007-06-12**

**Germanischer Lloyd**

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## PRODUCT DESCRIPTION

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: | silicate fabric, ceramic wool, 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               |

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Page 2 of 2

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This certificate is issued on the basis of "Guidelines for the Performance of Type Approvals Part 1, Procedure".