



**DNV**

KAIMANN Nr.: INT17503

# DET NORSKE VERITAS TYPE APPROVAL CERTIFICATE

**CERTIFICATE NO. F-18087**  
This Certificate consists of 3 pages


*This is to certify that the*  
**Thermal and sound insulation material with low flame-spread characteristics**  
*with type designation(s)*  
**Kaiflex ST, Kaiflex HF, Kaiflex KK**

*Manufactured by*  
**WILHELM KAIMANN GmbH & Co.**  
Hövelhof, Germany

*is found to comply with*  
Det Norske Veritas' Offshore Standards  
Det Norske Veritas' Rules for Classification of Ships  
Det Norske Veritas' Interpretation of SOLAS 1974 Convention as Amended

*Application*  
Approved for use as insulation material of low flame spread characteristics, not generating excessive quantities of smoke nor toxic products in fire. The materials are not defined as non-combustible

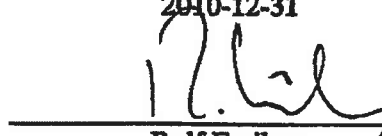
*Place and date*  
Høvik, 2006-07-05  
for DET NORSKE VERITAS AS

  
Petter Langnes  
Head of Section



Local Office  
DNV Essen

*This Certificate is valid until*  
2010-12-31

  
Rolf Emilsen  
Surveyor

**Notice:** 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: F-18087  
File No. 471.61  
Job No.: 262.1-001470-1

### Product description

#### **"Kaiflex ST"**

is a synthetic rubber based thermoplastic insulation material in the form of plates and tubes with wall thickness range 6 - 50 mm and nominal density of 60 - 110 kg/m<sup>3</sup>.

When the material is glued to the pipes, ducts, etc., the adhesive Kaiflex glue "Kaiflex Kleber 414" is to be used.

#### **"Kaiflex HF"**

composed of elastomeric foam based on a synthetic rubber, thermoplastics and additives. Density of insulation material is approx. 65kg/m<sup>3</sup>.

Approved thickness for the insulation material is 13-19mm.

#### **"Kaiflex KK"**

is a synthetic rubber based thermoplastic insulation material in the form of plates and tubes with wall thickness range 6 - 50 mm.

When the material is glued to the pipes, ducts, etc., the adhesive Kaiflex glue "Kaiflex Spezial Kleber" is to be used.

Pipes insulated with "Kaiflex KK" may be supported using "Kaiflex RT" composed from two PU cubes cut into "Kaiflex KK", covered with PVC foil.

### Applications/limitations

The products may be used on cold service pipe work/fittings for refrigeration system everywhere onboard, and for pipe work, fittings, air ducts and tanks insulation in cargo areas, mail rooms, baggage rooms and refrigerated compartments of service spaces, and exterior locations.

Any adhesive used, other than the one used during testing, has to be approved for low flame spread characteristics and low emission of smoke and toxic gases. (Note IMO MCS/Circ. 916)."

Extent of application is to be considered and accepted for each case/project.

Each product is to be supplied with its manual for installation and use.





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### **Type Approval documentation**

Certification in accordance with Certification Note No. 1.2, Type Approval, December 1996.

Test report No. SN02/1856.1 dated 26 February 2002, and No. SN01/1466.2 dated 8 February 2002 from Brandversuchshaus Hamburg, TÜV Nord, Germany (Kaiflex ST).  
Nos. SN02/2645.2 and SN02/2645.3 dated 20 September 2002 from TÜV Nord Bauqualität GmbH & Co. KG, Hamburg, Germany (Kaiflex HF).

Test report No. SN99.62.1 and SN99.62.2 dated 27 August 1999, and No. SN99.82.1 dated 9 November 1999 from Brandversuchshaus Hamburg, TÜV Nord, Germany.

Test report No. SN01/1466.1 dated 18 October 2001 from Brandversuchshaus Hamburg.

Test reports Nos. 16-902 058 000/1 dated 16 April 2002 and 16-902 058 000/3 dated 30 September 2002 from Otto Graf Institut, Universität Stuttgart, Germany (Kaiflex KK).

Certificate Retention Survey Report ESN 06-2683 dated 29 June 2006 from DNV Essen.

Testing according to IMO FTPC Part 5 (Res. A.653(16)) and IMO FTPC Annex 2, ch. 2.2.

### **Marking of product**

The product or packing is to be marked with name of manufacturer, type designation and fire-technical rating.

### **Certificate retention survey**

Det Norske Veritas' surveyor is to be given permission to perform Certification Retention Surveys at any time during the validity period of this certificate. The arrangement is to be in accordance with procedure described in item 4.3, Certification Note No. 1.2.

**END OF CERTIFICATE**



*Ande*