



## CERTIFICATE OF FIRE APPROVAL

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

<b>Manufacturer</b>	L'Isolante K-Flex SpA
<b>Address</b>	Via Leonardo da Vinci 36 20877 Roncello (MB) Italy
<b>Type</b>	<b>MATERIAL HAVING LOW FLAME SPREAD CHARACTERISTICS &amp; NOT CAPABLE OF PRODUCING EXCESSIVE QUANTITIES OF SMOKE &amp; TOXIC PRODUCTS OF COMBUSTION</b>
<b>Description</b>	Fire-Resisting Material – Type “K-Flex IC-CLAD” Elastomeric Foam Insulation
<b>Specified Standard</b>	IMO Res. MSC.307(88) – (2010 FTP Code) Annex 1 Part 5 & Annex 2

**The attached Design Appraisal Document forms part of this certificate.**

**This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.**

Date of issue 8 August 2017 Expiry date 7 August 2022

Certificate No. SAS F170174

Signed

Sheet No 1 of 2

Name

J. M. Evans  
Surveyor to Lloyd's Register EMEA  
A Member of the Lloyd's Register Group

**Note:**

**This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.**

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## DESIGN APPRAISAL DOCUMENT

Date	Quote this reference on all future communications
8 August 2017	SOUTSO/SFS/TA/JE/WP30056800

### ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F170174

This Design Appraisal Document forms part of the Certificate.

#### APPROVAL DOCUMENTATION

Exova Warringtonfire, Holmesfield Road, Warrington, WA1 2DS, United Kingdom, Fire Test Report No. 308381 dated 21<sup>st</sup> June 2011.

#### CONDITIONS OF CERTIFICATION

1. **Restricted Application:** Restricted to steel substrates of 1mm thickness for chilled water pipes and air conditioning systems
2. Consisting of: one layer of outer facing 'K-Flex IC Clad Silver Foil' glass filament fabric ( 0.2mm thick, weight 204g/m<sup>2</sup>) bonded with acrylic emulsion PSA adhesive manufactured by 'ATP' (application rate 60 g/m<sup>2</sup>) to one layer of 'K-Flex ST' closed cell elastomeric foam insulation ( 25 mm thick, density 55kg/m<sup>3</sup>). Insulation bonded to steel substrate with 'Locklite Super Glue' adhesive manufactured by 'Loctite'
3. Smoke and toxicity criteria is satisfied by meeting the total heat release (Qt) and peak heat release rate (qp) as stated in IMO Fire Test Procedures Code, Annex 2, Section 2.2
4. Composition of individual components, including adhesives and any flame retardants, to be maintained in production in accordance with originally tested composition formula
5. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype

#### PLACE OF PRODUCTION

L'Isolante K-Flex SpA  
Via Leonardo da Vinci 36  
20877 Roncello (MB)  
Italy

K-Flex Polska Sp z.o.o  
Wielenin-Kolonia 50B  
99-210 Uniejow  
Poland



Jessica Evans  
Senior Surveyor  
Statutory Fire & Safety  
Southampton Technical Support Office, Marine & Offshore  
Lloyd's Register EMEA

#### Supplementary Type Approval Terms and Conditions

*This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).*