



## 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</b>
<b>Description</b>	Fire-Resisting Material – Type “K-Flex IN-CLAD” Elastomeric Foam Insulation
<b>Specified Standard</b>	IMO Res. MSC.61(67) – (FTP Code) Annex 1 Part 5 IMO MSC/Circ 1120 IMO Res. MSC.307(88) – (2010 FTP Code) Part 8 IMO Res. MSC.307(88) – (2010 FTP Code) Annex 1 Part 5

**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 31 July 2017 Expiry date 30 July 2022

Certificate No. SAS F170170

Signed

Sheet No 1 of 3

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.**

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



Page	2 of 3
Document number	SAS F170170
Issue number	1

## DESIGN APPRAISAL DOCUMENT

Date	Quote this reference on all future communications
31 July 2017	SOUTSO/SFS/TA/JE/WP29305565

### ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F170170

This Design Appraisal Document forms part of the Certificate.

#### APPROVAL DOCUMENTATION

WarringtonFire Global Safety, Warrington, United Kingdom, Fire Test Report No. 154270 dated 7<sup>th</sup> June 2006.

CSI S.p.A., Viale Lombardia 20, 20021 Bollante (MI), Italy, Fire Test Reports No. 0643\DC\REA\12\_1 dated 5<sup>th</sup> November 2012.

Exova Warringtonfire, Holmesfield Road, Warrington, WA1 2DS, United Kingdom, Fire Test Report No. 361780 dated 2<sup>nd</sup> March 2016.

#### CONDITIONS OF CERTIFICATION

1. **Restricted Application:** Restricted to steel substrates of 1.5mm thickness for chilled water pipes and air conditioning systems
2. Consisting of: one layer of outer facing 'K-Flex IN Clad Rubber Foil' hypalon rubber foil ( 1 mm thick, density 1.6 kg/m<sup>3</sup>) bonded with 'Adhesive Hydro K-Flex' adhesive manufactured by BASF (application rate 60 g/m<sup>2</sup>) to one layer of 'K-Flex ST' closed cell elastomeric foam insulation ( 25 mm thick, density 40-80 kg/m<sup>3</sup>). Insulation bonded to steel substrate with 'Locklite Super Glue' adhesive manufactured by Loctite (application rate 20 g/m<sup>2</sup>). Scrim type '213A74D' may be fitted between 'K-Flex IN-CLAD' and 'K-Flex ST'
3. Smoke and toxicity criteria as required by IMO Fire Test Procedures Code, Annex 1 Part 2, have not been tested
4. Composition of individual components, including 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



Lloyd's  
Register

## Lloyd's Register EMEA

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Page	3 of 3
Document number	SAS F170170
Issue number	1

### DESIGN APPRAISAL DOCUMENT

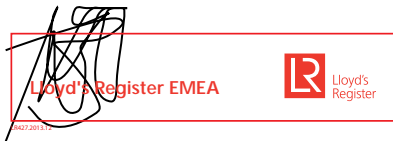
Date 31 July 2017	Quote this reference on all future communications SOUTSO/SFS/TA/JE/WP29305565
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##### PLACE OF PRODUCTION

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 Specialist  
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).*