

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Thermal and sound insulation material with low flame-spread characteristics**with type designation(s)
K-FLEX ECO

Issued to

L'Isolante K-Flex S.p.A.
RONCELLO, Italy

is found to comply with

DNV GL offshore standards**DNV GL rules for classification – Ships****DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations****Application :****Approved for use as insulation material of low flame-spread characteristics, not generating excessive quantities of smoke nor toxic products in fire.****The material is not defined as non-combustible.****This certificate is recognized by Transport Canada.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2018-08-29**for **DNV GL**This Certificate is valid until **2022-12-17**.DNV GL local station: **Milan**Approval Engineer: **Marius Mørner**

Mårten Schei-Nilsson
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.



Job Id: **262.1-012247-6**
Certificate No: **TAF000007R**
Revision No: **2**

Product description

"K-FLEX ECO"

composed of synthetic rubber foam of density $80 \pm 3 \text{ kg/m}^3$ and glued to minimum 0.75 mm thick metal.

Maximum thickness: 32 mm

The product is also manufactured at the following premises:

- K-Flex Polska Sp. z o.o., Wielenin-Kolonia 50B, 99-210 Uniejów, Poland
- K-Flex USA, LCC, 100 Nomaco Dr Youngsville, NC, USA

Application/Limitation

Approved for use as insulation material of low flame-spread characteristics, not generating excessive quantities of smoke nor toxic products in fire.

The combustible insulation with low-flame spread characteristics may be used in cargo spaces, mail rooms, baggage rooms and refrigerated compartments of service spaces as well as for cold service pipework/fittings for refrigeration systems (SOLAS II-2/5.3.1.1). Piping for hot and cold sanitary water is not regarded as "cold service pipe work/fittings".

Any adhesive used, other than the one used during testing, has to be tested for low flame spread characteristics according to IMO 2010 FTP Code part 5.

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

Each product is to be supplied with its manual for application, use and maintenance.

Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, October 2017.

Test report No. DC01/864F07 dated 06 November 2007 and No. DC01/1030F07 dated 13 December 2007 both from CSI, Bollate, Italy.

Test report No. 122664 dated 16 January 2002 and No. 158907 dated 9 November 2006, both from Warrington Fire Research Centre Ltd., UK.

Tests carried out

Tested according to IMO FTPC Parts 2 and 5 and in compliance with IMO 2010 FTP Code Ch. 8.

Marking of product

The product or packing is to be marked with name of manufacturer and type designation.

Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled "*Approval Procedures for, Life Saving Equipment and Structural Fire Protection Products (TP 14612)*", DNV GL confirms that the product listed in this certificate is in accordance with Transport Canada's requirements.

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in DNVGL-CP-0338 Section 4.