

Fire tests for surface flammability for linings, coatings and floor covers according to IMO-Regulations

International Maritime Organization (IMO) 2010 FTP Code Part 5

Any coating materials used on board ships, e.g. paintings, adhesives, laminates, carpeting etc. which are applied on bulkheads, linings, decks, ceilings and floors have to be tested for surface flammability. The test procedure for surface flammability and the classification of the tested material is conducted according to the „International Code for Application of Fire Test Procedures (FTPC)“:

- IMO 2010 FTP Code Part 5, IMO-Resolution MSC.307(88)

Test procedure

The materials to be tested are exposed to a specified irradiance level which is generated by a heat radiator.

During the test the time of ignition, the flame-spread characteristics, extinguishing of flames and the heat release are measured and recorded.

From these determined data the following measuring results are calculated:

Spread of Flame



CFE: Critical flux at extinguishment

Q_{sb} : Heat for sustained burning

Q_t : Total heat release

Q_p : Peak heat release rate

Surface flammability criteria for ...	CFE [kW/m ²]	Q_{sb} [MJ/m ²]	Q_t [MJ]	Q_p [kW]
Bulkhead, wall and ceiling linings	≥ 20,0	≥ 1,5	≤ 0,7	≤ 4,0
Primary deck coverings	≥ 7,0	≥ 0,25	≤ 2,0	≤ 10,0
Floor coverings	≥ 7,0	≥ 0,25	≤ 2,0	≤ 10,0

Classification

This test is used to determine if the tested coating material complies to the surface flammability criteria required for low-flame spread according to IMO 2010 FTPC part 5.

In addition these materials must not generate extraordinary quantities of smoke nor release toxic gases in event of a fire.

This has to be verified according to IMO 2010 FTPC Part 2.

Surface materials and primary deck coverings with a total heat release of maximum (Q_t) $\leq 0,2$ MJ and a maximum peak heat release rate of (Q_p) $\leq 1,0$ kW are excluded from this requirement

Sampling

Specimens must be representative for the product to be tested. For this reason sample material is taken from current manufacturing or from stock.

The sampling must be recorded in a sampling protocol to ensure the traceability of the sample material. The protocol must give information on name and function of sampler (QM), date, place and type of sampling etc.

Alternatively the sampling can be conducted by an expert of the Test Laboratory for Fire Protection of DMT GmbH & Co. KG.

Specimens

The specimens shall correspond to the future application aboard a ship. According to the IMO 2010 FTP Code a difference is made between use of coatings on non-combustible and non-metallic substrate and use of coatings on metallic substrate.

In general paintings and coatings are applied either on steel plates (e.g. 798 x 153 x 0,5 mm) or on non-combustible carrier plates (e.g. vermiculite) depending on the individual future application.

- 798 mm x 153 mm x overall thickness (≤ 50 mm)

Kindly agree upon the exact composition of the specimens required with your responsible classification society.

Required documents

The following documentation is required prior to the commencement of testing:

- Written order including invoice address
- Specimens
- Technical specifications data sheet (incl. bulk density, mass per unit area, material thickness, manufacturer, trade name etc.)
- Material safety data sheet
- Detailed description of product and composition of material
- Sampling protocol (except for exploratory testing) and coating protocol
- Delivery note incl. specification of type of testing and exact denotation of sample

Do you require further information?

Our team is eager to offer you advice and support. Contact us!

DMT GmbH & Co. KG

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