



Surface Flammability

IMO FTP Code Annex 1, Part 5 - Test for surface flammability

This information sheet describes the general principles of determining flame-spread characteristics and heat release values of materials which are intended for use as the surfaces of bulkheads, linings or ceilings; as floor coverings, or plastic pipes and cables.

Before the test

Although general rules have been adopted by IMO, the interpretation of these rules may differ between national authorities and classification societies. Therefore it is important to determine which type approvals are to be obtained and to consult the relevant bodies. DBI has extensive experience in co-operating with national authorities and classification societies and can offer guidance about what to do, so that the process of testing will follow the proper requirements

Information Sheets: 'SHIP WHEEL-MARKING AND TYPE APPROVAL OF MARINE PRODUCTS' and 'TESTING AND INSPECTION FOR USCG'

General

The flame-spread test is conducted in accordance with IMO Resolution A.653(16) (adopted on 19th October 1989).

The test equipment

The flame-spread apparatus consists of a natural gas-powered radiant panel in a vertical position, facing a specimen holder containing the test material, which is set at an angle of 15°.

This means that the surface of the material is exposed to an irradiance of 50.5 kW/m² at one end, down to 1.5 kW/m² at the other end.

A pilot flame placed in the "hot" end will ignite the product (if possible)

The heat release from the material is recorded in a fume-stack situated above the test specimen.

Verification of materials

The applicant shall provide a complete material specification to DBI before a test can commence.

Test specimens

The applicant shall provide DBI with at least 6 test specimens, each with the dimensions 795 x 153 mm and a maximum thickness of 50 mm.

If the test specimen represents an assembly, the material shall be attached to the substrate that will be used in practise. This includes insulation, airgaps etc.

Test procedure

Three to five specimens will be tested under each of the conditions described above.

The test proceeds until one of the following is applicable:

1. The specimen fails to ignite after a 10 min. exposure.
2. 3 min. has passed since all flaming from the specimen ceased.
3. Flaming reaches the end of the specimen.
(in that case the material will not pass the criteria of the classification)

Additionally, the behaviour of the flaming/material will be reported.

Test result

The result - the average of three tests - is compared to the criteria defined below:

Surface flammability criteria

Bulkhead, wall and ceiling linings				Floor Coverings			
CFE (kW/m ²)	Q _{sb} (MJ/m ²)	Q _t (MJ)	Q _p (kW)	CFE (kW/m ²)	Q _{sb} (MJ/m ²)	Q _t (MJ)	Q _p (kW)
≥ 20.0	≥ 1.5	≤ 0.7	≤ 4.0	≥ 7.0	≥ 0.25	≤ 2.0	≤ 10.0

CFE : Critical flux at extinguishment

Q_{sb} : Heat for sustained burning

Q_t : Total heat release

q_p : Peak heat release rate

Test report

The test report will be written in English. It will contain all necessary information about the test specimens, test results and classification.

For further information you are welcome to contact



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