

RESOLUTION MSC.90(71)  
(adopted on 21 May 1999)  
ADOPTION OF AMENDMENTS TO THE STANDARD FOR QUALIFYING  
MARINE MATERIALS FOR HIGH-SPEED CRAFT AS  
FIRE-RESTRICTING MATERIALS (RESOLUTION MSC.40(64))

**ANNEX 7**

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**ADOPTION OF AMENDMENTS TO THE STANDARD FOR QUALIFYING MARINE  
MATERIALS FOR HIGH-SPEED CRAFT AS FIRE-RESTRICTING  
MATERIALS (RESOLUTION MSC.40(64))**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO that paragraph 7.7.2 of the International Code of Safety for High-Speed Craft (HSC Code) requires the development of standards for fire-restricting materials,

TAKING INTO ACCOUNT the ISO standard 5660 entitled "Fire tests - Reaction to fire - Rate of heat release from building products",

RECOGNIZING that continued work on this subject is necessary with a view to developing corresponding criteria for classification based on the ISO standard 5660,

1. ADOPTS amendments to the Standard for qualifying marine materials for high-speed craft as fire-restricting materials (resolution MSC.40(64)), as set out in the Annex to the present resolution;
2. URGES Member Governments to ensure that, when applying resolution MSC.40(64) in compliance with paragraph 7.7.2 of the HSC Code, the Annex is also taken into account, as appropriate.

## ANNEX

### AMENDMENTS TO THE STANDARD FOR QUALIFYING MARINE MATERIALS FOR HIGH-SPEED CRAFT AS FIRE-RESTRICTING MATERIALS (RESOLUTION MSC.40(64))

- 1 *Existing paragraphs 1.3 and 1.4 are replaced by the following:*

“1.3 Surface materials on bulkheads, wall and ceiling linings, including their supporting structure should be tested to the standard ISO 9705 as described in section 2. Bulkhead, wall and ceiling linings should be tested in their end-use configuration, including any surface finish materials.

1.4 Materials used for furniture and other components should be tested to the standard ISO 5660 as described in section 2. (This does not include vertically supported textiles and films, upholstery, or bedding which should be tested in accordance with the Fire Test Procedures Code.)”

## 2 - TEST PROCEDURE

- 2 *Existing text of section 2 is replaced by the following:*

### **"2 Test procedure**

2.1 Tests for bulkhead, wall and ceiling linings should be performed according to the standard ISO 9705, the room/corner test. This standard gives alternatives for choice of ignition source and sample mounting technique. For the purpose of testing products to be qualified as “fire-restricting materials”, the following should apply:

- .1 ignition source: Standard ignition source according to annex A of the standard ISO 9705, i.e. 100 kW heat output for 10 min and thereafter 300 kW heat output for another 10 min. Total testing time should be 20 min; and
- .2 specimen mounting: Standard specimen configuration according to annex G of the standard ISO 9705, i.e. the product is mounted both on walls and ceiling of the test room. The product should be tested complying to end use conditions, including any surface finish materials or other surface treatments.

2.2 Tests for materials used for furniture and components other than room linings should be performed according to the standard ISO 5660, the Cone Calorimeter Test. For the purpose of testing products to be qualified as “fire-restricting materials”, the following test conditions should apply. Three test specimens should be prepared and tested in accordance with standard ISO 5660-1 (time to ignition and heat release) and the standard ISO 5660-2 (smoke production). The specimen should be representative of the end use conditions of the material, including any surface finishes. A sample edge frame should be used in all tests. Irradiance level should be set at 50 kW/m<sup>2</sup> for all three tests. The test should be terminated when 20 min have elapsed since the start of exposure. Data should be collected for an additional 2 min after the end of a test to ensure that data are available for the entire test duration after time-shifting to account for delay times of part of the instrumentation.”

#### **4 - CRITERIA FOR QUALIFYING PRODUCTS AS "FIRE-RESTRICTING MATERIALS"**

3 *Existing text of section 4 is replaced by the following:*

"4.1 Surface materials on bulkheads, wall and ceiling linings including their supporting structure are considered to be a "fire-restricting material" if during testing time of 20 min according to the standard ISO 9705 as qualified in paragraph 2.1, the following six criteria are met:

- .1 the time average of heat release rate (HRR) excluding the HRR from the ignition source does not exceed 100 kW;
- .2 the maximum HRR excluding the HRR from the ignition source does not exceed 500 kW averaged over any 30 s period of time during the test;
- .3 the time average of the smoke production rate does not exceed 1.4 m<sup>2</sup>/s;
- .4 the maximum value of the smoke production rate does not exceed 8.3 m<sup>2</sup>/s averaged over any period of 60 s during the test;
- .5 flame spread should not reach any further down the walls of the test room than 0.5 m from the floor excluding the area which is within 1.2 m from the corner where the ignition source is located; and
- .6 no flaming drops or debris of the test sample may reach the floor of the test room outside the area which is within 1.2 m from the corner where the ignition source is located.

4.2 Materials used for furniture and other components are considered to be "fire-restricting material" if during testing to the standard ISO 5660 as described in paragraph 2.2, the following four criteria are fulfilled:

- .1 the time to ignition ( $t_{ig}$ ) is greater than 20 s;
- .2 the maximum 30-second sliding average heat release rate ( $HRR_{30,max}$ ) does not exceed 60 kW/m<sup>2</sup>;
- .3 the total heat release (THR) does not exceed 20 MJ/m<sup>2</sup>;
- .4 the time average smoke production rate ( $SPR_{avg}$ ) does not exceed 0.005 m<sup>2</sup>/s.

4.3 Materials which qualify as "fire-restricting materials" using the standard ISO 9705 test method described in this annex may be used for furniture or other components if the material closely represents the configuration tested as a room lining in its actual end use (i.e. similar thickness and surface finish)."

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