



ISO 1182:2020 NON-COMBUSTIBILITY TEST

ROLE OF TEST IN THE EUROCLASS SYSTEM

Testing the non-combustibility behaviour of a material (substantial components of a product) is required for a classification A2 (or test results from EN ISO 1716), and for a classification A1 (in combination with test results from EN ISO 1716).

TEST PRINCIPLE

The testing is performed in an open, vertically positioned cylindrical furnace. The furnace is preheated to approximately 750 °C before the test specimen is introduced. The specimens are cylindrical with diameter 45 mm and height 50 mm.

During the test temperatures in the furnace, and optionally on the specimen surface and in the specimen centre are measured. The duration of sustained flaming is also observed.

The specimens are weighed before and after the test, and the weight loss is registered. 5 parallel tests are performed.

TEST REPORT

The report contains information about:

- The specimen weight loss [%]
- The occurrence of sustained flaming [s]
- Temperatures in the furnace and in the specimen before, during and at the end of the test.

CRITERIA FOR EVALUATION ACCORDING TO EN 13501-1

The criteria below apply for the averaged test results from the five parallel tests. A product needs to meet the following criteria for a classification A1.

1. The average furnace temperature increase should not exceed 30 °C.
2. The mean duration of sustained flaming should not occur.
3. The average mass loss should not exceed 50% of the average original mass after cooling.

For a classification A2, the following criteria need to be met:

1. The average furnace temperature increase should not exceed 50 °C.
2. The mean duration of sustained flaming should not exceed 20 seconds.
3. The average mass loss should not exceed 50% of the average original mass after cooling.

CLASSIFICATION CRITERIA ACCORDING TO IMO RESOLUTION 2010 PART 1

According to IMO Resolution 2010 Part 1, a material should be deemed non-combustible if all the following criteria are satisfied:

1. The average furnace thermocouple temperature rise as calculated in 8.1.2 of ISO 1182 does not exceed 30 °C.
2. The average surface thermocouple temperature rise as calculated in 8.1.2 of ISO 1182 does not exceed 30 °C.
3. The mean duration of sustained flaming as calculated in 8.2.2 of ISO 1182 does not exceed 10 seconds.
4. The average mass loss as calculated in 8.3 of ISO 1182 does not exceed 50 %.

TEST SPECIMENS

Rigid samples. A minimum of 8 cylindrical samples of Ø 45 x 50 mm (height) is required. The samples can be composed of multiple layers of homogeneous composition.

Mineral wool-like products. 4 pieces of the representative product with a thickness of 50 mm and l x w of minimum 300 x 300 mm and maximum 2000 x 2000 mm.

Cast products, like gypsum etc. Specimens can be prepared by pouring out the liquid substance into plastic tubes/pipes with an inner diameter of approximately 45 mm and a height of 50 mm. Before filling the tubes/pipes it is advised that the wall of the tubes/pipes have been sawn through over the height at one side and sealed with a tape at the outside over the saw-cut which enables the easy release of the cured specimens. 8 samples are required.

TESTING

Testing can be started when order is confirmed in writing, and the test specimens have been conditioned according to the standard. Normally it will take about 3-4 weeks from when we have received the test specimens until the test report is finished.

Main differences between the 2010 and 2020 standard:

- Extra thermocouple in the furnace with two temperatures an average temperature will be realized to minimize fluctuations.
- Demand for regular check of the specimen holder weight which resulted in a specimen holder weight of 15±2 grams.
- Different calculation of the max temperature in the furnace.