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## FIRE TESTS - REACTION TO FIRE. IGNITABILITY OF BUILDING PRODUCTS

### Description of the method ISO 5657-1986(E) (NT FIRE 033)

Test specimens 165 mm x 165 mm, 20 pcs. Specimens with a thickness over 70 mm are cut to 70 mm thickness. For the tests the specimens are placed on top of 6 mm thick silicate boards of the same size.

The samples are conditioned prior to the tests to constant mass in a room with a temperature of  $23 \pm 2$  °C and relative humidity  $50 \pm 5$  %RH.

Test procedure The test specimens are placed below a horizontal cone-shaped radiator. The time until the surface of the sample ignites is measured. Five tests are conducted at each irradiance level. In cases when ignition has not occurred in five tests made for higher radiation intensity, tests for lower radiation intensity are not needed. The test will be finished in 15 minutes, if no ignition occurs.

Requirements Requirements concerning the fire safety of surfaces with respect to ignitability are presented in regulations and guide given by the Ministry of the Environment and in Product Rules of the Nordic Committee on Building Regulations. The regulations are presented in clause 2.4 of the publication "National Building Code of Finland, Part E 1, Structural Fire Safety 1981". Clause 3.2 in the publication "Fire Safety Approval for Building Products, Guide 1/1991" (24.4.1991) by the Ministry of the Environment gives the acceptance criteria for ignitability classes 1 and 2. The Nordic Product Rules are presented in the publication "Product Rules for Fire Resistant Surface Finishes, January 1990".

A surface finish is classified as class 1, if it in tests meets the following requirements:

the ignition time as an average for the five tests is at least 1 minute, when the radiation intensity is  $40 \text{ kW/m}^2$ ,

the ignition time as an average for the five tests is at least 3 minutes, when the radiation intensity is  $30 \text{ kW/m}^2$ .

A surface finish is classified as class 2, if it in tests meets the following requirements:

the ignition time as an average for the five tests is at least 1 minute, when the radiation intensity is  $30 \text{ kW/m}^2$ ,

the ignition time as an average for the five tests is at least 3 minutes, when the radiation intensity is  $20 \text{ kW/m}^2$ .