Investigation of the ageing behaviour of building materials / building products in view of the European reaction to fire classification according to EN 13501-1 by means of SBI-test according to EN 13823

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Deutsches Institut für Bautechnik (DIBt), Berlin

The test-programme consists of:

- SBI-Tests (DIN EN 13823) and “Brandschacht” tests (DIN 4102-1, -15, -16) on four building materials which had been either subjected to weathering or currently been produced
- Analysis of the ageing / weathering effect on the reaction to fire behaviour

It has been known from long-time experience and, amongst others, in relation to cases of damage that ageing and weathering effects may cause negative changes in the reaction to fire behaviour of building materials. Therefore, to avoid possible safety risks, the reaction to fire behaviour of “schwerentflammbar” (limited flame spread) building materials must be retested according to German building regulation after two and five-year outside storage / weathering period, if “they could be subjected to outdoor weathering in end use condition” or “have been fire-retardant treated”.

These definitions complying with the current German safety requirements have not yet been considered within the new European fire classification system for building products („Euro-class–System“ according to DIN EN 13 501-1) as the latter one does not require any regulations for weathering. Thus, building products, such as plastic boards, facade tiles, coated materials, sealings, etc. having reaction to fire behaviour after outside weathering that might have been assessed as critical, would be allowed to be used in outside end use conditions without any weathering proof in terms of reaction to fire.

It shall be proved that the influence of (real condition) weathering ageing of building materials known from fire tests performed in the “Brandschacht” according to DIN 4102 can also be observed in the test for the new European „central test method“ SBI according to DIN EN 13823. This requires comparison tests to be performed on building materials which had been either exposed to outside weathering conditions in an exposition area for years or currently been produced using both, SBI- and Brandschacht-tests.
SBI-Fire test facility according to DIN EN 13823

„Brandschacht“ according to DIN 4102-15

Contact Person:
Dr. Stefan Lehner
Tel.: +49 (0)711/685-62713
Fax: +49 (0)711/685-66724
E-Mail: stefan.lehner@mpa.uni-stuttgart.de