

subject	Edge effect during fire test of loadbearing constructions
reference of original query	2014-03 N719 and figure in Annex to N719
related standard	EN 1365-1

Problem:

The fire exposure of a test specimen when testing fire resistance of building products may be different and lower near the edges. It is normal that surface boards are still on place around the edges of a test specimen but can be totally burnout and disappeared in the middle. Another problem is that the edge of the test specimen will only get maximum two side fire exposures. This is not representative for the normal use and the intention of the test method. The test shall show how a load bearing construction with unlimited width reacts during fire. This is especially problematic when testing structures with discrete load bearing elements such as walls with studs. If load bearing studs are placed along the edges these studs will carry more load since they are not affected by the heating in the same way as the studs in the central part of the specimen.

Solution proposed for vertical and horizontal testing:

To avoid this problem the test specimen should be designed as far as possible with no load bearing capacity or stiffeners closer than 200 mm from the edges of the test specimen. This will have the effect that all loadbearing studs will get the same fire exposure.

The edges of some test specimens may be fragile and it can be difficult to tight the free edge space between the test specimen and test frame. Important is that the edges of a test specimen are not loadbearing and have the possibility to bend freely.

