

Summary of Research Product properties

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Fire resistance of a steel glazed sliding door, type KONE SD(T) F30/F60, manufacturer KONE Deursystemen B.V.

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Een TNO bedrijf

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Upon request of KONE Deursystemen B.V., based in Veenendaal, The Netherlands, the fire resistance with regard to the separating function was determined of a steel glazed sliding door, type KONE SD(T) F30/F60. The experimental research was carried out according to the European standard NEN-EN 1634-1; the conclusion was drawn according to the Dutch standard NEN 6069:2001. Details and results of the research are given in TNO report 2003-CVB-R0230, dated September 2003. The results of the research also comply with the requirements of NEN 6069:2005.

The properties of the sliding door that was investigated are as follows:

- Dimensions aperture in the wall (width x height): 3076 x 2480 mm;
- Dimensions clear opening (width x height): 2042 x 2232 mm;
- Dimensions door leaves (width x height x thickness): 1016 x 2265 x 50 mm;
- Overlap in the labyrinths: 27 mm;
- Glazing: Contraflam Lite EW60;
- Supporting construction: 250 mm aerated concrete.

The main results of the fire test were:

- Integrity 93 minutes
- Thermal insulation in terms of heat radiation 101 minutes

After the fire test, several assessments have been performed, see the reports 2003-CVB-B1152 [Rev. 1], 2004-CVB-R0099, 2006-CVB-R0581 and 2006-Efectis-R0755.

Conclusion – 1

Subject to the following conditions, it is concluded that for the sliding door construction, type KONE SD(T) F30/F60, manufactured by KONE Deursystemen B.V.:

The fire resistance with respect to the separating function, in the sense of NEN 6069:2005, is at least 60 minutes.

Conditions and field of application

The conclusion is valid exclusively for sliding door constructions, which in all details, including all materials, are equivalent to the construction investigated as described in TNO report 2003-CVB-R0230, and subject to the following conditions:

- a) The dimensions of the door leaves as mentioned above may be increased by:
 - 15 % in the width and the height, and
 - 20 % in the area.
- b) The thickness of the door leaves may not be changed.
- c) The overlap in the labyrinths may not be decreased.
- d) The sliding door construction may be applied as a single telescope door (as tested), a double telescope door, a (normal) single sliding door and a (normal) double sliding door.
- e) For a single sliding door, a steel box profile 30 x 30 mm may be applied on the closing side.
- f) For a single sliding door, the width of the door leaf may be increased to a maximum of 1500 mm at a height of 2300 mm, or according to the requirements in Efectis letter 2006-Efectis-R0755.
- g) In the door leaf and/or side panels, an intermediate transom may be applied.
- h) The sliding door may be installed with the suspension/electric drive at the not-directly exposed side.
- i) The width of the fixed side panel may be reduced.
- j) The Promatect-H plate behind the suspension mechanism and used as a filling material in the transom panel may be replaced with Rhinoflam of the same thickness.
- k) As guide at the bottom of the door leaf, an omega profile may be applied.
- l) Swissflam Lite EW60 may also be applied as glazing.
- m) The wall to which the sliding door is fixed may be constructed from aerated concrete or an equivalent material; the fixings should be as described in TNO letter 2003-CVB-B1152 [rev. 1]. This version may also be applied as an outside door.
- n) The type, dimensions and positions of the intumescent material may not be changed.
- o) The construction is mounted in a wall of stone-like material with a thickness and density of at least 250 mm and 600 kg/m³, respectively.

Conclusion – 2

Subject to the conditions as mentioned above – and the additional condition that glass of type SGG Contraflam Lite EW30 is applied – it is concluded that for the sliding door construction, type KONE SD(T) F30/F60:

The fire resistance with respect to the separating function, in the sense of NEN 6069:2005, is at least 30 minutes.

