



Assessment on the effect on fire resistance when changing a mounting ring of an electric socket

Requested by: ABB Oy

Requested by
ABB Oy
Petri Kotilainen
Wiring Accessories
Porvoon Sisäkehä 2
FI-06100 PORVOO
Finland

Order: Tiina Söderström 18 December 2017

Organization undertaking statement

VTT Expert Services Ltd
Fire Safety
P.O. BOX 1001 (Postal address: Kivimiehentie 4)
FIN-02044 VTT, Finland
Tel. +358 20 722 111
Email forename.surname@vtt.fi

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Task
The client asks a statement on fire resistance of an electric socket after a mounting ring has been changed as presented in Annex 1. Fire resistance requirement is EI 30.

Background
The statement is based on the following documents:

1. VTT-S-03946-12, Fire resistance test on electrical boxes installed on gypsum wall construction, VTT Expert Services Ltd, 7 November 2012.
2. VTT-S-03182-12, Fire resistance test on electrical boxes installed on gypsum wall construction, VTT Expert Services Ltd, 5 November 2012.

Test report 1: Test results of fire resistance test on electric boxes mounted in an insulated non-loadbearing wall construction with steel studs are presented. The wall construction comprised of a single layer of A-type gypsum boards on both sides of the steel studs and it was insulated with stone wool (measured density 30 kg/m³). Insulation was fixed to the steel frames with screws c/c 400 mm. The electrical boxes were mounted symmetrically on both sides of the wall with hot setting adhesive c/c 200 mm from each other and plastic pipes (Ø20, length 300 mm) were mounted on the boxes.

Test was performed on 15 May 2012 according to standard *EN 1366-3:2009, "Fire resistance tests for service installations - Part 3: Penetration seals"*. The test specimen (AU5.5) fulfilled fire resistance requirements for integrity (E) 39 min and insulation (I) 30 min. Test time was 39 min 30 s.

Test report 2: Test results of fire resistance test on electric boxes mounted in an insulated non-loadbearing wall construction with steel studs are presented. The

wall construction comprised of a double layer of A-type gypsum boards on both sides of the steel studs and it was insulated with stone wool (measured density 30 kg/m³). Insulation was fixed to the steel frames with screws c/c 400 mm. The electrical boxes were mounted symmetrically on both sides of the wall with hot setting adhesive c/c 200 mm from each other and plastic pipes (Ø20, length 300 mm) were mounted on the boxes.

Test was performed on 5 April 2012 according to standard *EN 1366-3:2009, "Fire resistance tests for service installations - Part 3: Penetration seals"*. The test specimen (AU5.5) fulfilled fire resistance requirements for integrity (E) 54 min and insulation (I) 50 min. Test time was 72 min 20 s.

Analysis

The fire resistance of the new electric box (AU5.5 → AU5.6) corresponds to fire resistance of EI 30 when no other alterations are made.

The changes in the diameters and materials of the new mounting ring as shown in Appendix 1 can be neglected when comparing the rings overall effect on fire resistance.

Statement

The electric box AU5.6 is assessed to fullfill the requirements of fire resistance class EI 30 from both sides when in the installed accordingly and in the tested supporting construction. Joints of the board layers shall be staggered. Structures of the old and new electric boxes and their mounting rings are presented in Annex 1.

This statement shall be read together with test reports /1/ - /2/.

This statement does not represent type approval or certification of the product but it is an assessment on the fire resistance of presented electric box.

The validity period of the statement is five years.

Espoo, 7 February 2018



Kai Renholm
Business Manager



Tuuli Oksanen
Leading Expert

APPENDICES

Appendix 1

Drawings of the electric boxes

DISTRIBUTION

Client

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