

ASSESSMENT REPORT

Title: Assessment of a loaded timber floor incorporating downlighter luminaires protected with 'Astro Downlighter Covers'.

Client: Astroflame (Fireseals) Ltd.,
Unit 1,
Bridge Farm Industries,
Curbridge,
Southampton,
SO30 2HB.

Date: 7 March 2001

1. Introduction

A fire resistance test was carried out at the LPC on a loaded (nominally 1.5kN/m²) timber joist floor protected by one layer of 15mm-thick Lafarge Mega-Deco Type 5 Wallboard plasterboard and incorporating six protected downlighter luminaires. This report describes the assessment, which has been carried out of the fire resistance of a loaded timber floor incorporating six downlighter luminaires protected using 'Astro Downlighter Covers'.

2. Scope

This assessment report covers the fire resistance of a loaded timber floor incorporating six downlighter luminaires protected using 'Astro Downlighter Covers', for up to 60 minutes in terms of the loadbearing capacity, integrity and insulation criteria of BS EN 1365-2:2000, when exposed to fire from underneath.

3. Supporting data

A floor, 4160mm x 3500mm, was subjected to a fire resistance test in accordance with BS EN 1365-2:2000, for a duration of 60minutes on 18 April 2000, whilst supporting an imposed load of 1.5kN/m².

The loaded floor system comprised a timber framework of 225mm x 45mm x 4600mm-long timber joists at 600mm-centres and connected together with nominal 50mm x 50mm timber noggings at 1200mm-centres. A layer of 15mm-thick Lafarge Mega-Deco plasterboard was fixed to the underside of the timber joists and noggings, using 63mm-long self-drilling Drywall screws at 230mm-centres. During the application of the 'Mega-Deco', intumescent downlighter covers were installed in the floor void, then six apertures, from 60mm to 145mm diameter, were cut in the plasterboard and the intumescent covers clipped in position. Downlighter luminaires were then clipped into place in the plasterboard apertures.

Three types of downlighter luminaires were supplied, two of each type were fitted in the floor, details of which follow:

- a) Searchlight electric Ltd. 'Halogen recessed ring' ref. 27030SI, fitted into a 60mm-diameter aperture cut in the plasterboard;
- b) Searchlight electric Ltd. 'Halogen recessed eyeball' ref. 27025, fitted into a 80mm-diameter aperture cut in the plasterboard;
- c) Searchlight electric Ltd. 'Eyeball downlighter' ref. 53600, fitted into a 145mm-diameter aperture cut in the plasterboard.

An intumescent downlighter cover was fitted to the topside of each luminaire in the floor/ceiling void. The intumescent downlighter covers, comprised conical shaped covers which were placed over the light fittings in the floor void. The covers were described as being manufactured from mineral fibre with intercalated graphite intumescent and organic binders. The covers were supplied in three sizes, nominal dimensions 150mm outside diameter at base x 150mm high x 8mm-thick, 200mm OD at base x 200mm high x 8mm-thick and 250mm OD at base x 250mm high x 8mm-thick, and each had eight ventilation apertures, nominally 20mm x 10mm, evenly distributed in their walls. Each cover had a wire attachment used to fasten the conical case to the plasterboard.

The upper side of the timber framework was covered with 22mm-thick chipboard fixed in position using 44mm-long self-drilling screws at nominal 300mm-centres. The floor system was mounted to allow freedom for longitudinal movement and deflection. The loaded floor

system satisfied the loadbearing capacity, integrity and insulation criteria of the standard for 60 minutes. For further details of the test, see LPC test report TE 94667.

4. Description of proposals

The proposed system is a loaded (maximum 1.5kN/m²) timber floor protected using 15mm-thick Lafarge Mega-Deco plasterboard fixed to the underside of the timber joists and noggings and incorporating six downlighter luminaires protected using 'Astro Downlighter Covers'.

5. Assessment

The proposed system is identical in design and components to the system tested at the LPC and described in test report TE 94667. Therefore, the proposed system should give an equivalent level of fire resistance performance.

6. Conclusions

Therefore it is our opinion that a floor supporting a 1.5kN/m² imposed load and comprising timber joists, chipboard flooring 22mm-thick floorboards and Lafarge 15mm-thick 'Mega-Deco' Type 5 plasterboard, and incorporating six downlighter luminaires protected by 'Astro Downlighter Covers', as described in this report, is suitable where a fire resistance of up to 60 minutes is specified in accordance with the loadbearing capacity, integrity and insulation criteria of BS EN 1365-2:2000, when exposed to fire from underneath.

7. Validity

7.1 Declaration by applicant

- We the undersigned confirm that we have read and complied with the obligations placed on us by the UK Fire Test Study Group Resolution No. 64A: 1993.
- We confirm that the component or element of structure, which is the subject of this assessment, has not to our knowledge been subjected to a fire test to the Standard against which this assessment is being made.
- We agree to withdraw this assessment from circulation should the component or element of structure be the subject of a fire test to the Standard against which this assessment is being made.
- We are not aware of any information that could adversely affect the conclusions of this assessment.
- If we subsequently become aware of any such information we agree to cease using the assessment and ask BRE to withdraw the assessment.

Signed:

For and on behalf of: ... ASTROKAME FIREPROTECT (UK) LTD

7.2 BRE Signatories

This assessment is based on test data, experience and the information supplied. If contradictory evidence becomes available to the BRE the assessment will be unconditionally withdrawn and the applicant will be notified in writing. Similarly, the assessment is invalidated

This report may only be distributed in its entirety and in accordance with the terms and conditions of the contract. Test results relate only to the items tested. BRE has no responsibility for the design, materials, workmanship or performance of the product or items tested. This report does not constitute an approval, certification or endorsement of the product tested.

if the assessed construction is subsequently tested since actual test data is deemed to take precedence over an expressed opinion. The assessment is valid for a period of two years after which it should be returned for review to consider any additional data which has become available or any changes in the fire test procedures. Any changes in the specification of the product will invalidate this assessment.

This assessment has been carried out in accordance with Fire Test Study Group Resolution No. 64A. It relates to the fire performance of the product and does not cover aspects of quality, durability, maintenance nor service requirements. This assessment relates only to the specimen(s) assessed and does not by itself infer that the product is approved under any Loss Prevention Certification Board approval or certification scheme or any other endorsements, approval or certification scheme.

Review date: 7 March 2003

Assessment by:

Signature



Name

W.S. Millar

Position

Consultant

Checked by:

Signature



Name

R.H. Earle

Position

Section Manager,
Building Products Assessments

Approved by:

Signature



Name

R.A. Jones

Position

Centre Head

This assessment report is not valid unless it incorporates the declaration duly signed by the applicant.