# SUSPENSION CABLE CERTIFICATE

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# 1. INTRODUCTIONS

Three Zip-Clip suspension systems were supplied for test, only one of which is subject to this report. The suspension system was supplied by the client and delivered during August 2012. Chiltern International Fire Limited (CIFL) constructed a lightweight aerated autoclaved reinforced concrete supporting construction and suspended the specimen from the underside of the supporting construction.
The Zip Clip was tested under load. The load consisted of suspended cast iron plates, measured before the test on a UKAS accredited calibrated balance. Details of the load can be found in 5. Loading conditions table 1 on page 4.

# 2. SPECIFICATIONS

The Zip-Clip subject to this report has a client product reference PLEK/S. The suspension system comprised of two components; the wire rope with a proprietary loop at one end, and the Zip-Clip cable connector. A photograph of the Zip-Clip type tested is shown below.

***Zip-Clip with the wire rope engaged (product reference PLEK/S)**

# 3. SUPPORTING SYSTEM SPECIFICATION

The Zip-Clip comprised of a die cast zinc housing, with 2 entrance and 2 exit holes which allow the passage of the wire rope through the body of the housing. Within the body of the housing are two sets of spring loaded locking wedges (made from hardened sintered steel), one set for each wire rope channel, each fitted with a steel peg to release the wire rope. The Zip-Clip measured 26.5mm high x 12mm deep x 18mm wide (overall).

# 4. INSTALLATION SPECIFICATION

The free end of the wire rope was passed through the large opening at the top of the Zip-Clip in the direction indicated by an arrow on the body of the Zip-Clip, through the weight, and back up through the large opening at the bottom of the Zip-Clip in the direction indicated, to form a loop nominally 200mm 350mm long. The free end of the wire rope protruded 45mm from the top of the Zip-Clip. The specimen was fitted so that the Zip-Clip was fitted nominally 150-200mm from the underside of the ceiling.

# 5. LOADING CONDITIONS

Table 1 provides the loading value for the specimen. The load was comprised of cast iron plates suspended from the bottom loop of the wire rope beneath the Zip-Clip.

**TABLE 1**

| | |
|---|---|
| Wire rope diameter | Ø2mm ± 10% |
| Wire rope safe working load (SWL) rating | 50kg |
| Suspended weight | 35.1kg |

# 6. TEST CONDITIONS

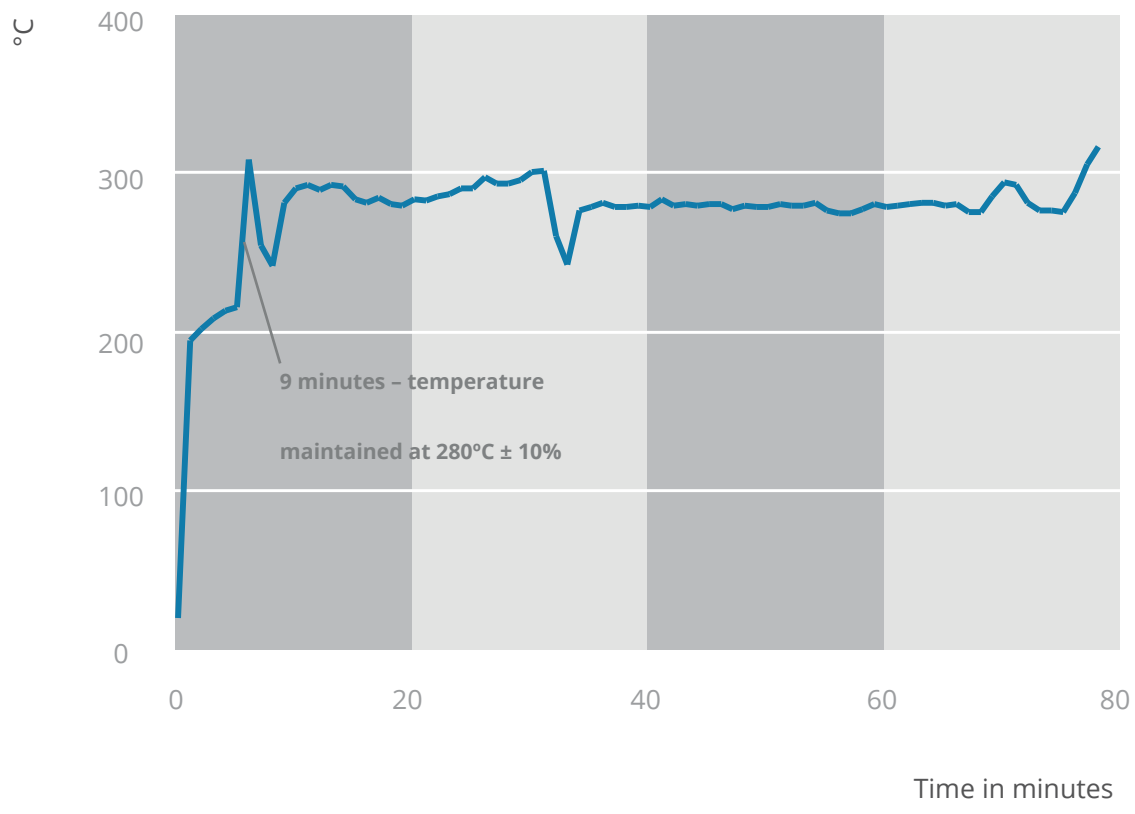
The **furnace temperature** was controlled and maintained by an average of seven thermocouples suitably distributed within the furnace (see figure 3 of Appendix). The thermocouples were fitted nominally 150-200mm from the ceiling. The thermocouples consisted of Ø1.5mm Type K Inconel sheathed assemblies.

# 7. TEST PROCEDURE

The ambient temperature at the start of the test was 19ºC. The furnace temperature was brought up to 280ºC ± 10% at the area of the specimens and maintained at this temperature for 60 minutes. The objective of the test was for the Zip-Clip to suspend the determined load for a minimum of 60 minutes at 280ºC ± 10%. The temperatures recorded are shown graphically below.

**OBSERVATIONS**

| TIME IN MINUTES | COMMENTS |
|---|---|
| 00.00 | Test started |
| 09.00 | Furnace temperature maintained at 280ºC |
| 69.00 | The Zip-Clip has held the load in place for 60 minutes |
| 72.28 | The 35.1kg weight has fallen down after 63 minutes at 280ºC ± 10%. The cable return has pulled back through the Zip-Clip |
| 78.00 | Test terminated |



# 8. TEST RESULTS

The load bearing capacity of the test specimen was maintained for the following period in table 2.

**TABLE 2**

| Load in kg suspended by the Zip-Clip | Load bearing time at 280°C |
|---|---|
| 35.1 | 63 minutes |

The results only relate to the behaviour of the element of construction under the particular conditions of test; they are not intended to be the sole criteria for assessing the potential fire performance of the element in use nor do they reflect the actual behaviour in fires.

This report covers a test which was conducted in accordance with the conditions as specified by the client. Since fire tests are the subject of a continuing standardisation process, and because existing standards are the subject of review and possible amendment and new interpretations, it is recommended that the report be referred back to the test laboratory after a period of five years to ensure that the methodology adopted and the results obtained remain valid in the light of the situation prevailing at that time.

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24-08-2018