

**RESISTANCE TO FIRE  
CLASSIFICATION REPORT No EU-24-000066**

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**CLASSIFICATION OF FIRE RESISTANCE  
IN ACCORDANCE WITH BS EN 13501-2:2023**

**Sponsor:** HEMSEC  
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**Product name:** Hemsec Residential SIPs Panel Loadbearing Wall (60)  
Total Load applied: 40kN

**Classification report No.:** EU-24-000066

**Issue number:** 1

**Date of issue:** 20<sup>th</sup> June 2024

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## 1. DOCUMENT TRACKING

| Revision Index. | Modification      |
|-----------------|-------------------|
| 0               | Original document |

## 2. INTRODUCTION

This classification report defines the resistance to fire classification assigned to Hemsec Residential SIPs Panel Loadbearing Wall (60) in accordance with the procedures given in BS EN 13501-2:2023.

## 3. DETAILED OF CLASSIFIED PRODUCT

### 3.1. GENERAL

The element, Hemsec Residential SIPs Panel Loadbearing Wall (60), is defined as a symmetrical, load bearing partition wall.

### 3.2. DESCRIPTION

The product, Hemsec Residential SIPs Panel Loadbearing Wall (60), is described below or in the reports provided in support of the classification listed in section 4.1.

- Hemsec Residential SIPs Panel (HEMSEC) with a thickness of 142 mm, consisting of a perimeter frame (C16 grade softwood), a core (rigid urethane foam), facings (OSB), and splines (OSB).
- Battens, referenced as C16 softwood grade battens with dimensions 38 x 25 mm, are fixed to the exposed face of the SIP panel.
- Plasterboard, referenced as Knauf Fire Panel (KNAUF) with dimensions 1200 x 2400 x 15 mm (L x W x th), is through-fixed to the battens.

The wall has overall nominal dimensions of 3000 mm high by 3000 mm wide with a thickness of 182 mm.

#### 3.2.1. Hemsec Residential SIPs Panel

The Hemsec Residential SIPs Panel (HEMSEC) with a thickness of 142 mm is made of:

- Perimeter Frame: The perimeter frame measures 108 x 50 mm and is made of C16 grade softwood with a stated density of 500 kg/m<sup>3</sup>.
- Internal Insulation Core: The core is a rigid urethane insulation, 108 mm thick, with a stated density of 32 kg/m<sup>3</sup>. This insulation is fitted between the perimeter framework and is held in place by the facing boards on each face.
- Face Panel: One layer of OSB facing, Smartply Max (SMARTPLY), is fitted to both sides of the Hemsec Residential SIPs Panel. Each layer is 15 mm thick with a declared density of 630 kg/m<sup>3</sup>. The OSB boards are nailed to the perimeter framework and splines behind, with vertical joints butting.
- Splines: The OSB spline is 15 mm thick and measures 100 x 2900 mm (width x length). Splines are fitted behind the vertical joints, supporting the butt joints of the facing boards. Additionally, two layers of timber spline with dimensions of 108 x 50 mm, C16 grade softwood, are used.

#### 3.2.2. Facings

The exposed side of the sample consists of a layer of gypsum-based board, referenced as Knauf Fire Panel (KNAUF), measuring 1200 x 2400 mm (w x h) with a thickness of 15 mm, installed over a layer of treated softwood battens measuring 25 x 38 mm.

The vertical timber battens are butted to head and bottom rails made of the same material. The timber battens are fixed to the rails using circular screw shank coil nails (PASLODE), 3.1 x 90 mm (Ø x L), with three nails per joint.

The battens are attached to the Hemsec Residential SIPs Panel (perimeter framework and facing panels) using circular screw shank coil nails (PASLODE), 3.1 x 90 mm (Ø x L), spaced at 200 mm intervals.

The Knauf Fire Panel board is fixed to the timber battens using drywall screws, referenced as 00032PSDD (TIMCO), 3.5 x 32 mm (Ø x L), spaced at 200 mm intervals along the vertical battens and horizontal rails. Continuous vertical joints are provided at approximately 1200 mm and 2400 mm from the right-hand side as viewed from the unexposed face, and a continuous horizontal joint is provided approximately 2400 mm from the top of the wall.

3.2.2.1. Plasterboard Finishing

The joints of all outer boards are taped and filled on their outer face using Gyproc FibaTape® Xtreme (BRITISH GYPSUM) Tape and Jointing & Filling Compound (NO NOSENSE), respectively.

3.2.3. Supporting construction

The wall is installed in a rigid supporting construction with a thickness of 320 mm.

**4. REPORTS AND RESULTS IN SUPPORT OF THIS CLASSIFICATION**

**4.1. REPORTS**

| Name of Laboratory | Name of sponsor | Report ref. no  | Test standard and date / field of extended application standards and date |
|--------------------|-----------------|-----------------|---|
| Efectis UK/Ireland | HEMSEC          | EUI-24-B-000066 | BS EN 1365-1 :2012  |

**4.2. RESULTS**

| Test method, test number and date                     | Subject of the report   | No. Tests | Parameter(s)   | Results   |
|---|---|-----------|--|---|
| BS EN 1365-1:2012<br>EUI-24-B-000066<br>10 April 2024 | A loadbearing wall with Hemsec Residential SIPs Panel.<br>Dimensions of the Plasterboard: 1200 x 2400 x 15mm (Knauf Fire Panel) | 1         | Integrity<br>- cotton pad<br>- gap gauges<br>- sustained flaming<br><br>Insulation<br><br>Loadbearing capacity | 66 minutes*<br>66 minutes*<br>66 minutes*<br><br>66 minutes*<br><br>66 minutes* |

\*No failure; test was discontinued after a period of 66 minutes.

**5. CLASSIFICATION AND FIELD OF APPLICATION**

**5.1. REFERENCE OF CLASSIFICATION**

This classification has been carried out in accordance with clause 7 of BS EN 13501-2:2023.

**5.2. CLASSIFICATION**

The element, Hemsec Residential SIPs Panel Loadbearing Wall (60), is classified according to the following combination of performance parameters and classes as appropriate:

|   |   |   |   |  |    |   |   |   |   |   |   |         |    |    |   |
|---|---|---|---|--|----|---|---|---|---|---|---|---------|----|----|---|
| R | E | I | W |  | t  | t | - | M | S | - | C | IncSlow | sn | ef | r |
| R | E | I |   |  | 60 |   |   |   |   |   |   |         |    |    |   |

|   |               |
|---|---------------|
| <b>FIRE RESISTANCE<br/>CLASSIFICATION</b> | <b>REI 60</b> |
|---|---------------|

### 5.3. FIELD OF APPLICATION

The direct application field of the test results is limited to the determination of the permissible modifications of the test specimen following a successful fire resistance test. These modifications may be automatically introduced without the sponsor having to apply for any additional assessment, calculation, or agreement.

The results of the fire test are directly applicable to similar constructions where one or more of the changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability:

- a) decrease in height.
  - b) increase in the thickness of the wall.
  - c) increase in the thickness of component materials.
  - d) decrease in linear dimensions of boards or dimensions of panels of but not thickness.
  - e) decrease in stud spacing.
  - f) decrease in distance of fixing centres.
  - g) ~~increase in the number of horizontal joints when tested with one joint not more than  $500 \pm 150$  mm from the top edge.~~
  - h) decrease in the applied load.
- NOTE: For the reference test, the total load applied was 40kN, on a 3000 mm high sample.**
- i) increase in the width provided that the specimen was tested at full width or 3 m wide, whichever is the larger.

### 6. LIMITATIONS

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This classification document does not represent type approval or certification of the product.

#### SIGNED



Vivek SUNNY  
Project Leader

#### APPROVED



Maurice McKee  
Lab Manager

**END OF DOCUMENT**