

Fire Rated Composite Panel Systems



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With more than five decades of specialist experience, MTE has become recognised worldwide for protecting people and assets from fire, blast and radiant heat hazards across the oil & gas, nuclear, petrochemical and renewable energy sectors. Building on its origins supporting North Sea oil and gas developments, MTE has continually advanced its technical capability, applying this heritage of engineering excellence to modern high hazard environments.

Today, our Fire and Blast Solutions team brings together deep domain expertise and innovative engineering tools to support the safe integration of fire rated composite panel systems across a wide range of industries—including the growing Battery Energy Storage Systems (BESS) market. Our specialist knowledge enables us to provide trusted guidance, seamless system integration support, and performance driven engineering solutions tailored to the specific needs of each project.

System Configuration

The MTE A60–EI60 One-Hour Composite Panel System is constructed using 100mm thick composite panels, each comprising:

- 0.6 mm galvanized steel facing sheets laminated to both sides of the insulation core
- Facing sheets available in galvanized or PVC-coated finishes, with a range of standard colours

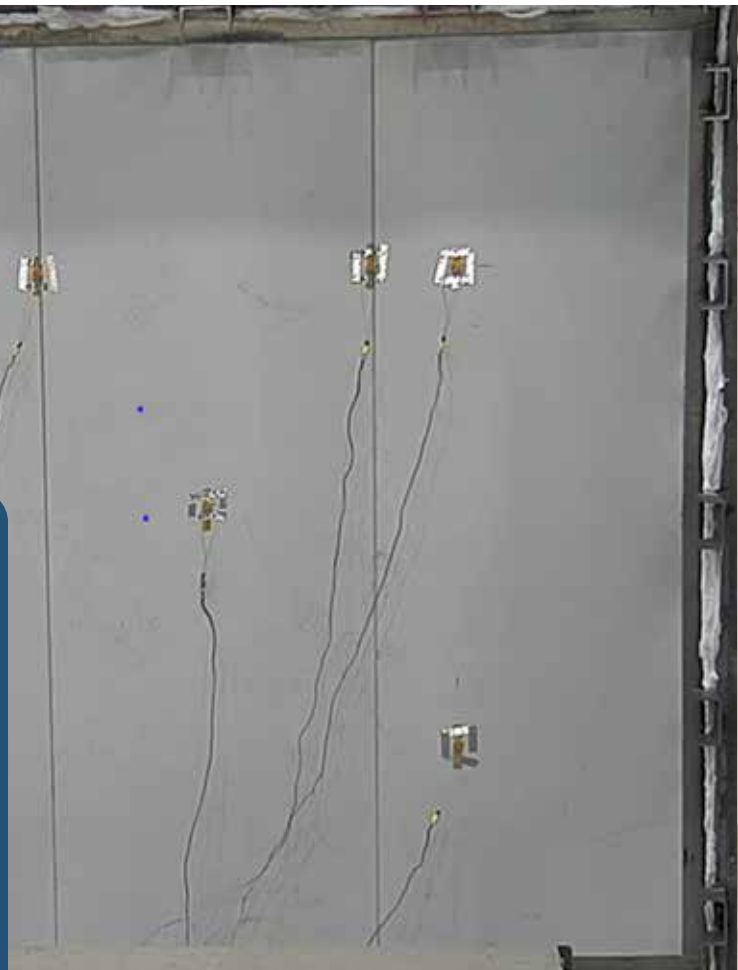
Key configuration features:

- Panel thickness can be increased to enhance thermal or acoustic performance without the need for additional secondary panel layers.
- Standard panel modules are 550 mm wide and capable of spanning up to 3 metres in height without supplementary support steelwork.

Full-Scale One-Hour Fire Test MTE Composite Panel System

The MTE One-Hour Fire Rated Composite Panel System has been engineered to provide a robust fire-rated dividing wall solution for both offshore and onshore building applications. Designed with flexibility in mind, the system can be configured to meet a wide range of fire, thermal, acoustic, and pressure requirements with only minimal changes to individual components.

This adaptability enables project teams to achieve high-performance specifications without complex detailing, resulting in a fast-track, cost-effective, and high-quality wall system suitable for even the most demanding conditions.



Typical Design Parameters

Ambient Design Conditions

MTE Composite Wall Panels are designed for the following environmental parameters:

- External temperature: -10°C to +25°C
- Internal temperature: +5°C to +30°C
- Wind loading (100-year, 3-second gust): 52 m/s
- Relative humidity: up to 95%
- All external wall panels are weathertight and achieve an IP56 rating.

Structural Performance

- Designed in accordance with project structural requirements and external loading basis.
- Panels withstand in service design loads with a maximum deflection of 1/180 of the span.

Air Ingress

- Air leakage rate at 50 Pa: < 500 l/m²/h

Thermal Performance

- Typical U value: 0.35 W/m²K

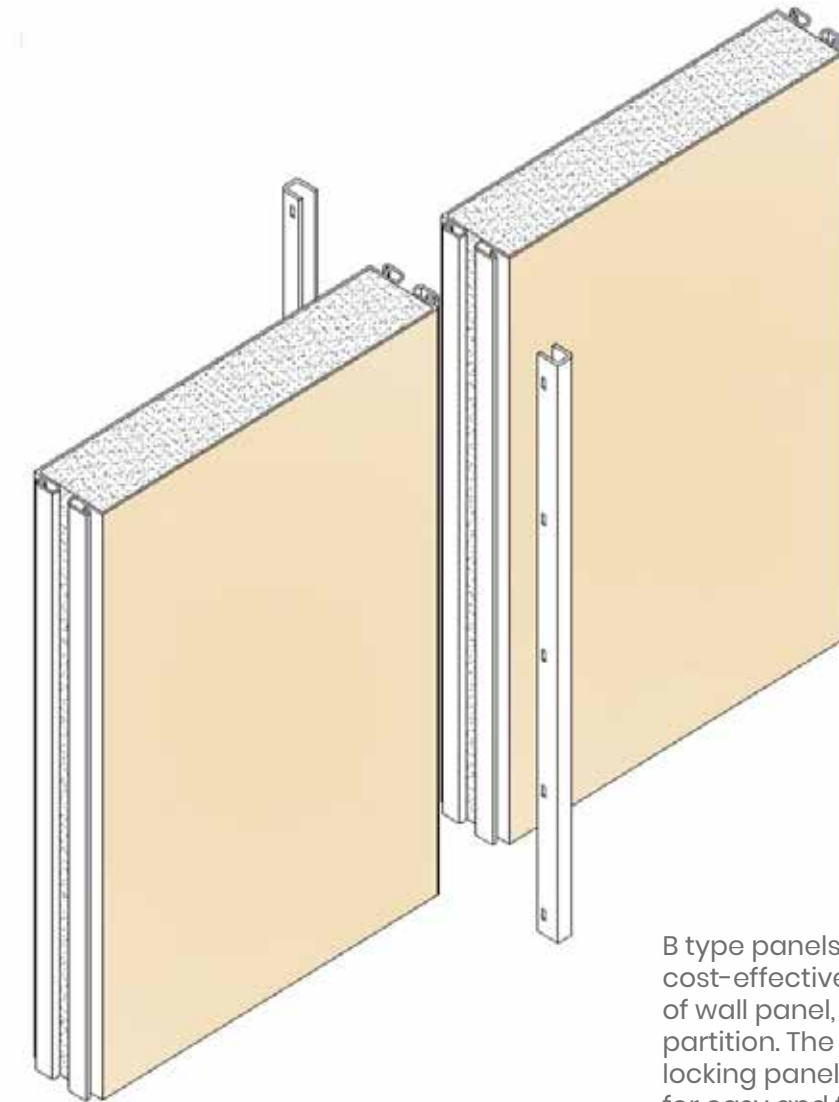
Fixings

- Panels are installed using fully mechanical fixings, eliminating any need for hot works.
- All fixing components are 316L stainless steel to ensure corrosion resistance and long term durability.

4. System Details

e. Panel Joint Connection

V. Typical Panel to Panel Fixing Detail



B type panels have a fast, easy and cost-effective method to lock in place of wall panel, acoustical panel, and partition. The “U” shaped clips wedge locking panels in place. It provides for easy and fast future removal for change of replacement panels.

Installation Method

1. Panels to be fixed to adjacent panel at joints using supplied clips as shown above.
2. Clips to be cut to length and tapped into place using a rubber mallet.
3. **Note:** Fire mastic sealant **NOT** to be used with this connection.



Panel to Deck Fixing Details

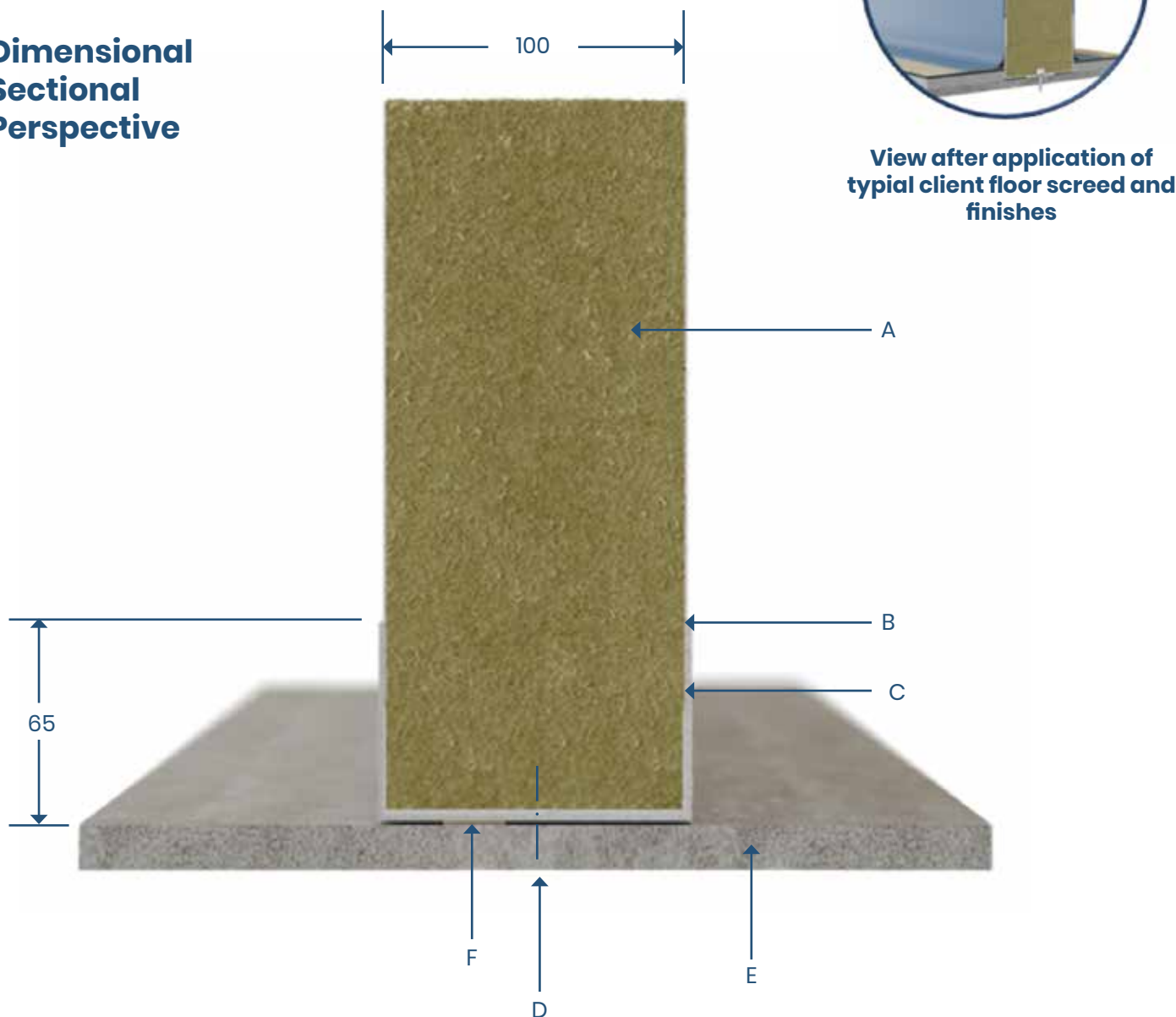
4. System Details

c. Typical Panel to Deck Junction

i. Dry/Dry Area

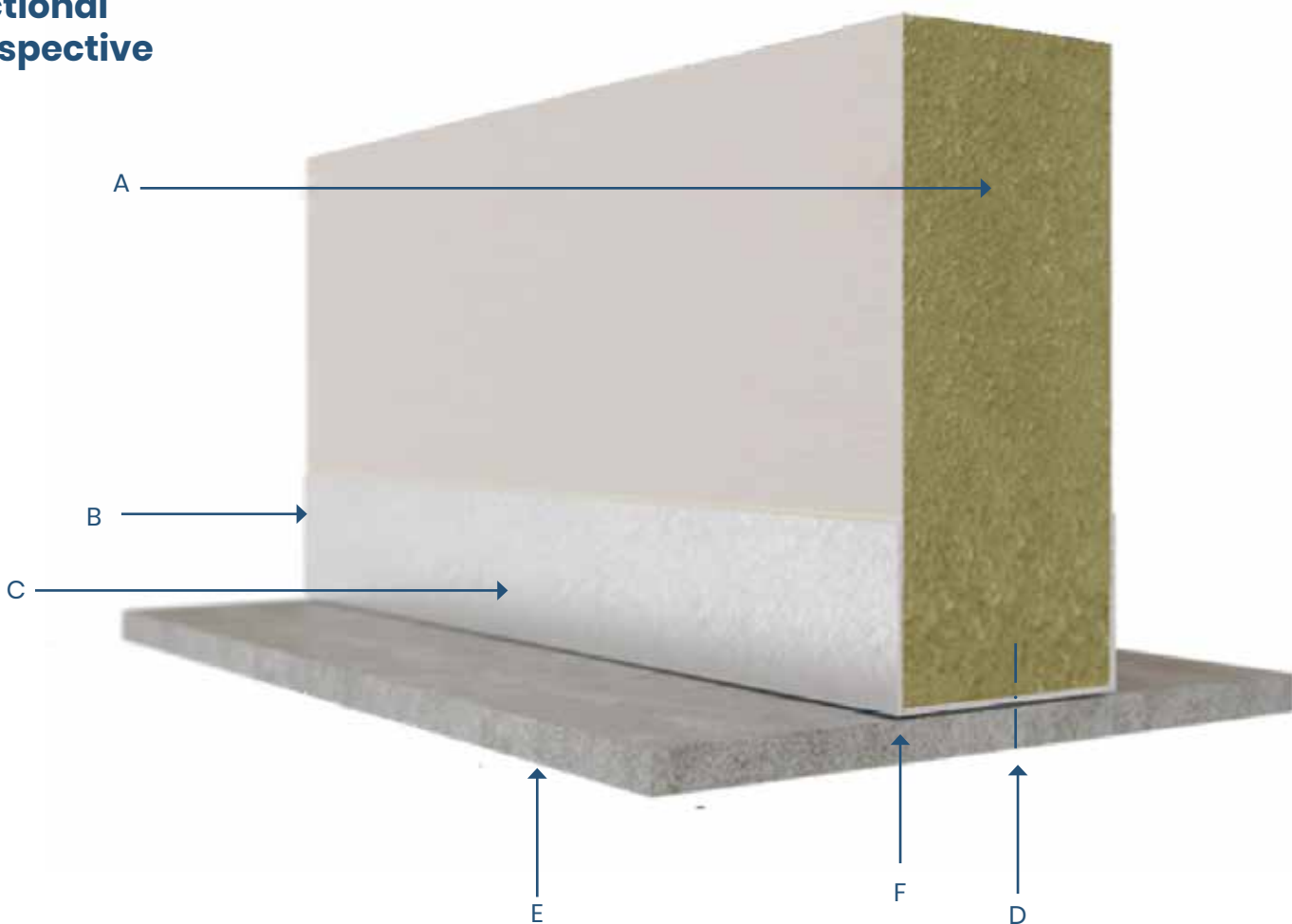
Fixed Channel on Deck

Dimensional Sectional Perspective



- A. 100 mm thick composite B-W100 wall panel, core insulation and 0.6 mm galvanised steel and PVDF coating each side.**
- B. FR mastic bead both sides of panel/channel.**
- C. 103w x 65h x 1.2 mm base channel in galvanised steel and PVDF coating each side.**
- D. Channel fixed to deck with Tek screw or Hilti or CD fixing at 300 mm C/C and 50 mm from start and finish.0**
- E. Steel doubler plate.**
- F. FR mastic continuous bead.**

Sectional Perspective

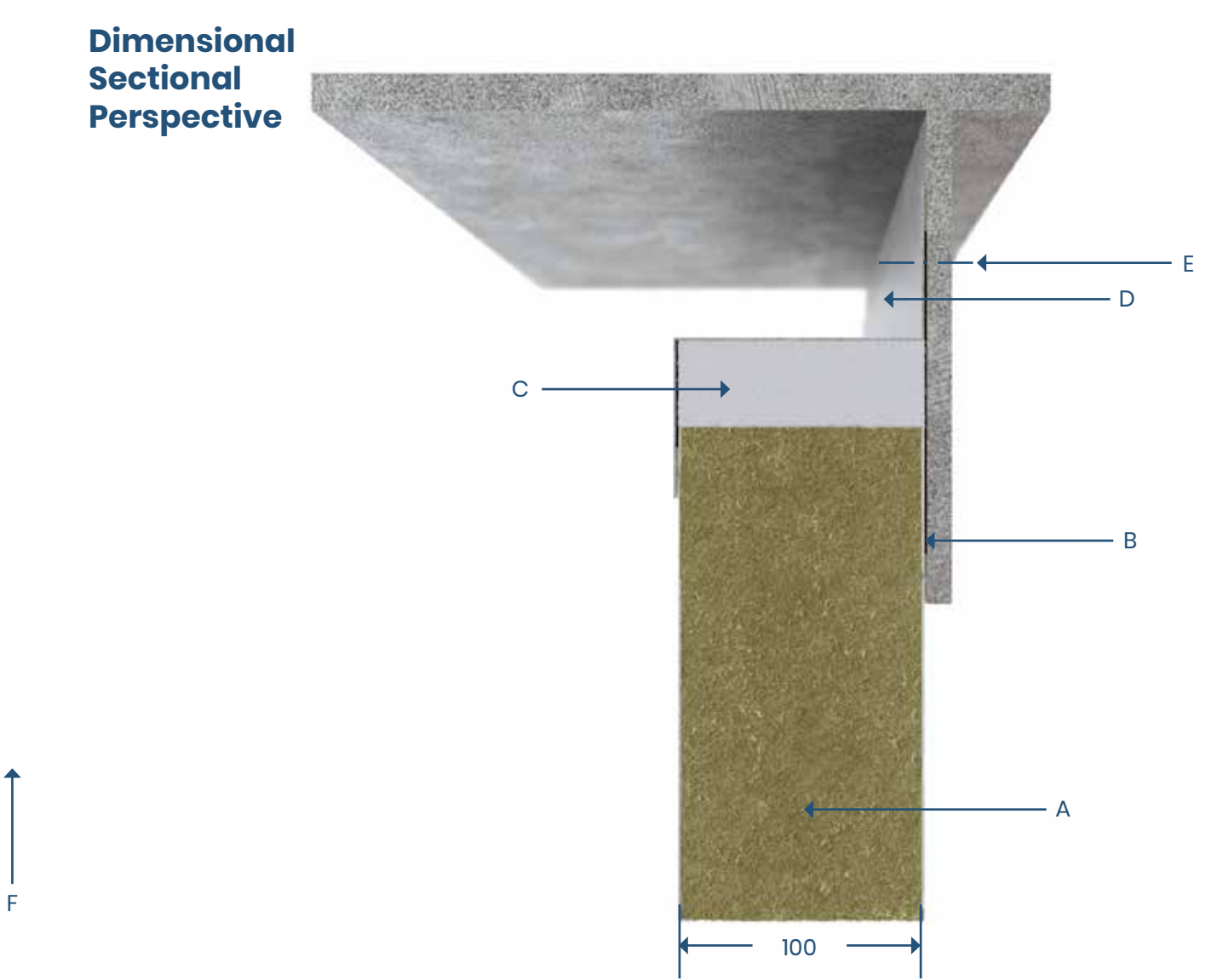


Installation Method

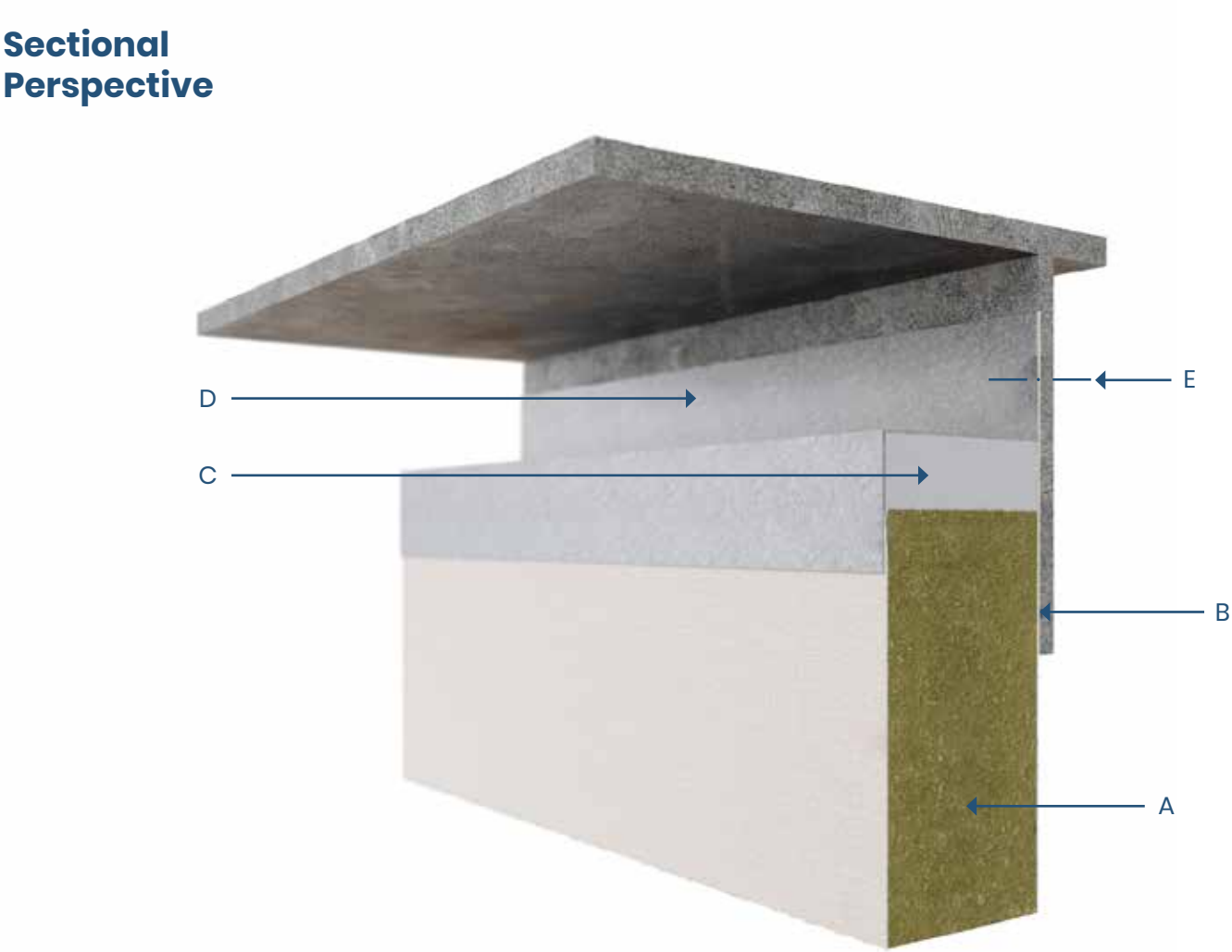
1. Mark channel location on deck.
2. Apply 1 x continuous line of fire mastic along deck as shown on sectional detail, lay channel in place and press down onto fire mastic sealant to create fire and watertight seal.
3. Fix channel to deck with Tek screw or Hilti or CD fixing at 300 m C/C and 50 mm from start and finish.
4. Install 100w x 100h mm timber battens into channel until insulation and channel are ready to be installed to avoid mechanical damage to the channel.
5. Apply 3 mm mastic bead on the inside of the channel each side as indicated on sectional detail.
6. Install wall panel into channel and side into vertical side channel to compress 50 mm Firemaster insulation batten to 35 mm and to hold into location.
7. Continue to install the remaining run of panels as above. 2 x joint clips to be installed to connect panel joints.
8. Floor screed, floor finish and perimeter skirtings to be installed (if required).

Panel to Deck Top Fixing Details

- 4. System Details
- d. Typical Panel Top Junctions
- II. Fixed Z-Section to Underdeck



- A. 100 mm thick composite A60 vB-W100 wall panel, core insulation and 0.6 mm galvanised steel and PVDF coating each side.**
- B. FR mastic bead both sides of panel/angle.**
- C. 50 mm Firemaster insulation compressed to 35 mm.**
- D. 75 x 102 x 30 mm 3 mm Thk Z-rail in galvanised steel PDVF coated (2400 mm length).**
- E. Angle fixed to deck with Tek screw or Hiliti or CD fixing at 300 mm C/C and 50 mm from start and finish.**



Installation Method

1. Apply 3 mm bead of fire mastic sealant to the length of the angle or deck head plate, install panel and press back to create fire and watertight seal.
2. Install firemaster insulation onto top of panel edge.
3. Apply 2 x continuous lines onf 3 mm fire mastic along wall panel and deck head plate as shown on sectional detail.
4. Install Z-section angle to wall panel and compress insulation to approximately 35 mm, and fix to deck head with Tek screw or Hilti or CD fixing at 300 mm C/C and 50 mm from start and finish.
5. Note: Z-section angles are typically supplied in 2.4 m lengths. Angles to be installed once 5No. 550 mm wide panels are installed.





The global leader in radiant heat shielding systems for over 50 years



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