

Siderise NXS Nexus Fusion

Rigid stone wool Lamella insulation for metal and glass faced spandrel and pre-cast concrete panels



Application

Siderise Nexus Fusion provides a cost-effective prefinished rigid insulation with fire, thermal and acoustic properties for use in curtain wall, bespoke glazing systems and pre-cast concrete cladding systems.

Product Description

Siderise Nexus Fusion boards are produced using stone wool slab material which has been specifically formulated to a Siderise specification for use in this exacting application.

The unique Nexus process takes this stone wool material which is then cut into strips and rotated through 90 degrees so the fibres are perpendicular to the board surface.

Additionally, the strips are subjected to lateral compression which eliminates any gaps and produces a more homogeneous board with a substantially better rigidity than a standard stone wool slab of the same density. Whilst under compression the product is faced with an open filament net to one face which both maintains the compression and aids handleability. The opposite face is aluminium foil.

The Fusion board should be bonded on the net face to the glazing system or mechanically fixed to pre-cast concrete panels.

Siderise RFT 120/45 foil tape should be applied over all board butt joints on the foil facer. In glazing systems, Siderise RFT120/45 should be applied to all exposed edges of Nexus Fusion, lapping onto the foil facing and onto the substrate the Nexus is adhering to by a minimum of 10mm.

Fire Performance

Reaction to Fire – Nexus Fusion is classified as A1 to EN 13501-1 in mechanically fixed applications. Please see Table 1 for further information.

For adhered applications, the reaction to fire performance for Nexus Fusion will be dependent on the type of adhesive chosen, the application weight of the adhesive and the reaction to fire of the substrate. Contact Technical Services for further information.

Table 1 : Reaction to Fire Performance

| Properties | Value |
|-----------------------|---|
| Classification Report | EUI-23-000506 |
| Classification | A1 to EN 13501-1 |
| Thickness Range | 25-175mm |
| Substrates | Mechanically fixed to gypsum or any other A1 or A2-s1,d0 substrate with a density of at least 525 kg/m ³ |
| Joints | Horizontal and Vertical with no gaps |
| Air Gap | No air gap between product and substrate, with net facer tight to substrate |

Acoustic Performance

Siderise Nexus Fusion boards can offer additional acoustic absorption when incorporated into a façade build up.

As with fire performance, the acoustic performance is system-specific and is heavily influenced both by the materials used in the façade and the way they are assembled. The acoustic performance of example thicknesses of Nexus Fusion are detailed in the table below. Table 2 confirms the laboratory tested values for Weighted Sound Reduction Index (dB Rw) in accordance with BS EN ISO 140-3: 1995.

Table 2: Nexus Acoustic Performance - Weighted Sound Reduction Index

| Product Type | Thickness (mm) | Rw (dB) |
|--------------|----------------|---------|
| Nexus Fusion | 75 | 21 |
| Nexus Fusion | 90 | 22 |
| Nexus Fusion | 120 | 25 |

Please note, Nexus Fusion is provided with net/foil facers, whereas the tested elements in Table 2 were tested with foil/foil facers.

Siderise Nexus Fusion has been used in many different systems over the past two decades. Please contact Siderise Technical Services department for guidance on the acoustic performance of Nexus Fusion.

The overall external noise break in performance of the façade system will be largely determined by the performance of the façade panel and the method of attachment. We suggest seeking the advice of an independent acoustic consultant when considering the overall performance of the façade.

Thermal Performance

For a given construction, the thermal resistance is determined by a combination of the grade of material and its thickness. The standard grade of Nexus Fusion has a nominal density of 77kg/m³ and a thermal conductivity of 0.038W/mK.

Please contact the Siderise Technical Services Team at technical.services@siderise.com for advice regarding the thermal characteristics of the bonded panel in conjunction with all interfacing and surrounding elements.

Table 3: Example U-Values

| U-Value of glazing alone (W/m ² K) | R Value of glazing (m ² KW) | Required U-Value improvement (W/m ² K) | Required Fusion thickness to achieve U Value (mm) | R Value of Fusion by thickness (m ² KW) |
|---|--|---|---|--|
| 2.7 | 0.370 | 0.35 | 93 | 2.45 |
| | | 0.30 | 112 | 2.95 |
| | | 0.25 | 135 | 3.55 |
| | | 0.20 | 172 | 4.53 |
| 2.0 | 0.500 | 0.35 | 88 | 2.32 |
| | | 0.30 | 108 | 2.84 |
| | | 0.25 | 132 | 3.47 |
| | | 0.20 | 168 | 4.42 |
| 1.5 | 0.666 | 0.35 | 82 | 2.16 |
| | | 0.30 | 100 | 2.63 |
| | | 0.25 | 125 | 3.29 |
| | | 0.20 | 165 | 4.34 |
| 1.2 | 0.833 | 0.35 | 78 | 2.05 |
| | | 0.30 | 95 | 2.50 |
| | | 0.25 | 118 | 3.63 |
| | | 0.20 | 155 | 4.08 |

Technical Specification

The standard grade of Siderise Nexus Fusion board manufactured has a nominal density of 77kg/m³. Other grades are available upon request as bespoke orders subject to individual pricing and lead time considerations. The grade of the board will depend on individual construction and/or performance requirements.

Please contact our customer service team at salesteam@siderise.com to discuss your requirements.

Table 4: Dimensional Properties

| Dimension | Dimensional Property |
|-----------|--|
| Width | 1200mm |
| Length | 1200mm (all thicknesses), 2400mm (thicknesses less than 100mm) |
| Thickness | Thickness between 25mm and 175mm in 1mm increments |

Environmental

Siderise is committed to the use of innovative materials and the development of products and technologies for a more sustainable future. We consider the environment in everything we do from the purchasing of our raw materials, the manufacturing processes we use to produce our products to their final end-use.

Stone wool core is recyclable.

Additional Information Available

The following information is available for download via the website:

- Standard Details
- NBS Specification Clauses
- Safety Data Sheet

Technical Support

For technical advice or support please contact: technical.services@siderise.com

For Installation Training or Site Inspections please contact: site.services@siderise.com

For technical advice or support in the Middle East, India or Asia Pacific contact: smetech@siderise.com

Context

The information in this datasheet is believed to be accurate at the date of publication. Siderise has a policy of continuous product improvement and reserves the right to alter or amend the specifications of products without prior notice. Siderise does not accept responsibility for the consequences of using the products described outside of

the recommendations within this datasheet. Expert advice should be sought where there is any doubt about the correct specification or installation of Siderise products.

SIDERISE GROUP Forge Industrial Estate, Maesteg, UK, CF34 0AH T: +44 (0)1656 730833 F: +44 (0)1656 812509 W:
www.siderise.com

NXS_2_03_20240910_1637