Rigid, Semi-rigid and Flexible Slabs

Versatile thermal and acoustic insulation slabs

Rockwool Rigid, Semi-rigid and Flexible Slabs are high quality resin bonded Rockwool Slabs that can be used for thermal, acoustic and fire insulation. They are manufactured in a variety of thicknesses and densities to suit most requirements. They are suitable for many applications including:

Thermal insulation for floors, walls, roofs and boiler rooms.
Ventilation plant in all types of buildings, offshore platforms and ships, acoustic ceilings and partition panels.

Advantages

• Excellent thermal, acoustic and fire insulation
• Water repellent
• Resists high temperatures
• Easy to handle and install
• Cost effective
• No maintenance
• Black and white tissue faced options

Large storage vessel insulated with Rockwool Rigid Slabs and overlaid with metal

Thermal and acoustic insulation using Rockwool Slabs in floors and partitions
Description, performance and properties

Standards

Rockwool Slabs conform to BS EN 13162: 2001. Thermal insulation products for buildings – factory made mineral wool (MW) products – specification, and satisfy the requirements of BS 5422 ‘Method for specifying thermal insulating materials for pipes, tanks, vessels ductwork and equipment...’

Description

Dimensions
Standard sizes: See table below
Thicknesses: 25*, 30, 40, 50, 60, 75 and 100 mm

Types and densities

<table>
<thead>
<tr>
<th>Type</th>
<th>Density (kg/m³)</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWA45</td>
<td>45</td>
<td>1000 x 600</td>
</tr>
<tr>
<td>RW3</td>
<td>60</td>
<td>1000 x 600</td>
</tr>
<tr>
<td>RW5</td>
<td>100</td>
<td>1000 x 600</td>
</tr>
<tr>
<td>RW6</td>
<td>120</td>
<td>1000 x 600</td>
</tr>
</tbody>
</table>

Other sizes and thicknesses are available to special order

*RW6 25 mm is a non-standard thickness for RW6

Finish
Non-woven mineral black or white tissue, aluminium foil and various other finishes are available.

Environment

No CFCs, HFCs or HCFCs are used in the manufacture of Rockwool materials.

Performance and properties

Resistance to compression

<table>
<thead>
<tr>
<th></th>
<th>Stress req’d to produce 10% compression (kN/m²)</th>
<th>Stress req’d to reach elastic limit 6% (kN/m²)</th>
<th>Displacement at 5 kN/m² stress (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWA45</td>
<td>3.0</td>
<td>3.5</td>
<td>20.8</td>
</tr>
<tr>
<td>RW3</td>
<td>6.7</td>
<td>6.1</td>
<td>7.8</td>
</tr>
<tr>
<td>RW5</td>
<td>16.4</td>
<td>11.3</td>
<td>2.7</td>
</tr>
<tr>
<td>RW6</td>
<td>28.2</td>
<td>26.1</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Tested in accordance with BS EN 826: 1996
NB Elastic limit occurs between 6 and 12% deformation.

Fire

Rockwool RW slabs are certified by Lloyd’s Register of Shipping as non-combustible materials for use on:
- fixed offshore installations
- MED classed ships – DTLR MCA approval

Rockwool RW slabs are rated non-combustible in accordance with ISO 1182 and IMO A. 799.

Water resistance

Rockwool RW slabs are highly water repellent. Where it is necessary to maintain water repellency subsequent to heating at elevated temperatures, the use of WRG grade slabs is recommended.

Maximum service temperatures

The maximum recommended service temperature of unfaced Slabs depends on the composition of the product and is given in the chart below.

For faced products, the facing temperature should not exceed 80°C – the melting temperature of the adhesive.

Rockwool Slabs are bonded with a phenolic resin which is resistant to temperatures up to 230°C. They may be used at much higher temperatures, but some resin will be lost close to the hot surface.

<table>
<thead>
<tr>
<th>Product</th>
<th>Service Temperatures °C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
</tr>
<tr>
<td>RWA45</td>
<td></td>
</tr>
<tr>
<td>RW3</td>
<td>120</td>
</tr>
<tr>
<td>RW5</td>
<td>170</td>
</tr>
<tr>
<td>RW6</td>
<td>220</td>
</tr>
</tbody>
</table>

Minimum bending radius for Rockwool slabs
(These typical figures depend on the installation method)

<table>
<thead>
<tr>
<th>Product</th>
<th>Slab thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30</td>
</tr>
<tr>
<td>RWA45</td>
<td>425</td>
</tr>
<tr>
<td>RW3</td>
<td>425</td>
</tr>
<tr>
<td>RW5</td>
<td>550</td>
</tr>
<tr>
<td>RW6</td>
<td>1500</td>
</tr>
</tbody>
</table>

All radii given in millimetres.

Bending radius

Curved surfaces can be insulated with Rockwool Slabs. The table below gives the minimum bending radius for several Rockwool Slabs. Bending to smaller radii can deform the product and increase the installation time.

<table>
<thead>
<tr>
<th>Product</th>
<th>Slab thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>RWA45</td>
<td>425</td>
</tr>
<tr>
<td>RW3</td>
<td>425</td>
</tr>
<tr>
<td>RW5</td>
<td>550</td>
</tr>
<tr>
<td>RW6</td>
<td>1500</td>
</tr>
</tbody>
</table>

All radii given in millimetres.

Fire

Rockwool RW5 steel bands

Metal cladding (sheets typically overlapped by 75 mm)

Self tapping screws at 100 mm centres

Figure 1 RW5 Slab insulation on a large vessel
Performance and properties

Acoustics

Rockwool stone wool works in two distinct ways to reduce noise, either by impeding the transmission of sound through an element of the structure or by absorption of sound at the surface.

Noise absorption is expressed as a factor between 0 and 1.0. The more sound that a surface absorbs, the higher its absorption coefficient.

The structure of the fibres in Rockwool Slabs make them ideal for use as a sound absorber, with characteristically high coefficients over a wide frequency range (see Table below).

Tissue faced slabs

Slab size: 1000mm × 600mm

Rockwool manufacture a wide range of tissue faced, line produced slabs, ranging from 45 kg/m² to 140 kg/m². See current price list for full range.

The tissues are bonded to the face of the slabs with binder which provides a superior acoustic and fire performance to fabricated, adhesive applied, tissue faced products.

70 gramme black and 100 gramme white tissue options are available from Rockwool.

Applications and typical details

Rockwool Slabs are suitable for a wide range of thermal, acoustic and fire insulation requirements both within buildings and for industry, as detailed on this page.

1 Industrial uses

Thermal and acoustic for boilers, ducts and vessels, particularly in the chemical, petrochemical and power generating industries.

Generally, for furnaces, ovens, calorifiers, hot-water boilers, storage tanks, drying equipment and air conditioning plant.

2 Fire protection

Floors

RW5 Slabs have been assessed by LPC as a suitable product for upgrading the fire resistance of dense concrete slabs (for up to 2 hrs).

RWA45 Slabs can also be used to firestop small voids, in particular the gap under pitched tiled roofs in dwellings (see Flexi data sheet).

3 Acoustic control

The Slabs are particularly suitable for acoustic infills in partitions and ceilings, providing a high level of control of both airborne and structure-borne sound (see figure 4).

They are also suitable for acoustic absorption in the linings of buildings, RW3 being particularly good in sound studios.

Rigid Slabs can be used in industrial applications such as acoustic splitters and acoustic damping of ducts.
Typical specification clauses – domestic and commercial applications

1. **RW3 slabs as acoustic infill to stud partition**
The acoustic infill is to be Rockwool RW3 Semi-rigid Slabs .......... mm* thick (insert thickness to correspond with depth of studs), installed to a tight fit between the timber studs and cut to close fit above and below noggings as necessary. Chasing of the acoustic infill or services will not be permitted without the prior consent of the Supervising Officer.

* Insert required thickness

**Work on site**

*Handling and storage*

Rockwool Rigid, Semi-rigid and Flexible Slabs are light and easy to cut to any shape with a sharp knife. They are shrink wrapped in polyethylene for short term protection. For long term protection they should be stored indoors or under a waterproof covering.

**Maintainance**

Once installed the Rockwool Slabs need no maintenance.

**Environment**

Rockwool insulation products are, and always have been, free from gases that are harmful to the environment, such as CFCs, HCFCs, HFCs, pentane or any gases that have Ozone Depletion Potential (ODP) or Global Warming Potential (GWP).

**Health and safety**

Current HSE ‘CHIP’ Regulations and EU directive 97/69/EC confirm the safety of Rockwool mineral wool; Rockwool fibres are not classified as a possible human carcinogen.

The maximum exposure limit for mineral wool is 5mg/m³, 8 hour time-weighted average.

A Material Safety Data Sheet is available from the Rockwool Marketing Services Department to assist in the preparation of risk assessments, as required by the Control of Substances Hazardous to Health Regulations (COSHH).

---

**Technical Helpline**

Technical advice relating to the Rigid, Semi-rigid and Flexible slab range is available from the Rockwool Technical Helpline Services Department on 0871 222 1780.