

# Wired Mat

## Insulation for high temperature applications

Rockwool Wired Mats are flexible Rockwool mats with 25 mm galvanised wire mesh stitched to one face. Two standard grades, Industrial and HD (heavy duty) are available.

Wired Mats are particularly suitable for the insulation of high temperature ducts, process pipework, tanks, vessels and boilers.

Wired Mat can be supplied (to special order) with wire mesh stitched to both sides, or with stainless steel mesh.

LD and HD Insulation Quilt is available without wire attachments.

### Advantages

- Excellent thermal and acoustic insulation for irregular surfaces
- Non-combustible
- High temperature use
- Strong and flexible
- Easy to handle and install

### Standards and approvals

Rockwool Wired Mats comply with the requirements of BS 3958-3: 'Metal mesh faced mats and mattresses' and can be used to satisfy BS 5422 'Specification for the use of thermal insulating materials'.

### Description

#### Dimensions

Standard width: 1000 mm

Thickness (mm)	Mat length	
	Industrial (m)	HD (m)
30	5.0	5.0
40	5.0	4.0
50	4.0	3.0
60	3.0	3.0
80	2.5	2.0
100	2.0	-

Note BS 5970 recommends that where total thickness exceeds 70 mm the application should be made in two or more layers arranged so that the joints are staggered.



Rockwool Wired Mat shown banded onto process vessel

#### Nominal density

Industrial Wired Mat: 90 kg/m<sup>3</sup>  
 HD Wired Mat: 128 kg/m<sup>3</sup>

#### Facings

The standard product is supplied with galvanised wire mesh one side only.

The following can be supplied to special order:

- galvanised wire mesh both sides
- stainless steel mesh on one or both sides
- reinforced aluminium facing underneath mesh
- without mesh ('Insulation Quilt')

### Performance

#### Thermal conductivity

Mean temperature (°C)	λ values (W/mK)	
	Industrial	HD
50	0.038	0.037
100	0.044	0.044
150	0.054	0.052
200	0.065	0.061
250	0.077	0.071
300	0.091	0.082
350	0.107	0.096

## Performance (continued)

### Fire

Rockwool Wired Mats are rated non-combustible in accordance with BS 476-4 and ISO 1182.

### Service temperatures

Industrial and HD Wired Mats can be used to insulate pipes and vessels against frost damage and equipment up to 600°C/800°C respectively, depending upon vibration levels.

Galvanised steel mesh may deteriorate at temperatures in excess of 65°C when in combination with conditions of high humidity. Additionally, the zinc coating will melt at temperatures above 400°C. Under no circumstances should galvanised metals be allowed to come into contact with stainless steel operating at temperatures above 350°C.

### Acoustics

It is sometimes desirable to improve the acoustic insulation of equipment, especially pipes in which gases, fluids or particle solids are transported at high velocities. The use of Rockwool Wired Mat can considerably reduce the level of environmental sound.

More detailed information is available on request.

### Generally

Rockwool is chemically inert. For other physical characteristics see also Data Sheet 001, 'Performance and properties'.

### Environment

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

## Applications

Particularly suited for applications where rigid materials prove difficult to install e.g. over irregularly shaped plant such as valves, flanges, steam turbines and boilers.

## Typical specification clauses

The following specification clauses and application details are given for guidance purposes only and should be considered in conjunction with recommendations given more fully in BS 5970.

### 1 Boilers, horizontal vessels and pipes

Boilers, horizontal vessels and pipes to be thermally insulated with..... mm thick Rockwool (state Industrial or HD) Wired Mat having galvanised wire mesh to one face. The Mat to be secured by lacing the mesh edges tightly together using 1 mm diameter (typ) galvanised soft iron wire at 100 mm (typ) centres.

Insulation over large surface areas to be further supported with galvanised steel bands at centres determined by the size and shape of the plant. Total insulation thicknesses greater than 75 mm to be applied in multi-layers with all joints in adjacent layers staggered. Mats exposed to the weather or to possible mechanical impact to be protected using galvanised mild steel sheet. Joints to be overlapped by 40 mm (min) and secured using blind rivets or screws at 100 mm (max) centres.

Where appropriate, main lapped joints to be filled with sealant and arranged to shed water.

Where dissimilar metals (such as aluminium and galvanised steel) are in direct contact, precautions should be taken to avoid possible electrolytic corrosion, as detailed in BS 5970.

The irregular nature of insulation mattresses should be allowed for when sizing cladding.

### 2 Vertical vessels & columns

..... mm Rockwool (state Industrial or HD) Wired Mat to be attached to equipment by 2.5 mm (nom) diameter welded steel pins and 38 mm (nom) diameter spring steel washers. Welded pins to be positioned at 450 mm (max) centres on vertical sides, 300 mm (max) centres on downward facing surfaces and 600 mm (max) centres on upward facing surfaces. Mat edges to be tightly butted and laced together through the facing mesh using 1 mm (typ) diameter galvanised soft iron wire at 100 mm (typ) centres.

## Work on site

### Handling and storage

Rockwool Wired Mats are supplied shrink wrapped in polyethylene and should be stored indoors or under a waterproof covering.

## Health and safety

A COSHH Data sheet is available from Rockwool's Marketing Services Department.

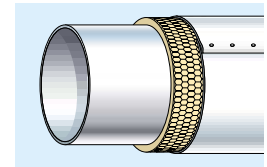
Current HSE 'CHIP' Regulations and EU Directive 97/69/EC confirm that Rockwool fibres are not classified as a possible carcinogen.

## Technical Helpline

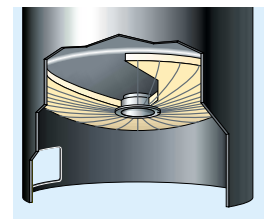
Technical advice is available from the Rockwool Industrial Helpline on 01655 868130.



High temperature pipework



Single-layer insulation of pipework



Wired Mat used on the vessel skirt of a tower column

Rockwool Limited reserves the right to alter or amend the specification of products without notice as our policy is one of constant improvement.

The information contained in this data sheet is believed to be correct at the date of publication. Whilst Rockwool will endeavour to keep its publications up to date, readers will appreciate that between publications there may be pertinent changes in the law, or other developments affecting the accuracy of the information contained in this data sheet.

The above applications do not necessarily represent an exhaustive list of applications for Wired Mat. Rockwool Limited does not accept responsibility for the consequences of using Wired Mat in applications different from those described above. Expert advice should be sought where such different applications are contemplated, or where the extent of any listed application is in doubt.

**WILHAMS**

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