

Ductslab and Ductwrap

For the thermal insulation of ductwork and water storage tanks

Rockwool Ductslab and Ductwrap provide thermal insulation for air conditioning, warm air and extract ducts used in the internal and external environment generally within plant rooms and boiler houses.

Rockwool Ductslab is also used for the thermal insulation of cold water storage, feed and expansion tanks.

The products are recommended for service temperatures of up to 230°C.

Advantages

- Acoustically absorbent
- Non-combustible
- Water repellent
- Chemically inert
- Easy to handle and install

Standards and approvals

Rockwool Ductslab satisfies the requirements of BS 3958-5, 'Specification for bonded man-made mineral fibre slabs'.

Rockwool Ductslab and Ductwrap can be used to satisfy the requirements of BS 5422 'Method for specifying thermal insulating materials'.

Description

Ductwrap is a lightweight, flexible insulation roll faced with reinforced aluminium foil. Ductslab is a semi-rigid insulation slab faced with reinforced aluminium foil.



Rockwool Ductwrap used to thermally and acoustically insulate ducting

Dimensions

Ductslab

length 1000 mm
width 600 mm
thickness 40 and 50 mm

Ductwrap

rolls, 1000 mm wide

Thickness of roll (mm)	Length of roll (m)	No of rolls in pack	Total length (m)
25	5	2	10
40	4	2	8
50	6	1	6

Density

The nominal density of Rockwool Ductwrap and Ductslab is 45 kg/m³.

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).

Performance

Fire

The products are non combustible and are rated Class 0 in accordance with the Building Regulations.

Water vapour resistance

When suitably taped, the aluminium foil gives Ductslab and Ductwrap a water vapour resistance of approx 1000 MNs/g.

Thermal conductivity

Mean insulation temperature (°C)	λ values (W/mK)
10	0.033
50	0.040
100	0.050
150	0.063

Service temperature and limiting surface temperature

Rockwool Ductslab and Ductwrap can be used for service temperatures of up to 230°C. The limiting outer foil face temperature is 80°C to maintain facing bond strength.

Acoustics

It is sometimes desirable to improve the acoustic insulation on pipes, especially those pipes in which gases, fluids or particle solids are transported at high velocities. The use of Ductslab or Ductwrap can considerably improve the level of environmental sound.

For higher standards of acoustic attenuation, Rockwool Techwrap can be used to provide both thermal and acoustic insulation.

Further information on acoustics is available on request.

Applications, design

The required thickness of Ductslab and Ductwrap insulation will depend on such factors as duct air temperatures, ambient air temperatures and the designed heat losses.

The following tables are for general guidance only.

Thickness of Rockwool insulation for warm air ducts

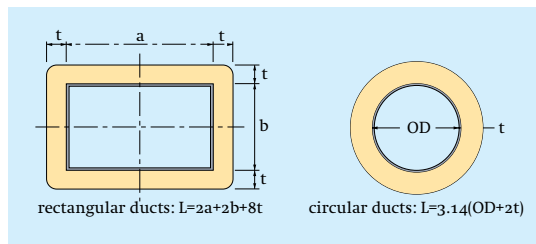
(taken from BS 5422)

Temperature difference between air inside duct and ambient still air (°C)	Recommended thickness of duct insulation (mm)
10	40
25	50
50	60

Rockwool Ductwrap

Calculation of length

The calculation to determine the length of Ductwrap required to insulate the pipe or duct is made using the formula shown below:



Minimum thickness of Rockwool insulation to prevent condensation

(taken from BS5422)

Minimum temperature inside duct (°C)	Recommended thickness of duct insulation (mm)	
	Ambient air	
	25°C, 80% rh	20°C, 70% rh
0	80*	40
+5	65*	25
+10	50	25
+15	25	25

* Insulation applied in two layers with joints staggered as recommended in BS 5970

Typical specification clauses for ductwork

The following specifications are for guidance purposes only and should be read in conjunction with recommendations given in BS 5970.

1 Horizontal ducts – concealed from view

The duct insulation is to be Rockwool Ductwrap manufactured by Rockwool Limited, Pencoed, Bridgend, CF35 6NY. All joints are to be securely taped with 75 mm wide plain soft aluminium self-adhesive tape (Idenden type T303 or similar and approved). Self-adhesive stick pins* are to be used to support the insulation on the underside of ducting. The whole is to be further supported by means of 19-22 swg x 50 mm mesh galvanised wire netting. Where a vapour barrier is required, care is to be taken when applying wire mesh, to avoid damage to aluminium foil.

2 External applications (weather protected)

The duct insulation is to be Rockwool Ductslab manufactured by Rockwool Limited, Pencoed, Bridgend, CF35 6NY, secured to the ducting by means of a suitable adhesive and/or self-adhesive stick pins*, applied in accordance with the manufacturer's recommendations.

All joints are to be securely taped with 75 mm wide plain soft aluminium foil self-adhesive tape (Idenden type T303, or similar and approved) to maintain a continuous vapour barrier. The final surface treatment is to be as detailed in 2.1 or 2.2 below:

- 2.1 The whole is to be finished with 0.8 mm thick polyisobutylene sheeting, all joints to be sealed with solvent welding agent.
- 2.2 The whole is to be finished with a single layer of aluminium foil faced roofing felt reinforced by 19-22 swg galvanised wire netting. Care is to be taken when applying the wire netting to avoid damage to the foil facing.

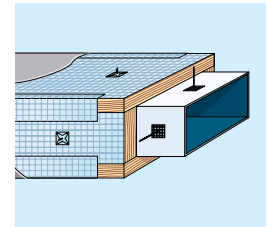
*Note The pins and washers are necessary, to avoid sagging of the insulation, particularly on larger size ducts and on the undersides of ducts. Fixing centres will depend on the size of the duct and the weight of the insulating material. The excess projection of the pins above the washers should be cut off and the washer sealed using the soft aluminium self-adhesive tape to maintain the integrity of the vapour barrier.

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).



External application of Ductslab with weather protection

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 Ductslab and Ductwrap. Rockwool Limited does not accept responsibility for the consequences of using Ductslab and Ductwrap 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.

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Technical Sales Helpline

Technical advice relating to Ductslab and Ductwrap is available from the Rockwool Sales Department on 0871 222 1780.