

Technical product sheet



PRODUCT DESCRIPTION

Stonewool insulating sheet with a mainly vertical fibre structure, as a constructive, insulating core material for sandwich panels. The Conrock® range comprises: Conrock® Q3, Conrock® Q5 and Conrock® Q7.



APPLICATION

Conrock® Q3 is suitable for:

- interior applications such as partitions;
- exterior applications under a slight load, such as filling panels.

Conrock® Q5 is suitable for:

- walls, ceilings and roofs under a normal load.

Conrock® Q7 is suitable for:

- sandwich panels under a heavy load, for example extra large spans or application at a great height.



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PRODUCT FEATURES

- High shear, compression and tensile strength;
- Suitable for effectively flat, smooth and functional sandwich panels;
- Remains flat, dimensionally stable and no blister formation;
- Large spans possible;
- Relatively low own weight;
- Permanently high insulating value;
- High heat accumulation capacity;
- Fireproof and resistant to temperatures in excess of 1000 °C. Classified in highest European fire class A1, according to EN 13501-1;
- Excellent acoustic properties;
- Combination possibilities with many types of coverings.

GENERAL FEATURES

Rockwool is:

- fireproof, causes no smoke development and does not produce toxic gases;
- water repellent, non-hygroscopic and non-capillary;
- insulating with a vapour diffusion resistance of $\mu \leq 1.3$;
- sound insulating and has excellent sound absorbing properties;
- chemically neutral and does not cause or promote corrosion;
- fully recyclable;
- dimensionally stable and not liable to shrink or expand;
- not conducive to mould.

DIMENSIONS

Table 1. Dimensions Conrock® Q3, Q5 and Q7

Conrock®	Q3	Q5	Q7
Length (mm)	2.000	2.000	2.000
Width (mm) Unprofiled*	500-625 and 1.000-1.250	500-625 and 1.000-1.250	500-625 and 1.000-1.250
Profiled	on request	on request	on request
Thickness (mm)**	30-200	30-200	30-200

* Other unprofiled widths on request

** Thickness tolerance: ± 0.5 mm

TECHNICAL DATA

Table 2. Technical data Conrock® Q3, Q5 and Q7

	Thickness (mm)	Q3	Q5	Q7
λ_D (W/mK)	30-200	0.042	0.043	0.046
Tensile strength (kPa)	30-120 121-160 161-200	60 50 40	70 60 40	90 70 50
Tensile modulus (kPa)*	30-120 121-160	1.800 2.500	2.500 3.000	3.500 3.500
Compression strength (kPa)	30-120 121-160 161-200	60 50 40	70 60 40	90 80 60
Compression modulus (kPa)*	30-120 121-160	1.800 2.500	2.500 3.000	3.500 4.000
Shear strength (kPa)*	30-120 121-160	50 40	60 50	80 60
Shear modulus (kPa)*	30-120 121-160	3.000 2.500	3.500 3.000	5.000 4.500
Norm density (kg/m³)*	30-180	100	110	135
Euro Fire class	30-200	A1	A1	A1
Fire resistance	30 to >120 minutes. This depends on the construction of the sandwich panel. Rockwool offers the opportunity of carrying out fire tests on the complete sandwich panel.			
Acoustic properties	Depending on the construction of the sandwich panel, more information on request.			
Construction Possibilities	These depend on the construction of the sandwich panel. Large spans possible. Rockwool offers the option of testing complete sandwich panels according to the RS1990 using the four point bending test.			

* All the above-mentioned mechanical properties are minimum values. Other qualities of Conrock® available on request.

THERMAL PROPERTIES

A sandwich construction guarantees a continuous insulating layer without thermal bridges. The Rockwool Conrock® core material does not age and the heat transmission co-efficient remains constant. Thermal bridges cannot be formed between the insulating sheets, seeing as the sheets do not shrink or warp. The sandwich construction therefore offers permanently durable thermal properties.

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FIRE SAFETY

The main properties of Rockwool Conrock® core material with regard to fire behaviour:

- Fireproof: Rockwool Conrock® is fireproof and will not contribute in any manner to the spreading of a fire;
- Best European fire class A1, according to EN 13501-1;
- Fully dimensionally stable. Rockwool Conrock® does not stretch, shrink or deform when exposed to fire;
- High temperature resistance. The melting point of Rockwool Conrock® is more than 1000 °C;
- Rockwool Conrock® does not cause smoke or burning droplets/parts in the case of fire;
- In the case of fire, no aggressive or environmentally unfriendly substances or gases are released.

Thanks to this combination of product properties, sandwich panels with a Conrock® core are very fire resistant and the core does not contribute to a fire spreading. Rockwool Conrock® core material therefore helps to prevent total damage in the event of a fire.

STRENGTH AND STIFFNESS

Walls and roofs are subject to wind loads. Such loads can be considerable, depending on the area of application and the height. Panels high up on the control tower at Schiphol Airport will be influenced much more by the wind than panels on a low building in the countryside, for example. The load which must be taken into account can be determined using standards. The Dutch standard applicable is NEN 6702. The Rockwool Conrock® core material has a mainly vertical fibre structure. This extremely constructive structure is ideal for use in sandwich constructions. The material guarantees remarkable great shear, compression and tensile strengths. Three Conrock® products have been developed for the various areas of application, with varying degrees of strength and stiffness.



DIMENSIONAL STABILITY

Walls and roofs made of sandwich panels are exposed to temperatures varying from -25 °C to +90 °C. It is mainly the insulation material which must limit undesired heat loss. In the summer, the stonewool insulation ensures that the heat does not penetrate the building easily. Rockwool is fully dimensionally stable, insensitive to temperature and moisture, and is durable. Conrock® will therefore not result in tension in the sandwich panels. The thermal coefficient of expansion is virtually zero. Moreover, Conrock® easily absorbs tension and distortion caused by temperature fluctuations between the exterior and interior sheets of the sandwich panels.

MECHANICAL LOAD

Loads which are exerted on sandwich panels first occur during the construction process and continue even during use of the building. In roofing constructions and walkable ceilings for example, a load is exerted by walking during the construction process itself and during inspection and maintenance work on the construction. Thanks to its fibre orientation, Rockwool Conrock® core material is very pressure resistant for both static and dynamic loads applied to the construction. In panels with a relatively thin sheeting however, care must be taken that frequent walking does not detach the core from the sheeting. This can be achieved simply, by adding a (temporary) pressure distribution layer.

MOISTURE

Many forms of moisture put a load on sandwich panels. Roof or wall constructions must be able to withstand rain, snow, hail, ice, mist and dew. Not to forget the load put on sandwich panels by constructional and residential moisture, in vapour or condensed form, also when the panels are used as partitions or ceilings. The panels must be able to withstand all these forms of moisture. Rockwool Conrock® core material is water repellent. This means that water drops are repelled when they come into contact with the insulating sheet. Moisture in the atmosphere is also not attracted to the panels. Rockwool Conrock® core material therefore easily meets the European requirements of 0.5 kg/m² according to EN 1609. Of course, the seams in sandwich panels must be paid great attention in order to guarantee the waterproof properties of the panel construction. The Rockwool Conrock® core material allows for simple and effective seam detailing.

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VAPOUR OPENNESS

Interior climate conditions such as temperature and moisture depend on the conditions under which the building is used. The vapour pressure load may vary greatly. This must be explicitly taken into account during design of the construction. The seams of sandwich panels must be made in such a manner that transportation of vapour through the construction is avoided where possible. If moisture should permeate through the panels after all, the vapour open structure of Conrock® ensures the moisture flow away and the pressure is evened out, so that blisters cannot be formed.

SOUND INSULATION

Individual comfort in buildings depends strongly on the acoustic climate. Both sound insulation and the limitation of noise levels play an important role. Its fibre structure gives Rockwool Conrock® core material excellent acoustic properties. Depending on the seam detailing and the type of sheeting, Conrock® provides good soundproofing and fantastic sound absorption properties.

CHEMICAL PROPERTIES

The composite materials within a construction can negatively affect each other. The wrong choice of insulating materials can accelerate the corrosion of fittings or metal parts, for example. Rockwool Conrock® core material is chemically neutral. It does not contain aggressive, corrosive components. Conrock® also contains no solvents, oils or softening agents which might affect sealing properties. The Rockwool Conrock® core material can be easily adhered to a variety of sheeting materials using a number of types of adhesive, without this causing problems for the components or the fitting of the sandwich panels.



PROCESSING

Rockwool Conrock® core material is formed in sandwich panels under controlled factory conditions in completely or partially automated production lines. Panel builders have great experience in the glueing of Rockwool Conrock® core material to form high quality sandwich panels for all kinds of applications.

Generally speaking, the use of sandwich panels is a quick and efficient construction method. A building can be made wind and watertight in one simple working process.

The panels must be constructed at the building site, according to the instructions of the panel manufacturer. A number of general ideas and tips are given below:

- If the panels need to be temporarily stored at the building site, they must be stored on a flat surface, whereby the panels are above ground level, and dry.
- When stacking pallets, a pressure distribution layer must be used on the bottom pallet. Never stack more than two pallets high.
- Roofs and walkable ceilings must have a pressure distribution layer on the walking paths, in order to avoid the core becoming detached from the sheeting.
- When mounting the panels, hoisting facilities must be available according to the instructions of the panel manufacturer.

CERTIFICATION

- Rockwool Conrock® core material is CE certified.

SPECIFICATIONS

For specifications, please refer to the STABU specifications service which can be reached via www.rockwool.nl.

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ROCKWOOL®
FIRESAFE INSULATION

TAKING CARE OF COMFORT