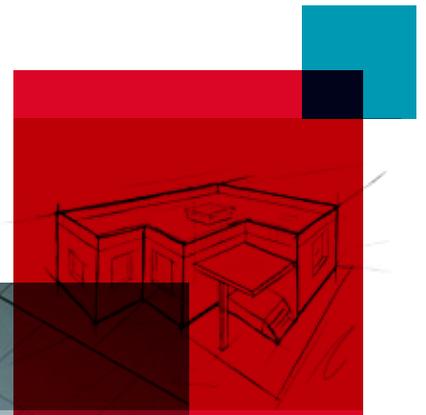


Thermal and Condensation Control for Interior Spaces

ROCKWOOL Concrete Soffit System



3

What is Soffit Insulation

4

Why is Insulation Needed in Soffit System

5

ROCKWOOL Concrete Soffit System

6

Installation Guide



Our Tampines Hub, Singapore, is an integrated community and lifestyle hub. Its car park was insulated with ROCKWOOL Concrete Soffit System.



What is Soffit Insulation?

Protecting the exterior of a building from the elements is just one factor that contributes to creating an interior space which promotes positive health and wellbeing. When constructing the internal environment, floors and ceilings form a major part of the structure, with interfacing between the two extremely common in multi-storey developments.

Where separating floors are concerned, a soffit is basically the architectural feature, generally placed horizontal at the underside of a structural element. The soffit is usually constructed from prefabricated concrete and

could be found in mixed-use developments, such as housing retail units alongside leisure destinations and residential dwellings or in commercial use buildings.

Such developments and buildings are often located in high traffic areas, and whether in the city centre or out of town, require adequate parking provision if they are to not only survive, but thrive. Therefore, the car parks designed to sit beneath these developments and where the upper floor beam will be exposed, require treatment for thermal performance and condensation control.

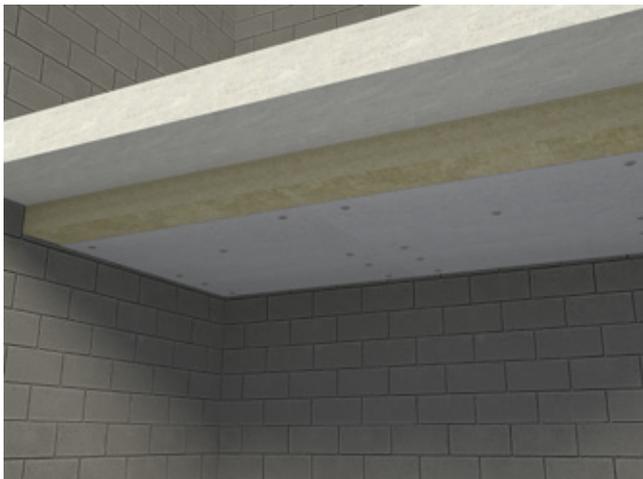
Soffit insulation, especially those of non-combustible material, is particularly suited to ensure effective fire resistance, while providing excellent thermal performance for the soffit system. The insulation also prevents surface and interstitial condensation when applied in concrete car park soffits and similar applications or where temperature differences between two separated compartments are significant, such as buildings with air conditioned server room, data center or cold storage facilities.



Why is Insulation Needed in Soffit System?

Building owners and designers are increasingly expected to improve energy efficiency and take cost savings measures, while ensuring a resilient and sustainable performance of their buildings. This naturally translates to requirements for a soffit system able to match and deliver those performances. Therefore, the insulation material used in the system should also provide good thermal properties and supports a robust and long-lasting performance.

In some countries where stringent building legislations mandate further requirements in terms of thermal and fire performance of soffit system, the use of high performing non-combustible insulation reinforces the soffit system's compliance with building codes.



Thermal Performance

Insulation of soffit systems provides a simple yet effective way to reduce energy loss through thermal transmission and increase the energy efficiency to the structure. Particularly for under floor soffit system that separates an air-conditioned and non-air-conditioned floors, the use of proper insulation reduces the heat transfer as well as prevents the possibility for surface and interstitial condensation from occurring.

Buildings, like people, need to stay healthy. When condensation affects a building, this can usually be seen in the presence of mould or fungi on the ceilings or walls. Therefore, the building may become a health risk for its occupants and over time, impact the value of the property by up to 25%.

Stone wool is vapour-permeable, which means it allows moisture to pass through the building envelope and out of the building. This helps protect soffit systems against rot, mould, and humidity damage. The 98 percent porous material of ROCKWOOL stone wool, unlike a closed-cell structure, meant that any moisture present naturally and quickly migrate to the cold side of the material and evaporate, ensuring its thermal performance remains unaffected.

The durability of ROCKWOOL stone wool meant that its thermal performance does not decrease over time and will remain stable over the lifetime of the building. Furthermore, ROCKWOOL stone wool insulation does not require any maintenance.

This is especially relevant for soffit systems, where the costs of maintenance and refurbishment becomes costly as it may require closure or at the very least disruption of business in commercial or shared residential areas.

Non-combustibility

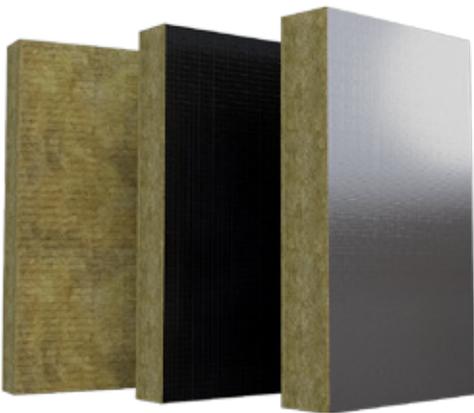
In structural elements such as car parks and similar areas, local regulation may require compliance of fire resistance to the exposed floor. It is therefore essential that the insulation material used is non-combustible and able to meet or exceed the demands of building legislation.

ROCKWOOL stone wool is the ideal material for fire resistant structures as it is able to withstand temperatures exceeding 1000°C, and achieves the highest European fire classification, A1, according to EN13501-1. It is a natural fire barrier, contributing towards the safe escape of buildings' occupants and first responders' intervention. At the same time, ROCKWOOL stone wool does not significantly contribute to smoke toxicity. Inhaling toxic smoke from fires can be extremely dangerous and is the cause of most fire-related casualties.

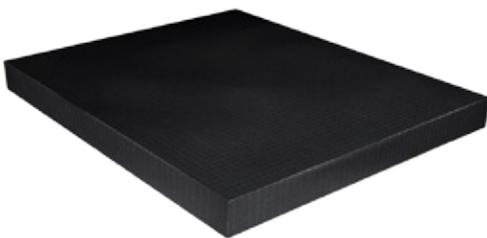
ROCKWOOL Concrete Soffit System

ROCKWOOL Concrete Soffit System is the proven solution with an ideal match of properties and performance for a soffit system. It achieves not only the desired thermal performance and condensation control but in many cases exceeds expectations by future-proofing buildings to make them more efficient, healthier, robust and sustainable. ROCKWOOL Concrete Soffit System also helps create safe, healthy and comfortable indoor environments that pose no danger to occupants' health and safety.

The ROCKWOOL Concrete Soffit System consists of the product range of Safe 'n' Silent Pro350, Safe 'n' Silent Pro370, insulation fasteners and multiple types of facing options.



Safe 'n' Silent options with or without facings



Safe 'n' Silent with multiple sides black mat tissue facing

Technical Information

Standard and approvals

ROCKWOOL Safe 'n' Silent Pro achieves a reaction to fire classification of A1 or non-combustible as defined in BS EN 13501-1 & BS 476 Part 4.

Compatibility

ROCKWOOL Safe 'n' Silent is chemically inert and compatible with most materials with which they are likely to come into contact in normal building applications.

Acoustic property

ROCKWOOL Safe 'n' Silent achieves NRC value 1.0

Biological

ROCKWOOL Safe 'n' Silent is non-organic and vapour permeable, and resistant to mould and mildew.

Environmental

The safety of ROCKWOOL stone wool is confirmed by EU directive 97/69/EC, ROCKWOOL fibres are not classified as a possible human carcinogen.

A Material Safety Data Sheet is available upon request and can assist in the preparation of risk assessments.

Property	Description	
Product Name	Safe 'n' Silent Pro350	Safe 'n' Silent Pro370
Length	1200mm	
Width	600mm	
Thickness	50mm	75mm
Thermal Conductivity	0.034 W/mK	
Reaction to Fire	Non-combustible / A1 Fire Classification	
Melting Point	More than 1000°C	
Facing Options	<ul style="list-style-type: none"> ■ Single faced black mat tissue facing ■ Double faced black mat tissue facing ■ Single faced aluminium foil ■ Aluminium foil and black mat tissue facing ■ Multiple sides black mat tissue facing <p><i>*Note: Overlay facings are available upon request</i></p>	

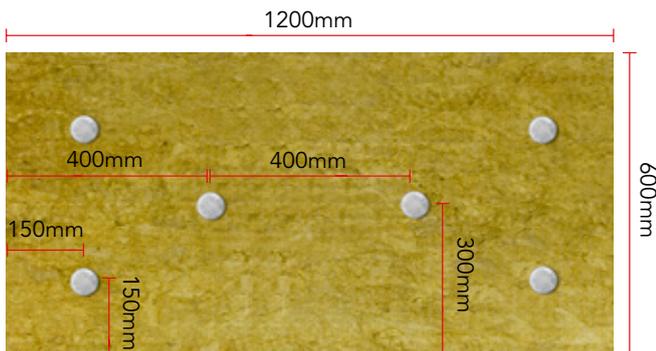
Installation Guide

Insulation used in soffit can be positioned above or below the structural floor. The following recommended installation methods help improve installation speed as well as enable workspace sharing with others in order to meet project completion time-line.

When fixing a tile or modular system, it is advisable to start with a focus reference slab in the centre of the soffit with subsequent slabs being fixed working towards each edge. The use of string lines or laser alignment equipment will assist in ensuring alignment and squareness of the installation.

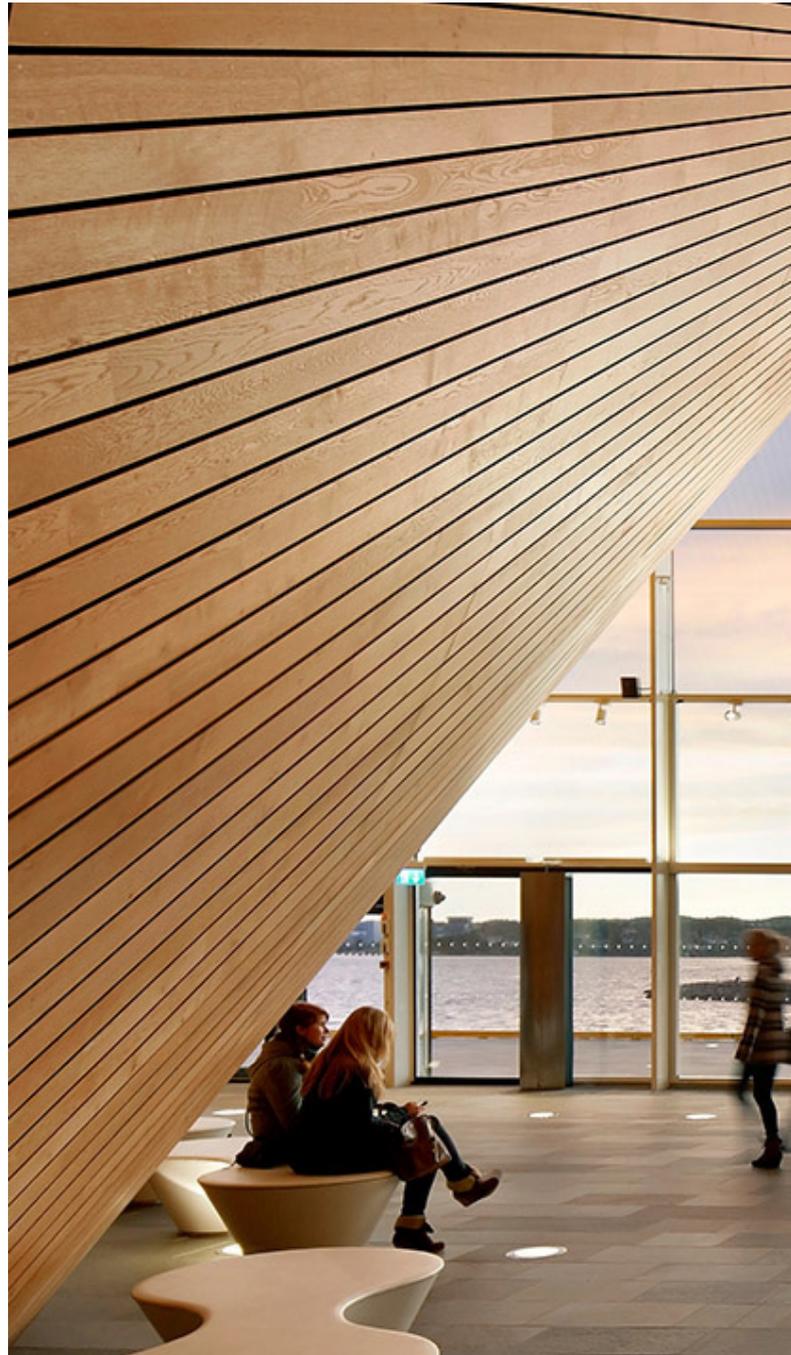
Mechanical fixings

ROCKWOOL Safe 'n' Silent Pro product allows for simpler installation as it could be fixed directly to the underside of the concrete soffit and do not require pre-drilling of holes. In terms of installation methods, there are many ways to install the soffit insulation. The two most effective and efficient ways for fast installation are using a gas actuator tool together with insulation fastener, or drilling and fastening with insulation anchors. Recommended number and pattern of fixings for each slab size are shown in Figure below. Avoid over-tightening fixings to prevent damage to slab surface. For further information on fixing type and suitability, please refer to the fixing manufacturer.



Light fittings and services

ROCKWOOL Safe 'n' Silent should not be used for supporting light fittings or services. Such installations should be supported from the concrete soffit.





ROCKWOOL IN ASIA

ROXUL ROCKWOOL Technical Insulation India Pvt. Ltd

Wing B-2, 2nd Floor, Unit No.206
Boomerang, Near Chandivali Film Studio
Chandivali Farm Road, Andheri (E)
Mumbai - 400072, Maharashtra, India.
T (+91) 022 6715 7700
F (+91) 022 6715 7710
Toll Free 1800 266 9861

Indonesia Representative Office ROCKWOOL Malaysia Sdn Bhd

Wisma Pondok Indah Tower 3
17th Floor, Jl. Sultan Iskandar Muda V
Jakarta 12310, Indonesia
T (+62) 21 2965 9071
F (+62) 21 2953 8998

ROCKWOOL Malaysia Sdn Bhd

Lot 4, Solok Waja 1
Bukit Raja Industrial Estate
41050 Klang, Selangor, Malaysia
T (+60) 3 3341 3444
F (+60) 3 3342 7290



*Note: EUCEB only applicable for products produced in India & Malaysian factories

ROCKWOOL Building Materials (Singapore) Pte. Ltd.

No 7, Tuas Avenue 1, Jurong Town,
Singapore 639492
T (+65) 6861 4722
F (+65) 6862 3533

ROCKWOOL (Thailand) Limited

B.GRIMM Building 11th Floor
No.5, Soi Krungthepkreetha 4
Huamark, Bangkok
Bangkok 10240, Thailand
T (+66) 2731 7511-14
F (+66) 2731 7510

Vietnam Representative Office ROCKWOOL (Thailand) Limited

9th Floor, TNR Tower,
180-192 Nguyen Cong Tru Street,
District 1, Ho Chi Minh City, Vietnam
T (+84) 8 6288 2009
F (+84) 8 6288 4691

110 124 - 09/20_V1 (EN)

Disclaimer: The information contained in this brochure is believed to be correct at the date of publication and is subject to change after the date of printing. ROCKWOOL does not accept responsibility for the consequences of using any product in this brochure in any applications different from those described here.

