Rockfon

Acoustic Solutions for Data Centre

Cohesive, easy-to-install acoustic ceiling system that meets excellent safety standards





What will future data centres look like?
The importance of data centres has been highlighted in recent years, not only in ensuring the operation of IT companies, but also in our daily lives. In addition, 5G data, the Internet of Things (IoT), and Edge Computing will all have a significant impact on this market in the coming years.

Whether it's a new build or retrofit project, this brochure is for you. You'll find the latest trends that are shaping data centre design, plus suggestions for making acoustics more than just an afterthought.

Let this easy-to-navigate booklet inspire and guide you on the course of making health and safety the central tenet of your next data centre design.

In recent years, the data centre sector has grown significantly, so does noise concerns on their employees' well-being and we're here to help. Our ceiling and wall solutions are easy to install and provide excellent acoustic properties. They also have anti-static and dust resistance qualities, ensuring that static electricity build-up is avoided. In addition, our products are rigorously tested to ensure they meet the strictest fire safety and hygiene standards, making them ideal for data centres.

Parik Chopra, Managing Director, Rockfon



Project Ebbepark Spektrum, Sweden
Product Rockfon Blanka®

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Key Trends in Data Centre Design



Data centres have become a vital part of modern life.

Data centres are the backbone supporting increased internet traffic, offering collaborative software for businesses and maintaining data security. Over the past few years, we have seen an increase in remote working and learning environments. As a result of this new normal, the need for rapid access to information has been extremely challenging for data centres to keep up with. Overall, balancing quality online services against rising demands — driven by IoT growth — is not an easy undertaking. This has caused a greater demand on data centres worldwide.



Product Rockfon CleanSpace®



Plug and Play

For data centres, rapid change is inevitable, as facilities scramble to keep pace with tech cycles. As a result, the design needs to be adjustable, adaptable, and especially scalable. Data centres need to be built in a prototypical, modular fashion that enables them to grow and change out efficiently.

How can we help?

At Rockfon, our wide range of acoustic ceiling tiles are modular, customisable, demountable, and available in multiple formats, edges and colours. This allows them to be installed, broken apart, or scaled with ease. In other words, we offer full creative freedom and flexibility to future-proof your data centre.



Safety Built-in

Data centres are central nervous system of the economy, but they also have substantial risks. There are many things that can go wrong and cause a data centre to fail. These can include cyber incidents, hardware degradation due to acoustic vibration, heat threat, high humidity level, static electricity, and risk of fire.

How can we help?

Apart from having 60 years of experience in delivering top-notch solutions, we also design our products with safety in mind. Made from stone wool, our products are naturally humidity- and fire-resistant. We also have different product lines that have antistatic and dust resistance qualities, while also withstanding various methods of cleaning and disinfections.

Sustainability

The data centre of the future is undoubtedly becoming greener, with property developers demanding more efficient and environmentally considerate data centres. As a result, this shines a brighter spotlight on product materials and their durability.

How can we help?

Rockfon's products are made from naturally sourced, longlasting stone wool, with 29% to 64% recycled content in a closed-loop manufacturing process. We also have recycling systems in place as well as resources to assist in eliminating waste in landfills. By using our products, you can earn credits towards building rating schemes, while leaving positive impacts on both people's well-being and the planet.

Acoustic Solutions for Different Areas



Reception Area / 14



Hallways and Security Points / 18



Server Room / 8



Enclosed Offices / 22

HOW TO DESIGN FOR DIFFERENT SPACES IN A DATA CENTRE

A data centre's design is a huge task that takes a lot of time, effort, and investment. A data centre facility, when built properly, can house servers and other IT equipment for decades.

When designing a data centre, most of the effort will go into the areas where the servers and other equipment will be kept. However, another important consideration is the support team's office. With the pandemic shining a light on well-being, it's important to design an office that meet employees' evolving needs.



Product Rockfon CleanSpace®

Server Room

Integrated safety when designing a server room

Proper environmental controls and venting

Server rooms are enclosed areas that store servers for the entire data centre. Network connectivity and power, room temperature control and ventilation, room and rack security, and fire and seismic protection must all be considered when designing these settings.

Maximise efficiency, minimise downtime

The components of a server room must be safeguarded from the detrimental effects of — for example, extreme temperatures, fire, humidity, etc. — for it to function properly. Installing the proper ceiling structure is critical to maximise data centre's efficiency, ensuring minimal downtime.





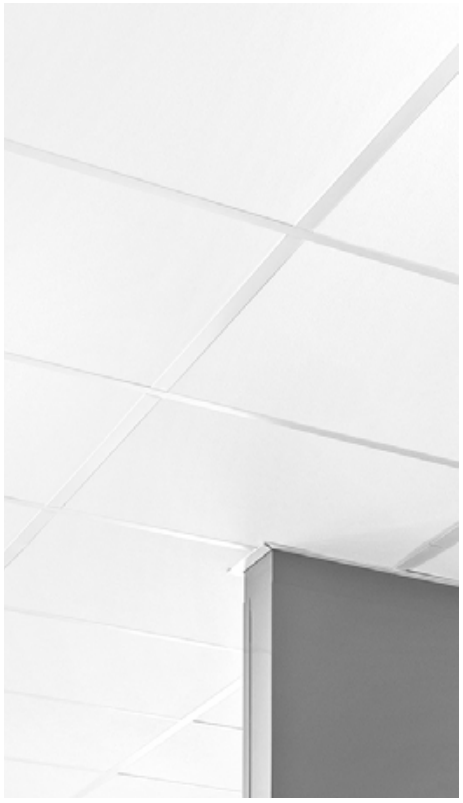
Our recommended ceiling tiles for server rooms

Rockfon CleanSpace® Essential
An aesthetic ceiling tile solution that is designed to fulfil the needs of both industrial and practical environments.

This tile has a white painted, gently cleanable, smooth surface. It is available in standard dimensions. The surface can be cleaned with a damp cloth or vacuumed. And last but not least, it is easy to cut and install while containing excellent acoustic properties.

KEY TAKEAWAYS

- ISO Class 4 certified
- Class A acoustic performance
- Aesthetic finish with A-edge
- Highest fire safety (Class A1)
- Allows for vacuum and damp cloth
- Up to 100% humidity resistance

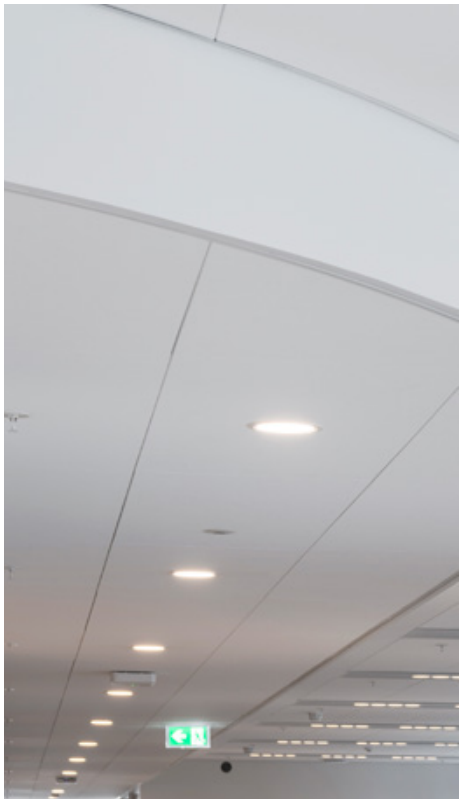


Rockfon CleanSpace® Pure
A long-lasting acoustic ceiling tile solution that is able to endure a variety of cleaning and disinfection methods.

Designed for healthcare, it has a smooth, deep-matt and pure white surface which has the added bonus of high light reflection properties.

KEY TAKEAWAYS

- Enhanced durability and dirt resistance
- Class A acoustic performance
- Allows for vacuum, damp cloth and high-pressure cleaning (monthly and only applicable for A-edge installation)
- Resistant to using Hydrogen Peroxide Vapor disinfection with impact on aeration time
- Withstands disinfection methods such as hydrogen vapour peroxide, UVC and Ozone
- ISO Class 3 certified
- Up to 100% humidity resistance



Rockfon Blanka® dB 46

This tile provides enhanced room to room sound insulation, as well as a high level of sound absorption (Class A) in areas where privacy and acoustic comfort are important.

With a 50mm dual layer stone wool core and high performance membrane on the backside, this tile reduces the transmission of noise from room to room. It also varies in width to provide increasing levels of sound insulation and sound absorption, so you don't need to compromise on concentration and privacy.

KEY TAKEAWAYS

- Dual layer stone wool tile with inner high-performance membrane
- Visible side: smooth, deep matt, super white painted fleece
- Rear side: back fleece
- Durable painted edges
- Meet the fire performance classification: A2-s1,d0 (EN 13501-1)
- Allows for vacuum and damp cloth
- Thermal conductivity: λD = 40 mW/mK
- Thermal resistance: R = 1.25 m^2K/W

Our recommended ceiling systems for server rooms



Chicago Metallic™ T24 Click 2890
24mm grid with universal main runner and joggled end cross tees.

A strong and stable grid which can be easily demounted countless times without degradation in quality. It can be used to create concealed, semi-concealed and exposed ceiling solutions. The grid also offers an audible 'click' for fast and accurate installations.

KEY TAKEAWAYS

- Class A1 fire resistance
- Class B corrosion resistance
- Hanger distance of 1250mm
- Various module sizes
- Extended load bearing capacity due to same height of main runners and cross-tees



Chicago Metallic™ Alu 740
24mm aluminium grid with non-magnetic properties.

This non-magnetic grid is ideal for use in computer and server rooms. It can be used to create concealed, semi-concealed and exposed ceiling solutions. The grid is supplied in a specific white colour 01.

KEY TAKEAWAYS

- Class A1 fire resistance
- Class C corrosion resistance
- Hanger distance of 1200m
- Module sizes (mm): 600 x 600, 1200 x 600
- Extended load bearing capacity due to same height of main runners and cross-tees





Reception Area

First impressions matter

Emphasise on physical security

A lot of highly expensive equipment is housed in data centres. Furthermore, most facilities will constantly have essential, if not sensitive, data going in and out. One of the most important reasons data centres are established is to keep all of this safe. In light of this, it's vital to think about physical security while planning a new facility.

Focus on acoustical comfort

Acoustics in the reception area is especially important. This is due to the generally high level of conversation and footfall, combined with sound reverberation issues as a result of hard surfaces often used in these areas.

By integrating acoustics into the design phase, you can ensure speech clarity and speech privacy while maintaining visual appeal.





RECEPTION AREA







Our Product Recommendation

Rockfon Eclipse® Island

Offer flexible installation possibilities and a wide selection of shapes and colours for total design freedom.
Rockfon Eclipse Islands are quick and easy to install. You can either suspend them from the ceiling or attach directly to the wall, adding a distinctive visual appeal to any room. In combination with the highest performance in sound absorption, they contribute to reducing reverberation time and sound levels.

KEY TAKEAWAYS

- Class A sound absorption
- Available in any colour or any shape
- Quick and easy to install
- Perfect for thermal mass installations
- Can be suspended alone or under a traditional acoustic ceiling

Product Rockfon Eclipse® Island

Other products you should also consider:

Rockfon Blanka®
This acoustic tile has a smooth, deep, matt, and super-white surface. With 99% light diffusion, Rockfon Blanka draws in natural light 11% deeper into every corner, saving up to 23% of electricity usage.

Rockfon® Universal™ Baffle
This product is available in white plus 34 Colours of Wellbeing contemporary colours and is perfect for offices with an exposed soffit. The two end caps and the fully framed edges help prolong the product life.

Rockfon Color-all®
This range of acoustic tiles is available in our 34 exclusive Colours of Wellbeing, allowing you to enhance your interior design theme while also controlling sound reverberation.



3 design tips to improve the reception area:

1. Use Class A acoustic ceiling and wall solutions to minimise noise reflecting from hard surfaces.

2. Emphasise corporate culture and identity by integrating different building materials, colours, and designs.

3. Incorporate biophilic elements, such as plants, natural textures, as well as different materials and colours to foster well-being while breaking up the space.



Product Rockfon Blanka®

Hallways and Security Points

Prevent unauthorised access



Make the silent pathways interesting

Corridors double up as means to navigate the data centre and a space for impromptu conversation with colleagues. With the use of biophilic elements, colours, and textures, we can keep these walkways sophisticated with relaxing feel. So much, that we can even get a few minutes of relaxation to calm our mind, subdue anxiety, increase energy levels, and improve mood — while passing through.

Keep the access limited

As 30% of data breaches are caused by internal users, it's important to be very careful about the people who have access to data centres. In order to keep access limited, you should set up multiple layers of seperation and require access controls for each layer. For example, initial entry may rely on biometric scanners, followed by sign in verification from security personnel. Inside the data centre, equipment will be separated into different zones where access to the zone is verified. Additionally, video surveillance monitors all of the protected areas of the facility.







Our Product Recommendation

Rockfon® Tropic

Smooth attractive white surface for various applications.
This all-round tile has a highest sound absorption rating and a smooth white surface. It is also available in a full range of dimensions and in semi-concealed and visible grid options, making it a popular and affordable choice.

KEY TAKEAWAYS

- Class A sound absorption
- Full range of dimensions in semi-concealed and visible grid options
- Easy to clean with a vacuum
- Cradle to Cradle Certified® Silver

Product Rockfon® Tropic

Other products you should also consider:

Chicago Metallic™ Matt-White 11 Grid
This grid gives you an elegant, modular suspended grid ceiling that stays white from every angle, matching your acoustic ceiling tiles perfectly.

Rockfon Blanka®
This tile has a smooth, deep matt, super white surface with high light reflection and light diffusion, which contributes to energy savings and a comfortable indoor environment. Its non-directional surface reduces installation time.

Rockfon® System Maxispan T24 A,E™
This strong and stable grid installation system is perfect for wide corridors. Spanning up to 3 metres in width, the grid gives quick and easy access to the ceilings for installing security equipment, inspection, and maintenance.



3 design tips to improve acoustics in the hallways and security points:

1. Use Class A acoustic ceiling and wall solutions to reduce sound travelling, keep the noise to the minimum.

2. Have sound barriers, such as floor screens or hanging dividers, to separate these areas from the rest of the data centre.

3. Consider sound masking to prevent unauthorised personnel from overhearing, accessing, and stealing sensitive, classified information.



Enclosed Offices

Enclosed rooms for security measures



Protect the data centre from unauthorised access
Even though open-plan office is a trend, security officers need a place to work. They need an enclosed room where they can access control systems to monitor data centre sites and facilities. They also need a space where they can have an effective overview of the facility perimeter, entrances, shipping bays, server cages, interior aisles, and other sensitive security points of interest. If any unauthorised entry attempts are detected, they would be the first to know for immediate response and remediation.

Improve speech clarity for better productivity
To promote collaboration and the exchange of information, it is vital to be able to properly hear what is being said. Noise in enclosed rooms can easily reverberate off hard surfaces, such as walls, floors, and furniture. This heightens the need for not only sound absorption, but also sound insulation to maintain privacy and confidentiality.

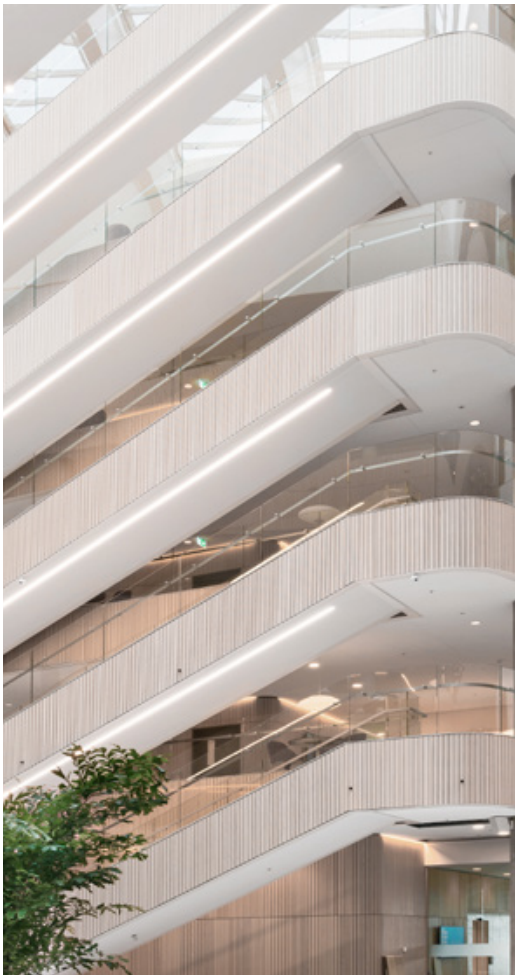
To learn more, visit our website and download the brochure dedicated to office design.

rockfon.de/einsatzbereiche/buero

In this brochure, we go into detailed of an open-plan office, including different areas such as huddle and private zones, meeting rooms, as well as canteens and cafes.



Project Portalbygget Fornebu Office, Norway
Product Rockfon® Tropic™



Architect PLH Arkitekter
Product Rockfon Blanka®

CASE STUDY

Total Upstream
Denmark

Project Information

Total Upstream's domicile at Amerika Plads in Copenhagen, Denmark, is a multi-user building for 800 staff. The building marks its presence with a striking curved corner towards the busy Kalkbrænderihavn street, and the inner square behind. Thus, creating a welcoming meeting with its urban context where residential, office, retail, and restaurant activities blend.

The ground floor, with its five-meter-high ceilings, projects its functions as a semi-public zone that interacts with life on the square.



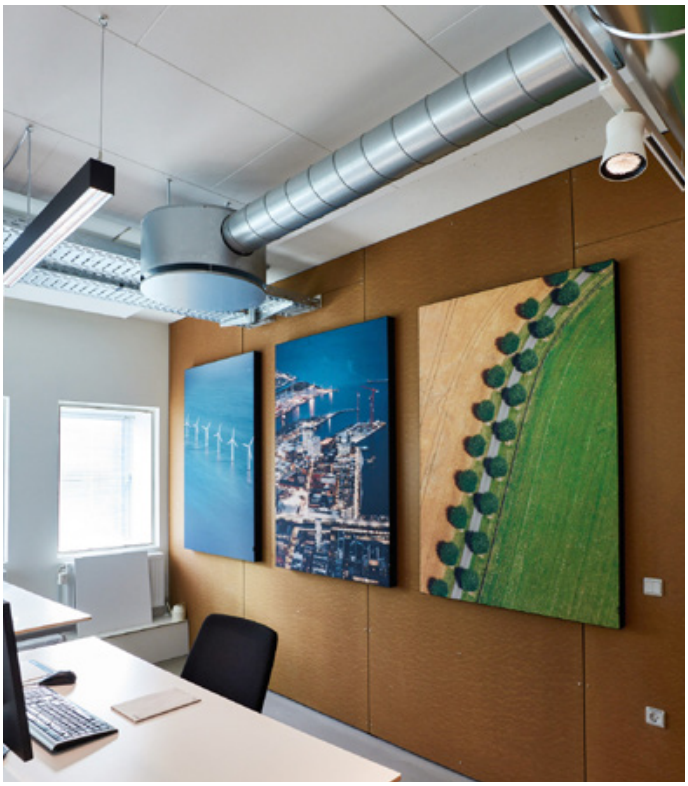


Project Perfact Group Office, Netherlands
Product Rockfon Canva®

Our Product Recommendation

Rockfon Canva®

Create a powerful statement and brilliant acoustics.
Freely design your office signage, display powerful statements, or support wayfinding by using Canva's modular form and detachable canvases. With wall panels, floor screens, and hanging dividers within the range, they are a smart and easy way to create flexible, feel-good spaces.



KEY TAKEAWAYS

- 34 subtle, yet playful Colours of Wellbeing
- Custom canvas design possible
- Detachable, washable and replaceable canvas
- Class A sound absorption

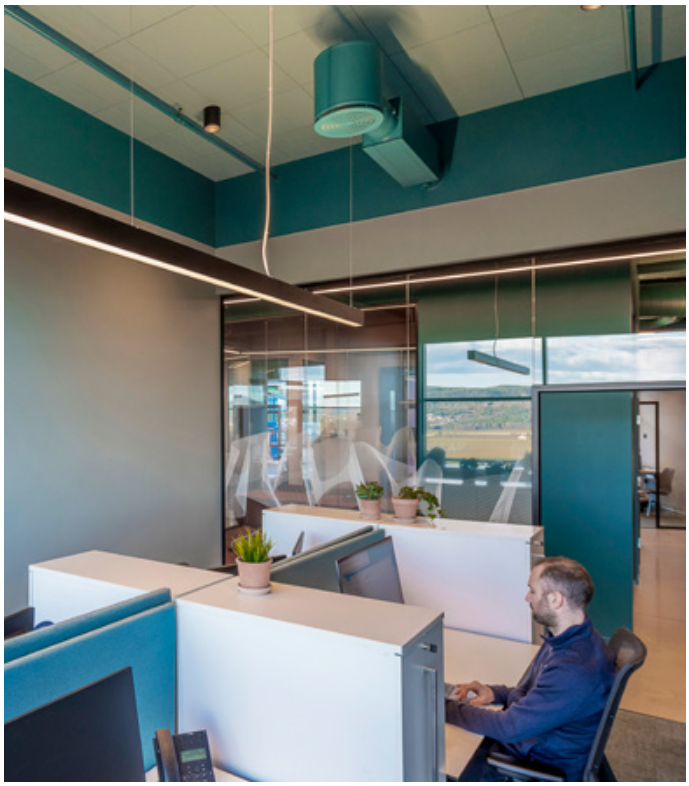
Project Sundtkvartalet Office, Norway
Product Rockfon Blanka® dB 35

Other products you should also consider:

Rockfon Blanka® dB
This range of acoustic tiles has a stone wool core with a high-performance membrane on the back, which reduces the transmission of noise from room to room. The tiles vary in width to provide increasing levels of sound insulation and sound absorption, so you don't need to compromise on concentration and privacy.

Rockfon® Soundstop™
This acoustic barrier reduces noise transfer in ceiling and floor plenums and is ideal to combine with our Rockfon Blanka dB range.

Rockfon Color-all®
Our coloured ceilings solutions don't just reduce noise; they also help create unique spaces. The range comes in 34 exclusive colours design to promote well-being. This can help to inspire and enhance your interior design, giving you many possibilities to set the mood.



Product Overview

Performance	Rockfon Blanka®	Rockfon Blanka® dB 35	Rockfon Blanka® dB 41	Rockfon Blanka® dB 43	
Sound absorption	α_w: up to 1.00 (Class A)	α_w: 0.80 (Class B)	α_w: up to 0.90 (Class A)		
Direct sound insulation	-	R_w = 19 dB	R_w = 21 dB	R_w = 22 dB	
Room to room sound insulation	-	D_n,f_{rw} = 35 dB with Acoustimass = 45* dB with Soundstop 30 dB = 50* dB	D_n,f_{rw} = 41 dB with Acoustimass = 52* dB with Soundstop 30 dB = 55* dB	D_n,f_{rw} = 43 dB with Acoustimass = 54* dB with Soundstop 30 dB = 56* dB	
Surface durability	Durability and dirt resistance. Wet-scrub resistance: Class 4				
Impact Resistance	Class 3A for Z and M edge	-	-	-	
Light reflection	87% light reflection >99% light diffusion				
Cleaning	Vacuum, damp cloth				
Hygiene	Stone wool provides no sustenance to microorganisms. Microbiological class M1 fulfilling the requirements of Zone 4 (very high risk) defined by NF S 90-351:2013.**				
Humidity and sag resistance	Up to 100% RH				
Reaction to fire	A1	A2-s1,d0			
Environment	All products are recyclable				
Clean Room	-	-	-	-	
Disinfection	N/A	-	-	-	
Air Pressure	-	-	-	-	

**Values obtained on the basis of theoretical analysis.*

*** Tested with: Methicillin Resistant Staphylococcus Aureus (MRSA), Candida Albicans, Aspergillus Brasiliensis, E.Coli, Bacillus cereus. M1 / zone 4 for the tested 5 pathogens. The particle elimination kinetics class is conform to CP(0,5)5 according to the norm NF S 90-351:2013*

	Rockfon Blanka® dB 46	**Rockfon® CleanSpace Essential**	**Rockfon® CleanSpace Pure**	**Rockfon Color-all®**
	α_w: 0.90 (Class A)	α_w: 0.95 (Class A)	α_w: up to 1.00 (Class A)	α_w: up to 1.00 (Class A)
	R_w = 25 dB	-	-	-
	D_n,f_{rw} = 46 dB with Acoustimass = 55* dB with Soundstop 30 dB = 58* dB	-	-	-
	Durability and dirt resistance. Wet-scrub resistance: Class 4	-	Enhanced durability and dirt resistance. Wet-scrub resistance: Class 5	-
	-	-	-	-
	87% light reflection >99% light diffusion	85% light reflection	86% light reflection	Colour-dependent
	Vacuum, damp cloth	Vacuum, damp cloth	Vacuum, damp cloth, high pressure cleaning (monthly, only applicable for A-edge installation)	Vacuum
	Stone wool provides no sustenance to microorganisms. Microbiological class M1 fulfilling the requirements of Zone 4 (very high risk) defined by NF S 90-351:2013.**			
	Up to 100% RH			
	A2-s1,d0	A1		A1, Color-all Mercury: Class A2-s1,d0 (EN 13501-1)
	All products are recyclable			
	-	ISO Class 4	ISO Class 3	-
	-	-	Resistant to using Hydrogen Peroxide Vapor disinfection without impact on aeration time Can withstand and will not be affected by UVC and Ozone disinfection	-
	-	-	-	-

Product Overview

Performance	Rockfon Eclipse®	Rockfon® Soundstop™	Rockfon® Tropic™	Rockfon® Universal™ Baffle
Sound absorption	A_{eq} (500 Hz) Rectangle up to 3.7 m^2/item	-	α_w: up to 0.95-1.00 (Class A)	A_{eq} (500 Hz) up to 0.93 m^2/ item
Direct sound insulation	N/A	R_w = 30 dB	N/A	
Room to room sound insulation	N/A	-	N/A	
Surface durability	N/A	-	N/A as product is part of the "mid range"	N/A
Impact Resistance	N/A	-	N/A	
Light reflection	87% light reflection (rear side: 79%) >99% light diffusion	-	86% light reflection	White (77%) Charcoal (4%) Color-all (Colour dependent)
Cleaning	Vacuum, damp cloth	-	Vacuum	Vacuum
Hygiene	Stone wool provides no sustenance to microorganisms. Microbiological class M1 fulfilling the requirements of Zone 4 (very high risk) defined by NF S 90-351:2013.*			
Humidity and sag resistance	Up to 100% RH			
Reaction to fire	A1 Rockfon Eclipse Rectangle 2360: A2-s1,d0	A1		A2-s1,d0
Environment	All products are recyclable			
Clean Room	N/A	-	-	N/A
Disinfection	N/A	-	N/A	
Air Pressure	-	-	-	-

** Tested with: Methicillin Resistant Staphylococcus Aureus (MRSA), Candida Albicans, Aspergillus Brasiliensis, E.Coli, Bacillus cereus. M1 / zone 4 for the tested 5 pathogens. The particle elimination kinetics class is conform to CP(0,5)5 according to the norm NF S 90-351:2013*



We are your partner towards sustainable development

Sustainability sits at the heart of our research and development. It's why we use natural stone, constantly work towards a lower carbon footprint in our manufacturing. While we are not in every country with our Rockcycle solution yet, we are expanding our recycling service across Europe and Asia.

Many property developers have started to choose building materials that can contribute to sustainable construction. Building certifications like LEED, BREEAM, DGNB, or WELL are growing in popularity, and luckily our products can help you earn points in these schemes.

Do you know that stone wool is a fully recyclable building material that can be recycled repeatedly without any degradation in quality?

Rockfon can both recycle our own old stone wool ceiling tiles and cut offs from installation, plus upcycle wet felted mineral fibre ceiling tiles from other manufacturers. We help make a meaningful contribution to a greener planet.

Visit our webpage for more information about our takeback scheme.



Rockfon sees sustainability as an imperative, driving us to reimagine acoustic solutions and their place in modern interiors.

Christian Klinge, Innovation Director at Rockfon





Be part of making the world sound better to everyone

Rockfon is part of ROCKWOOL Group and we are the world's leading acoustic company — and our mission is to keep things quiet.

We're the shh in productive data centres

Every day we are inspired to innovate with acoustic solutions that help people think concentrate and enjoy life more. Our acoustic solutions do more than reduce noise; they're also resistant to dust and static electricity, ensuring that the accumulation of static electricity is prevented. Additionally, they satisfy the most stringent fire safety and hygiene requirements.

We're here to help

We have 22 offices and 7 manufacturing facilities worldwide and we're on hand to help you find the right acoustic solutions for your data centre project.





Project Total Upstream Office Building, Denmark
Product Rockfon Blanka®

We are your partner towards sustainable development
Our high-quality products are made from natural stone. They work, they're beautiful and they last — until they're recycled to make more. And we provide all the necessary documentation to support you in creating an impactful data centre project.

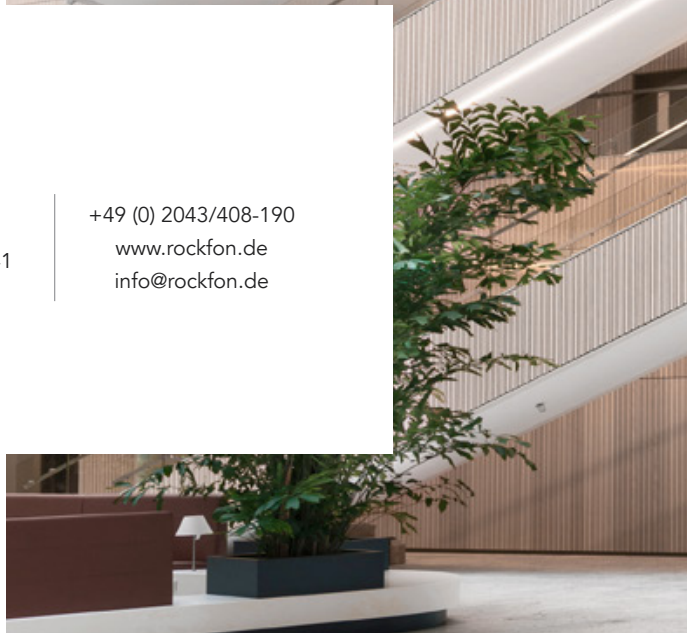
Our online resources
Explore our website for sound calculations, instruction videos, documents, and a comprehensive BIM library with objects compatible with ArchiCAD and Revitt. Speed up your design processes with this free to use support on: ***www.rockfon.de***

Let's connect

Give us a call whether you need advice on getting the right acoustic environment for your project, want to hear more about one of our products or just need technical support.
We're here to help.

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Sounds Beautiful

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