

Healthcare Spaces

Ceiling solutions for a better way to heal



Who we are

Create beautiful, comfortable and safe spaces with Rockfon® acoustic stone wool and metal solutions for ceilings.

As part of the ROCKWOOL group, Rockfon is a leading provider of acoustic stone wool ceiling solutions, metal ceiling panels and suspension systems. Providing a fast and simple way to protect people from noise, germs and the spread of fire is our way of making a constructive contribution toward a sustainable future. Our stone wool products are durable and easy to install, while offering aesthetic appeal.

Healing from the top down

While design in healthcare is a key issue, the challenges are many. Architects must take into consideration interior acoustics as well as strict air quality, hygiene and safety requirements. Whether it's a hospital, clinic or long-term care facility, administrators need cost-effective strategies to improve budgets, while enhancing the environment. Rockfon ceiling solutions improve patient and resident comfort and safety, while helping maintain caregiver and employee accuracy and productivity.

Thanks to design, acoustics, hygiene, sustainability and safety features, our products are ideal for healthcare interiors.

Acoustics

A sound solution to acoustic challenges

Healthcare settings are noisy. Alarms, paging systems, phones and rolling carts, along with staff and visitor conversations, all add up to a level of noise that affects patients' potential for recovery, employee performance and in the case of long-term care facilities, the well-being of residents. Sleep deprivation, alarm fatigue and privacy concerns are acoustic challenges that can be improved with Rockfon high-performance, sound-absorbing ceiling solutions.

Sleep deprivation: A wake-up call for better acoustics

For residents in an assisted living facility or patients in recovery, it's difficult to cope with a bad night's rest. The right acoustic environment helps to promote speedy recuperation, patient rehabilitation and general well-being. Highly sound absorbent, Rockfon ceilings improve inpatient care unit acoustics and help reduce the distracting sounds of voices, equipment and busy corridor footsteps and cart noise.

Alarm fatigue: Tuned out

When a caregiver becomes so accustomed to hearing medical equipment beeps constantly amidst all the other noise in a hospital, the sound becomes ambient and they ignore alarms—with potentially deadly consequences. When overall noise is reduced, the stress levels in healthcare staff are also reduced, allowing them to tune in to what's important.

"In hospitals, high ambient noise levels, as well as peak noise levels, have serious impacts on patient and staff outcomes ranging from sleep loss and elevated blood pressure among patients, to emotional exhaustion and burnout among staff."

- *Sound Control for Improved Outcomes in Healthcare Settings* (2007), pg. 1

"In one study, more medications were required by surgery patients post-recovery when noise levels were high (more than 60 dB(A))."

- *Sound Control for Improved Outcomes in Healthcare Settings*, pg. 3



Patient privacy

Room-to-room confidentiality

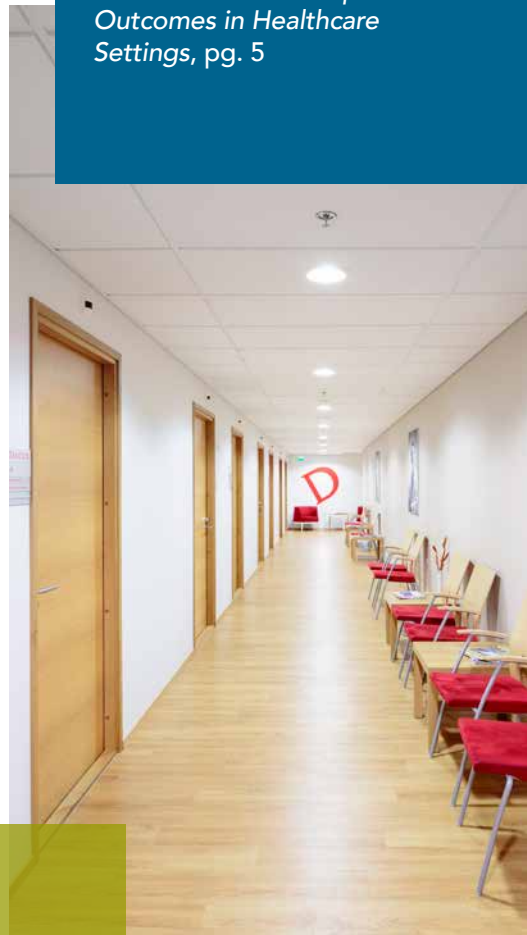
In post-examination or consultation rooms, it's important that the doctor and patient can talk in a quiet and private environment. Building materials should facilitate both speech intelligibility and the prevention of sound traveling into adjacent rooms. Giving patients privacy means giving them the dignity they need to get through their recovery.

Using Rockfon stone wool ceiling panels can improve scores on patient satisfaction surveys, such as Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). One of the lowest-scoring questions asks patients, "How quiet was the area around your room at night?"

Reducing the noise

At least three studies have shown that installing high-performance, sound-absorbing ceiling tiles and panels results in reduced noise levels...

- *Sound Control for Improved Outcomes in Healthcare Settings*, pg. 5



Safe environment

A safe place inside and out

For patients, staff and visitors, safety is of paramount importance in terms of hygiene, indoor air quality and risk of fire. Building materials must combine durable surfaces with good hygienic properties (like mold and mildew resistance), be easy to clean and disinfect, and maintain basic functional and aesthetic characteristics. Rockfon Medical range ceiling panels are easy to clean, offer protection from fire and humidity, and are Methicillin Resistant Staphylococcus Aureus (MRSA) resistant.

Fitted for fire safety

Evacuation in the event of a fire is almost impossible in intensive care units, operating rooms and neonatal departments, so fire prevention is key when designing hospitals. Non-combustible Class A materials help limit the spread of fire, and reduce the risk of smoke. All products from the Rockfon Medical range are Class A, the highest possible fire safety classification.

Clean walls, clean air

Some building manufacturers add biocides to their products to enhance the antimicrobial performance of their products to better perform in areas with high humidity or healthcare facilities. Rockfon has found no evidence of links between the use of biocides in building materials and healthier populations.

Furthermore, as with overuse of antibiotics, the overuse of antimicrobials could give rise to resistant bacteria¹ which could have a negative impact on health². Rockfon products do not use antimicrobial additives to increase the product's resistance or have any antimicrobial effect.³



¹ The Dirt On Antimicrobials, Bill Walsh, October 2014

² Healthy Environments: Understanding Antimicrobial Ingredients in Building Materials, Perkins + Will, March 2017

³ Rockfon paints contain small amounts of antimicrobials to secure the shelf life of the wet paints. These additives have no impact on the final product.

Indoor air quality

A breath of fresh air



Due to compromised immune systems, the patients in healthcare buildings and the elderly residents of long-term care facilities are often more susceptible to pollutants emitted from materials. This makes the need to improve indoor air quality critical. And it's not just patients and residents who are at risk; high levels of pollutants and contaminants can lead to loss of concentration, bad odors and irritation for staff, caregivers and visitors alike.

Stone wool is a great line of defense against these indoor health hazards. All Rockfon ceiling panels are GREENGUARD® GOLD Certified to GREENGUARD standards for low chemical emissions. This certification process takes safety factors into account to ensure a product is suitable for environments that may impact sensitive individuals, such as children and the elderly.

Rockfon solutions for medical buildings

| | Rockfon® Medical™ Standard | Rockfon® Medical™ Plus | Rockfon® Medical™ Air |
|---------------------------|---|---|--|
| Ideal for | Areas with essential hygiene and cleaning requirements, such as administration, waiting areas and nursing offices | Areas with more stringent hygiene and cleaning/disinfectant requirements in emergency rooms, delivery rooms, small surgery, radiology, laboratories and corridors | High-risk areas such as operating rooms, recovery rooms and intensive care, where air pressure is controlled to prevent the spread of infections |
| Bacteriological Class | B5 & B10 | B1 (best in class) | B1 & B5 (B1 best in class) |
| Clean Room Classification | ISO Class 5 | ISO Class 4 | ISO Class 3 |



Design & color

A healing, welcoming environment

Design is one of the most important considerations for healthcare and medical facilities. By incorporating different design elements, healthcare facilities can take a holistic approach to healing – moving away from harsh, clinical atmospheres to create warmer, more inviting environments.

The power of color

People experience a range of emotions in healthcare facilities. The right interior design and color can play an important role in soothing stressful emotions. For example, blue has been found to calm people in high-stress settings, while bright, strong colors like red and yellow stimulate and encourage activity. Color not only helps people orient themselves in a building, color contrast can improve signage comprehension – particularly in those with visual impairments.

Smart ceiling solutions

A ceiling, with consideration for the choice of panel edges and dimensions, can bring structure, order and clarity to any healthcare environment. Entrances are characterized by heavy traffic – incoming patients, visitors and staff. Halls need to be open and inviting, making concealed ceiling solutions and color important design parameters. The extensive range of colors, textures, edges and dimensions offered by Rockfon helps you create the right environment for the area you are designing.

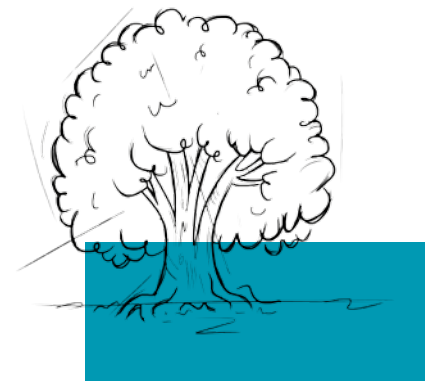
White walls are often associated with a clinical appearance and institutional settings. Adding color and an interesting ceiling design can make the environment seem less intimidating.

- *Application of Color in Healthcare*,
pg. 12

Color helps people find their way. Particularly those with visual impairment.

- *Application of Color in Healthcare*, pg. 22





Sustainability

Naturally resilient and essentially inexhaustible stone

Rockfon stone wool's primary raw materials are recycled materials and basalt rock (volcanic stone), a natural resource found in abundance around the world. Fully recyclable, almost all production wastes are recycled internally.

With virtually no organic content, Rockfon stone wool products are naturally resistant toward microorganisms and will not sag even in humid environments, allowing the panel to maintain its shape even in the most demanding environments.

Durable solutions, softer environmental impact

Being in the vanguard of the development of sustainable buildings means the healthcare sector is in a constant state of change. Hospitals and healthcare facilities face a number of challenges:

- Materials need to be available over longer periods to maintain visual continuity. Our products improve over time, while maintaining their appearance, allowing customers to mix and match new and existing ceiling solutions.
- Under constant harsh cleaning, ceiling panels must be able to retain their functionality. Rockfon Medical surfaces are easy to vacuum and clean with a damp cloth.
- Ceilings require access to services hidden behind, particularly in corridors. Rockfon ceiling panels install quickly, are easily demountable and offer dimensional stability.

To meet their economic, environmental and social objectives, decision makers need to select a supplier, such as Rockfon, capable of providing durable, versatile ceilings made from a naturally renewable raw material with Environmental Product Declarations (EPD).



The minimum content of recycled material in a finished Rockfon ceiling panel is up to

42%



Case Study

Southmead Hospital & Rockfon

The \$568 million USD Southmead Hospital in England offers the very best healthcare facilities, and is one of the most environmentally friendly buildings of its size in the United Kingdom. Rockfon ceilings were chosen because they fulfilled the design criteria and met all the essential cleaning and hygienic demands of healthcare environments.

Maintaining patient confidentiality

Rockfon® Medical™ Plus offers excellent sound absorption, providing the necessary noise control to help create a calm environment where patients can recover in comfort, and to enable private conversations to take place without the distraction of unwanted sound.

Exceeding hygiene requirements

Rockfon® Medical™ Plus Bacteriological Class B1 exceeds the strict hygiene and cleaning requirements for accident and emergency rooms, operating rooms, washrooms and food service areas. The visible surface is covered with a white-painted, water-repellent fleece that is resistant to bacteria and mold growth, and is steam-cleanable.

Lighting up a room

Rockfon Medical panels have a light reflectance of 86%, adding to the light, airy feel the architect wanted for the hospital. This also helped to make efficient use of the available natural light and provided a uniform spread of light – critical in operating rooms and examination rooms.



Project: Southmead Hospital, England

Materials: Rockfon® Medical™ Standard and Rockfon® Medical™ Plus stone wool ceiling panels

Contractor: Carillion

Featured products

Patient and Resident Care Areas:

Rockfon® Medical™ Plus

Features & benefits:

- Can be cleaned with diluted solutions of ammonia, chlorine, quaternary ammonium and hydrogen peroxide
- Can be cleaned and disinfected effectively by steam cleaning
- Bacteriological class B5 and B10 (MRSA)
- Low particle emissions ISO Class 4 for better air cleanliness
- Best sound absorption (NRC = 0.90)
- Available in square lay-in and square tegular

Applications:

- Treatment room
- Consulting room
- Patient area
- Laboratory

Rockfon® Medical™ Air

Features & benefits:

- Can be used in areas where differential pressure is required to prevent infection spreading
- Can be cleaned with diluted solutions of ammonia, chlorine, quaternary ammonium and hydrogen peroxide
- Can be cleaned and disinfected effectively by steam cleaning
- Bacteriological class B5 and B10 (MRSA)
- Low particle emissions ISO Class 3 for better air cleanliness
- The rear side of the panel is covered by an airtight, high-performance membrane
- Best sound absorption (NRC = 0.90)

Applications:

- Operating room
- Laboratory
- Treatment room

Rockfon® Medical™ Standard

Features & benefits:

- Best sound absorption (NRC = 0.90)
- Can be easily cleaned with a vacuum or damp cloth
- Bacteriological class B5 and B10 (MRSA)
- Low particle emissions ISO Class 5 for better air cleanliness

Applications:

- Reception

Technical Spaces and Laboratories:

Rockfon® Hygienic Plus™

Features & benefits:

- Elegant, lightly textured, white surface
- Best sound absorption (NRC = 0.90)
- High fire performance
- High light reflectance (LR = 0.83)
- Available in square lay-in

Applications:

- Wet room
- Café
- Laboratory

Public and Common Areas:

Rockfon® Color-all™

Features & benefits:

- 34 exclusive colors organized in six themes
- Smooth surface
- Better sound absorption (NRC = 0.85-0.95)
- High fire performance
- Optimal design freedom due to the variety of edges (lay-in, tegular, concealed) and colors

Applications:

- Reception
- Café



Administration, Office and Staff Spaces:

Rockfon Sonar®

Features & benefits:

- Elegant, lightly textured, white surface
- Best sound absorption (NRC = 0.90 - 0.95)
- High fire performance
- High light reflectance (LR = 0.85)
- Optimal design freedom thanks to a large selection of edges (lay-in, tegular, concealed)
- Available in a variety of sizes and formats, including planks

Applications:

- Corridor
- Reception

Rockfon Sonar® dB

Features & benefits:

- Elegant, lightly textured, white surface
- Better sound absorption (NRC = 0.85)
- Good sound blocking (CAC = up to 43 dB)
- High fire performance
- High light reflectance (LR = 0.85)

Applications:

- Meeting rooms



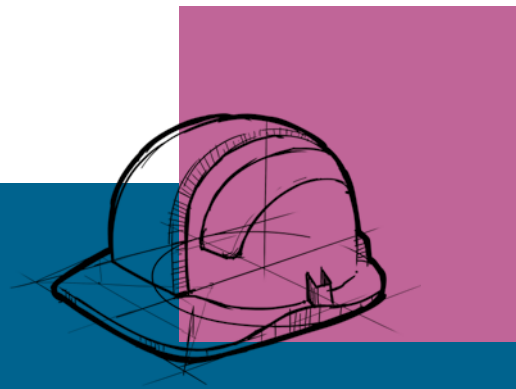
Understanding Industry Ratings

Noise Reduction Coefficient (NRC)

NRC is important in areas where patients rest, recover and converse, and where there is a high level of noise, such as emergency and waiting rooms. Most of our products have an NRC of 0.85 or above. NRC ratings classifications: 0.90 Best, 0.80 Better, 0.70 Good. Avoid using ceiling panels with NRC values below 0.70.

Light Reflectance (LR)

Ceilings are used to help reflect natural daylight into a room. LR indicates the percentage of light that white ceilings reflect. The LR and diffusion of a ceiling should be as high as possible.



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