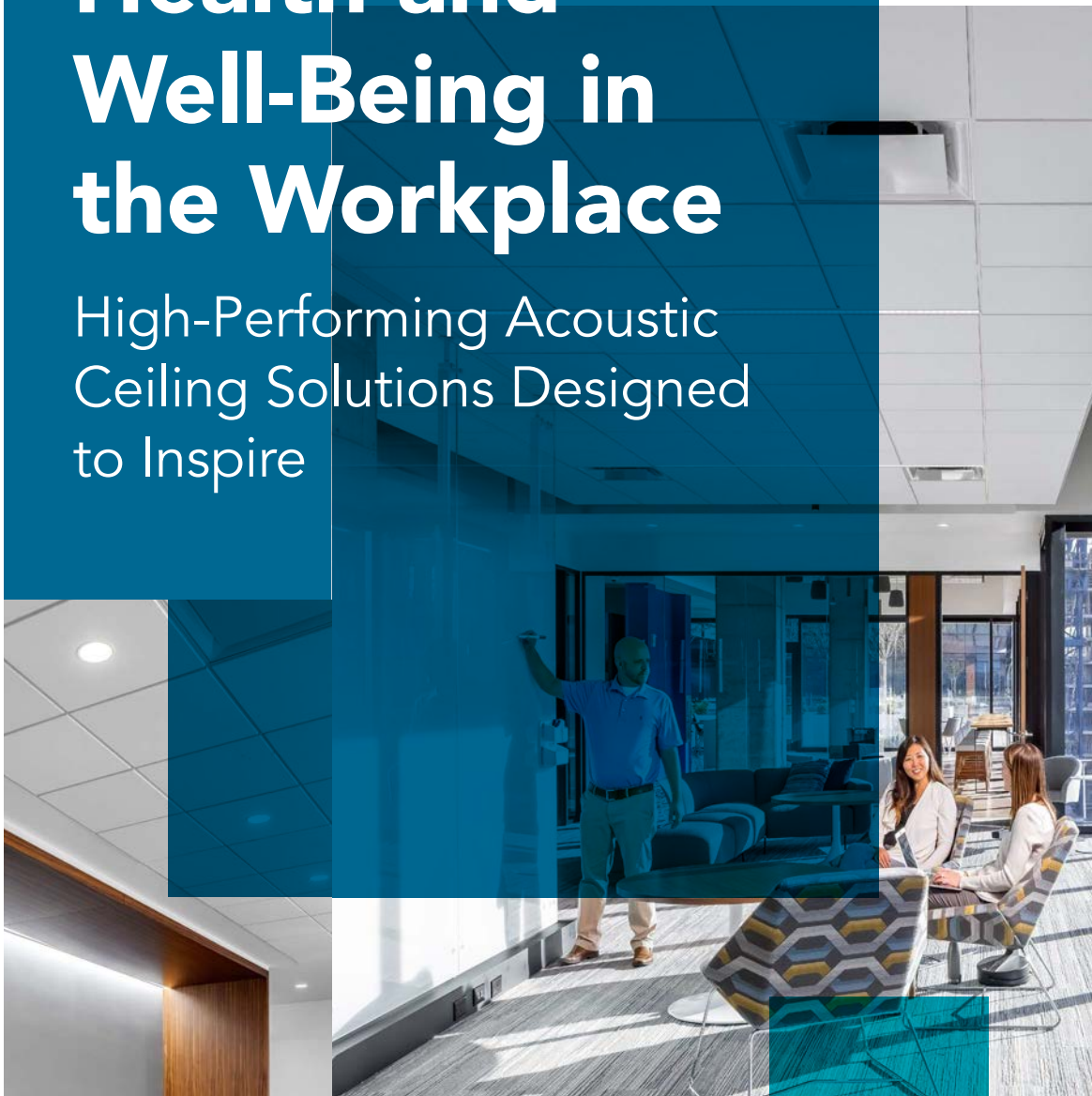


Office: Elevating Health and Well-Being in the Workplace

High-Performing Acoustic Ceiling Solutions Designed to Inspire



Ceiling Systems for High-Performing Workplaces

Modern workplaces are built with high-performing materials and are designed to inspire. Office design should contribute to employee health and well-being, collaboration and job satisfaction. With more than 90 percent of an organization's office based operating costs linked to employee efficiency¹, it's critical to create spaces that attract and retain talent. Office ceiling systems can have a positive effect on the bottom line².

Ceiling designs for offices need to optimize the acoustics through a high Noise Reduction Coefficient (NRC), enhance the design and appearance and support sustainability targets and goals. Designers and building owners face strict requirements like LEED, WELL and Green Globes™. Acoustic performance is one of the many metrics that must meet building standards and rating systems. With Rockfon stone wool and metal acoustic ceiling tiles, architects and designers have the freedom to create the perfect ceiling solution for both new construction and renovations that can help everyone achieve more.



Learn more about how to design ceilings that support employee well-being at rockfon.com/market-sectors/office/



Three Steps to Optimized Acoustics™

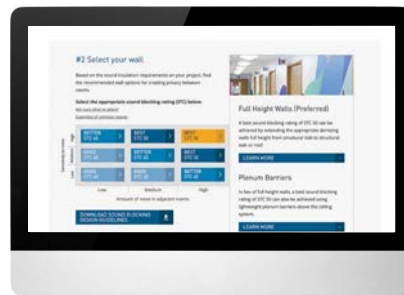
Optimizing acoustics in workplaces to improve productivity and job satisfaction requires design that combines sound absorbing ceilings with full-height walls. Rockfon is committed to helping create comfortable spaces with our Optimized Acoustics approach. This 3-step architectural and acoustical design process will help you determine the correct amount of sound absorption, noise blocking and background sound for your project.



Step 1:

Select the appropriate NRC rating for your ceiling panels

How loud are the sounds inside the room? For example, an open office might have a lot of noise, while a private office space might not. As the amount of sound absorption is increased inside a room, the reverberation time and unwanted noise level decrease. This improves speech intelligibility, privacy and reverberation so employees can perform at their best.



Step 2:

Select the appropriate STC rating for wall and floor/ceiling assemblies

How loud are the sounds outside the room? For example, is there a conference room or copy room just steps away? Sound blocking starts with your walls and floor slabs. If the adjacent room has a lot of people or equipment, you'll need a high STC rating to decrease the amount of noise getting through.



Step 3:

Ensure you have the proper background sound level

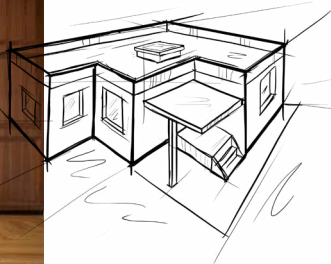
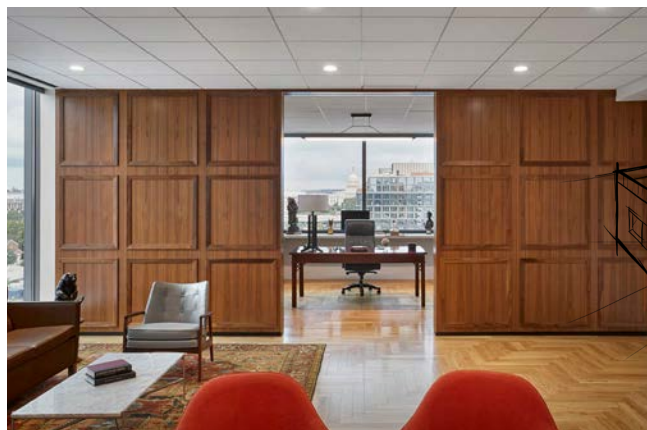
Some background sound is necessary to mask annoying or distracting noise and help achieve speech privacy. This background sound can be from music, nature, mechanical systems or electronic sound masking (or "white noise"). To ensure adequate sound privacy (SPP)³, you'll need to ensure the proper background sound is achieved.

Rockfon has created a set of interactive online design tools to help you determine the right performance ratings for your space, and provide you with the best product options and construction details. Start optimizing your acoustics at rockfon.pub/designyourproject

Acoustic Standards for Offices

Without appropriate acoustic design inside buildings, noise can seriously harm human health by causing short- and long-term health problems⁴. Studies show that performance, employee retention and health can all suffer from poor office and workspace acoustics. The table below compiles the absorption, isolation and background sound level requirements and standards from organizations such as LEED, WELL Building Standard and the Green Globes Assessment Protocol for Commercial Buildings. Rockfon's Optimized Acoustics™ will help ensure your design will provide office staff with comfortable and more productive working spaces, while adhering to industry standards.

Accepted Standards for Office Spaces*			
	Background Sound Requires mechanical system noise to be below a maximum permissible level	Absorption – NRC⁵ Requires sound absorbing finishes, such as acoustic ceilings, to control reverberation and noise	Wall Insulation – STC⁶ Requires full-height, STC-rated walls between rooms to prevent noise transfer
WELL Building Standard ⁷	✓ NC ¹² 35 Offices NC ¹² 40 Open Offices	✓ Ceiling NRC 0.90 Open Offices; Ceiling NRC 0.80 Offices & Conference	✓ NIC ¹⁴ 40 Offices NIC ¹⁴ 53 Conference
Leadership in Energy and Environmental Design (LEED) ⁸	✓ 35 dBA Office 45 dBA Open Plan	✓ Reverb < 0.60 Seconds	✓ STC 50 Executive Office STC 45 Standard Office
Green Globes Assessment Protocol for Commercial Buildings ⁹	✓ RC ¹³ 40 Open Office RC ¹³ 35 Private Office	✓ Ceiling NRC 0.90 Reverb 0.40 Open Offices	✓ STC 45 for Offices STC 45 for Conference Rooms
Government of Canada Workplace 2.0 Fit-up Standards	✓ ¹⁰	✓ ¹⁰	✓ STC 45 Up to Ceiling Plenum Barrier Above Ceiling
ASHRAE/USGBC Performance Measurement Protocols for Commercial Buildings	✓ NC ¹² 25 - 35 Offices NC ¹² 40 Open Offices	✓ Reverb < 0.60 Seconds	✓ ¹¹



*Every facility is different, and any single room may need to exceed the guidelines in this chart, depending on its purpose and its adjacent rooms. Values are current at the time of this publication but may change afterwards.

The Importance of Health and Well-being



Designers and builders should pay close attention to the materials chosen for the workplace. Products such as stone wool ceiling tile can help optimize light reflectivity, acoustic comfort, speech privacy and indoor air quality.

- The materials used should not provide nourishment for potentially harmful microorganisms
- Surfaces need the right sound absorption qualities to support employee performance
- Panels should be durable and provide easy access to the plenum for maintenance



Sound Absorption

Typically, when sound hits hard surfaces, the noise level in the room increases. However, stone wool's composition makes it highly sound absorptive, meaning it helps create an acoustically comfortable environment.



Fire Resistant

Because the core material is non-combustible, stone wool ceiling products resist fire. Rockfon stone wool products have Class A Fire Performance with a Flame Spread Index of 0, and a maximum Smoke Developed Index of 5. Their natural resistance means they are free from flame retardants, many of which have been shown to cause health issues.¹⁵



Moisture Resistant

Stone wool ceiling tiles are hydrophobic. Even in high humidity areas, the tile will not sag, warp or fall out of the grid due to moisture. This resistance makes Rockfon's stone wool ceiling tiles a durable solution for office spaces.



Air Quality

Volatile Organic Compounds (VOCs) are hydrocarbon compounds that have low boiling points, usually under 212°F (100°C), and evaporate easily, even indoors. They are harmful to people's health and are often present in building materials. At Rockfon, we only use low VOC materials, supporting overall indoor air quality and complying with green building standards.



The United States Environmental Protection Agency found that up to half of the schools in the U.S. have problems linked to poor indoor air quality.¹⁸ Rockfon offers a solution with products that are GREENGUARD Gold Certified for low VOCs.



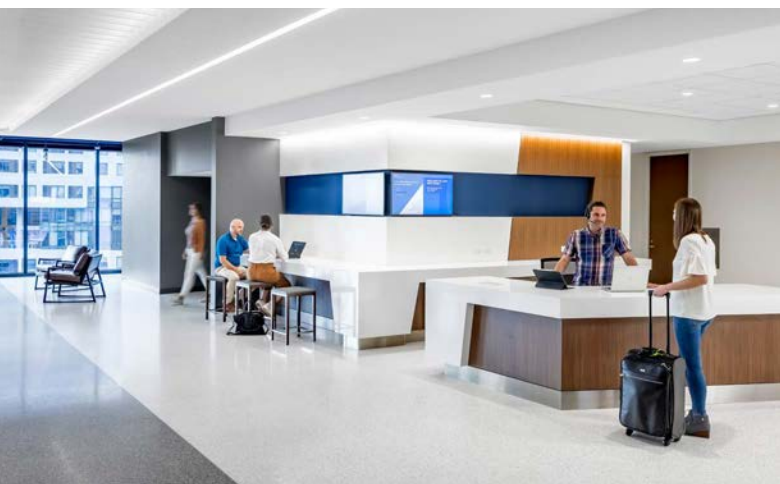
Aesthetics

Stone wool tiles deliver exceptional surface smoothness in Rockfon ceilings, enabling concealed, semi-concealed and visible edges, plus a number of design options such as color, shapes and sizes to help designers bring their vision to life.



Mold Resistant

Stone wool, made from naturally occurring basalt rock, does not provide sustenance for mold or bacteria. As a result, stone wool helps maintain indoor air quality without the addition of antimicrobials.¹⁶





Design That Promotes Productivity

Design can influence the way people perform. The product choices you make in surfaces, color, performance, purpose and size have a profound impact on how workers cooperate and achieve. Whether looking to use corporate colors, create visual interest or define a room's purpose, Rockfon has a ceiling solution. Stone wool, metal and wood ceiling panels can be used to create a beautiful space that doesn't compromise performance, durability or employee well-being.

Reinforce Your Organization's Culture

With expansive color choices and themes, Rockfon provides a palette that makes a positive impact on the mood of a space. Encourage harmony, infuse energy or add elegance with the Rockfon® Color-all™ line. Whatever your design demands, our colorful acoustic solutions to inspire your team and support your organizational culture.

50%

of employees said noise keeps them from being as productive as they could be in an open-plan office.¹⁷

Bring Great Things to the Surface

Select surface finishes that support the design while performing. Our ceiling products offer two surface selections: or smooth matte or microtextured. Choose the finish that's right for your design and performance standards.

Get That Innovative Edge

With a variety of edge options to select from, you can create a layout that boosts a room's performance and the people in it. Choose the concealed ceiling for a sleek, monolithic appearance, or create more structure with an exposed grid system. Baffles and islands work well for collaboration spaces or signature areas. From the subtle effect of a semiconcealed grid, to a minimalistic concealed grid, you can deliver the most effective ceiling solution without sacrificing sustainability or occupant health and well-being.

Find Your Perfect Fit

Make the most of your flexibility and creativity with numerous choices in tiles, plank sizes and patterns. Available in standard 2x2 and 2x4 formats or larger, Rockfon ceilings can help you better define areas and functions. Create a unique look by spanning planks across entire corridors, or enhance wayfinding with ceiling design.

The Importance of Acoustics

After surveying 65,000 people over the past decade in North America, Europe, Africa and Australia, researchers at the University of California Berkeley report that more than half of office workers are dissatisfied with the level of "speech privacy", making it the leading complaint in offices everywhere.¹⁸

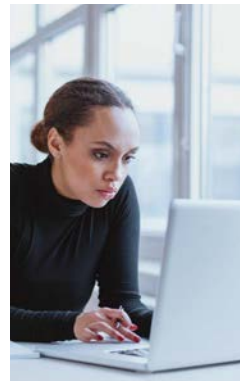
DID YOU KNOW ...

The U.S. Green Building Council's LEED v4.1 rating system¹⁹ recognizes the power of natural light as part of the Interior Lighting Credit under Lighting Quality.

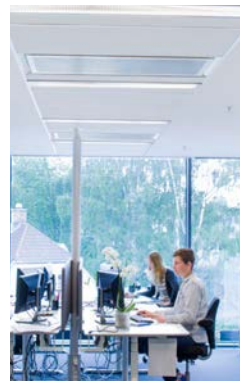
When auditory distractions are reduced or eliminated:



75%
of employees are more productive



57%
have increased motivation



49%
are happier at work overall

Statistics from the Udegy 2018 Workplace Distraction Report²⁰



High-Performing Office Spaces



Our ceiling tiles were created to enhance office environments and build better places to work. Across North America, Rockfon ceiling products contribute to sustainable workplaces that emphasize collaboration, productivity and employee well-being.

Anthem Technology Center

Anthem Technology Center's new LEED Silver-certified, 21-story, Class A, build-to-suit office tower in Midtown, Atlanta, serves as a hub for approximately 3,000 professionals dedicated to creating new capabilities that will enhance the consumer health care experience. Designed by Portman Architects, the 352,000-square-foot office is 100% leased to Anthem, Inc., which operates Blue Cross Blue Shield of Georgia.

Products:

Rockfon® Sonar®
(NRC 0.90 – 0.95)

Rockfon® Infinity™ Standard
Perimeter Trim

Chicago Metallic® 4000 Tempra™
9/16" Suspension System

Explore all stone wool ceiling products at rockfon.com/products/tiles-and-panels/



Pioneer Natural Resources Headquarters

Headquartered in Irving, Texas, Pioneer Natural Resources was ready for a new facility, but not a new hometown. The growing oil and gas company decided a custom-designed, newly constructed building would best suit its business needs, forward-thinking corporate culture, while bringing together its North Texas employees in one building. Corgan designed Pioneer's building interior to optimize acoustics and light reflectance with Rockfon ceiling systems.

Products:

Rockfon® Artic® (NRC 0.75)

Rockfon® Sonar®
(NRC 0.90 – 0.95)

Chicago Metallic® 4000 Tempra™
9/16" Suspension System

Explore all metal ceiling products at rockfon.com/products/grid-suspension-systems



National Association of Broadcasters Headquarters

The National Association of Broadcasters upholds the historic values of a free press in the modern, digital age. In 2020, the NAB celebrated 100 years of radio and ushered in the next century from its new headquarters at One M St. SE in Washington, D.C, designed by Hickok Cole. In April 2021, the project earned LEED® v4 Interior Design and Construction Silver certification.

Products:

Rockfon® Spanair® Torsion Spring Concealed Metal Panel

Rockfon® Tropic® (NRC 0.80)

Rockfon® Infinity™ Standard Perimeter Trim

Chicago Metallic® 4500 Ultralite™ 9/16"

Explore all stone wool ceiling products at rockfon.com/products/metal-ceilings/



Gensler Tampa, FL Office

Global architecture, design and planning firm, Gensler, selected Rockfon's ceiling systems for its new location in Tampa, Florida. The firm's unique workspace spans two floors and 8,702 square feet of the renovated Rivergate Tower, doubling the square footage of Gensler's previous Tampa location. Acoustic ceiling panels and baffles support the goals of flexibility and collaboration in the open office concept.

Products:

Rockfon® Multiflex™ Fibril Baffles

Chicago Metallic® 1200 9/16"

Explore Rockfon's full suite of products at rockfon.com/products/



Read more case studies at rockfon.com/ceiling-case-studies/

Sustainable Spaces with Maintenance in Mind

Rockfon's stone wool ceilings stand the test of time. Their contribution to acoustic comfort, indoor air quality and recycled content helps buildings meet sustainability and wellness initiatives, such as the U.S. Green Building Council's LEED® v4.1 requirements, and the International WELL Building Institute Standard. Cleanability, combined with moisture resistance, makes them a durable and low-maintenance upgrade from traditional ceilings.

Workplaces are now, more than ever, reaching their sustainability goals with the help of building materials that improve maintenance and operations. We're proud our ceiling tiles can play a role in this evolution.

We are dedicated to contributing to a sustainable future during every step of our process—from sourcing to production to logistics.



38,000x

There is 38,000 times more volcanic rock produced each year than the amount we use in our stone wool products



UP TO 51%

51% of our stone wool tile is made of recycled content



100%

Our metal ceiling systems are 100% recyclable



Technical Notes

1. World Green Building Council, *Health, Wellbeing & Productivity in Offices The next chapter for green building - Key Findings*

2. Inspired by You – Open Plan Offices (Rockfon)

3. SPP is Speech Privacy Potential, the metric used to measure the degree of speech privacy in closed and open spaces.

4. Source: World Health Organization, Regional Office for Europe, *Summary of growing evidence of the impact of hazardous environments on human health.*

5. NRC is Noise Reduction Coefficient, the metric used to describe the sound absorbing capability of an architectural surface material or finish. It is measured in a laboratory per ASTM C423.

6. STC is Sound Transmission Class, the metric used to describe the sound blocking capacity of an architectural assembly. It is measured in a laboratory per ASTM E90 and ASTM E413.

7. Values are from the WELL Building Standard v1. The version 2 pilot is currently under public review. Values shall be updated once version 2 has been finalized. Absorption is for ceilings and are minimums. Additional wall absorption is also required. Isolation values are for when sound masking is not used.

8. LEED v4.1 references the acoustic criteria in the 2018 version of the FGI Guidelines.

9. The Green Globes Assessment Protocol for Commercial Buildings (ANSI-GBI 01-2019) can be downloaded at thegbi.org/ansi.

10. The standard refers to “acoustic ceilings” being typical, but does not require a specific performance level. It also refers to HVAC noise control, but does not require specific performance levels.

11. The protocol has “Advanced Performance Methods” that deal with speech privacy and sound isolation, but specific performance requirements are not provided. It refers users of the protocol to the “applicable regulations or guidelines for each country.”

12. NC is Noise Criterion, one of several methods of specifying maximum permissible noise levels for building mechanical, electrical, plumbing and conveying systems.

13. RC is Room Criterion, one of several methods of specifying maximum permissible noise levels for building mechanical, electrical, plumbing and conveying systems.

14. NIC is Noise Isolation Class, a metric used to describe the sound blocking capacity of architectural components that make up constructed rooms combined. As such, NIC oftentimes better represents what building occupants will perceive. It is measured inside the building per ATSM E336 and ATSM E413.

15. Source: *Flame Retardants*, National Institute of Environmental Health Sciences

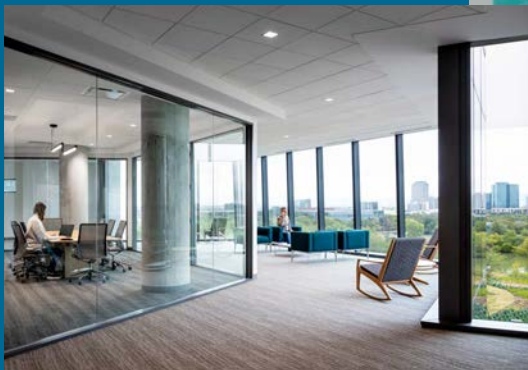
16. Source: Perkins+Will, and the Healthy Building Network, *Top 10 Things to Know About Antimicrobials*

17. Source: GSA Public Buildings Service, *Sound Matters: How to achieve acoustic comfort in the contemporary office*

18. Source: *New York Times*, May 2012

19. Source: LEED v4.1 rating system selection guidance. United States Green Building Council (USGBC)

20. Statistics from the *Udemy 2018 Workplace Distraction Report*



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