CertainTeed Ceilings

decoustics® Ecophon® Gyptone® PERFORMA®

EDUCATION

For healthier, better learning environments.

CertainTeed
SAINT-GOBAIN

Achieve more in the classroom with Environmental Acoustics™ design.

Excessive background noise from HVAC systems, neighborhood traffic and classroom equipment all contribute to rising sound levels, which have been documented to interfere with the learning process and affect student performance. Studies show that better classroom acoustics can improve reading scores and enhance the overall educational experience for both students and teachers. We believe the solution is clear – effective **Environmental Acoustics™** research and design.

From basic high-performance panels to premium, customizable systems, CertainTeed Ceilings offers a full spectrum of choices in ceiling and wall systems for complete acoustical solutions. These include unique forms to bring your distinctive design to life, easy-to-install panels in a wide range of profiles and textures, and sustainable options promoting indoor air quality – all delivering superior acoustical performance.

Our industry expertise enables us to meet and often exceed the specific needs, codes and regulations set forth by the educational institute, including the newest Leadership in Energy & Environmental Design (LEED®*) v4 Building Design and Construction for Schools. Our wide array of acoustical ceiling and wall panels can help you create acoustically sound environments where students of all ages can communicate, learn and thrive – and teachers can focus on keeping them engaged.

▲ Ecophon® Focus™ Dg

◀ Performa® Fine Fissured

Many CertainTeed products meet the classroom acoustic prerequisite included in LEED v4 for Schools that requires a noise reduction coefficient of 0.70 or higher for the ceiling (or a combination of acoustic wall panels and ceiling finishes).

* LEED is a registered trademark of the U.S. Green Building Council.

Effective Environmental Acoustics™ Design Creates:

- Appropriate acoustics, resulting in enhanced student auditory perception
- Greater speech comprehension, leading to improved language development
- Fewer distractions, resulting in enhanced concentration
- Better student reading scores
- Reduced teacher absenteeism due to vocal fatigue
- Higher teacher retention when classrooms are pleasant, effective places to work

Environmental Acoustics™ design means improved learning and test scores, more satisfied teachers.

As much as 60 percent of all classroom activities involve spoken communication and listening. With so much riding on the spoken word, the need for intelligible communication without noise interruption is clear. Effective Environmental Acoustics™ research and design enhances the education environment, improving the learning experience and making teacher-student communication more meaningful. In fact, many research studies have analyzed the effects of noise and reverberation in the classroom and found that excessive background noise and reverberation impedes learning by interfering with speech communication. When acoustics are improved, student test scores improve, especially for word recognition and reading.

When classroom environments are designed to control and reduce noise, teachers experience less vocal strain and fatigue and take fewer sick days. Meaningful verbal exchanges with students increase, and teachers express greater satisfaction with their work. The well-designed classroom becomes a positive factor in recruiting and retaining teachers.

Increasing classroom productivity through Evidence-based Design.

The Acoustical Society of America (ASA) was instrumental in creating the current standard for good acoustical characteristics for classrooms and other learning spaces. These have been adapted into building codes across the country. Research has shown that adhering to these standards makes the classroom experience more productive and enjoyable, and can result in reduced teacher turnover.

Challenge	**Auditory Perception**
Evidence-based Links to Noise Disturbance	Classrooms in the United States typically have speech intelligibility ratings of 75 percent or less, meaning every fourth spoken word is not understood.[1]
Solution	If speech intelligibility in a classroom is less than 90 percent, acoustical treatments should be implemented to reduce reverberation and/or improve signal-to-noise ratio.[2]

Challenge	**Language Development**
Evidence-based Links to Noise Disturbance	Children who develop language skills in poor acoustic environments may develop long-term speech comprehension problems.[1]
Solution	Extraneous noise makes it difficult for children to hear and understand teachers.[1] Sound-insulating and sound-absorbing materials can reduce noise disturbances.[3]

Challenge	**Reduced Concentration**
Evidence-based Links to Noise Disturbance	Inappropriate levels of classroom noise and/or reverberation can compromise not only speech perception but also reading scores, spelling ability, behavior, attention and concentration in children with normal hearing.[4]
Solution	Acoustic comfort means teachers and students can hear one another easily. Noisy ventilation systems are eliminated, and the design minimizes the amount of disruptive outdoor and indoor noise affecting the classroom.[5]

1. Ceilings and Interior Systems Construction Association, "Acoustics in Schools," September 2009
2. Acoustical Society of America, "Classroom Acoustics," asa.aip.org/classroom/booklet.html
3. Ecophon Acoustic Bulletin, March 28, 2011
4. Joseph Smaldino, "Students and Soundwaves: Strategies to Promote Good Classroom Acoustics," *The ASHA Leader*, www.asha.org/publications/leader/2008/080923/f080923b/
5. www.epa.gov/iaq/schooldesign/highperformance.html

Extraneous noise makes it difficult for children to hear and understand teachers.[1] Sound-insulating and sound-absorbing materials can reduce noise disturbances.[3]

Gyptone® BIG™ Line 6

Challenge	**Speech Recognition**
Evidence-based Links to Noise Disturbance	Poor acoustics in larger classrooms found in many post-secondary education settings can compromise speech recognition for students.[6]
Solution	College-age students experience improved speech recognition performance when the ANSI S12.60-2002 standard is met.[6]

Challenge	**Voice Endurance**
Evidence-based Links to Noise Disturbance	Loud or reverberant classrooms may cause teachers to raise their voices, leading to increased teacher stress and fatigue. Teachers speaking in noisy classrooms may be at risk for voice impairment.[1]
Solution	If the teacher-student configuration is fixed, beneficial reflections can be obtained with sound-reflecting surfaces placed above the lecturer, sometimes extending over the audience, on the ceiling or on sidewalls; also, the back wall is often made sound absorbing.[7]

Challenge	**Teaching Conditions**
Evidence-based Links to Noise Disturbance	Teachers cannot effectively compensate for excessive classroom reverberation by raising their voice levels.[8]
Solution	High-performance classrooms are designed to be pleasant and effective places to work. Such environments become positive factors in recruiting and retaining teachers and in improving their overall satisfaction with their work.[5]

6. "The Effect of Room Acoustics and Sound-Field Amplification on Word Recognition Performance in Young Adult Listeners in Suboptimal Listening Conditions," *American Journal of Audiology*, Vol. 17, June 2008
7. ANSI Standard S 12.60-2002
8. "The Impact of Classroom Acoustics on Scholastic Achievement," International Commission on Acoustics, www.icacommission.org/Proceedings/ICA2001Rome/5_05.pdf

Gyptone® BIG® Sixto 65™ and Ecophon® Solo™ Circles

Environmental Acoustics™ Case Study: New York School of Visual Arts

Challenge: Remodel the 5,000-square-foot space for the institute's new MFA Design for Social Innovation Department to maximize speech intelligibility, while containing sound in a 55-seat radial auditorium with audio-visual capabilities.

Influences: The overall floor plan, which encompassed the auditorium, also included a combination of classrooms and open spaces. While quality of sound within the auditorium was important, containing the sound was of equal importance. Adding sound absorption without detracting from the look of the space emerged as a critical design component.

Solution: Gyptone® BIG™ Sixto 65, a large-format perforated gypsum acoustical panel, was used for the horizontal band around the auditorium to create a sound-containment solution for the space. Ecophon® Solo™ free-hanging fiberglass ceiling clouds were hung in place of a suspended ceiling and configured for easy access to HVAC/mechanical equipment. In the editing suite, CertainTeed Silent FX™ noise-reducing gypsum board and Adagio™ fiberglass-mineral fiber ceiling panels were used. Ecophon® Focus™ E high-density fiberglass ceiling panels were specified for their high sound absorption and light reflectance in faculty offices and a study area. With CertainTeed wall and ceiling products, the project team was able to deliver aesthetic excellence and a good acoustical strategy, resulting in an effective learning environment.

To learn more about this acoustical solution, view the video at CertainTeed.com/idea-center/case-studies/ceilings

Students installing Ecophon® Texona™ Wall Panels

Environmental Acoustics™ Case Study: Temple University Department of Architecture

Challenge: Improve acoustics and reduce the reverberation time (RT) within the classroom to enable students and teachers to hear each other clearly and communicate more effectively.

Influences: The noise level in the classroom caused professors and students to repeat themselves in order to be heard or understood. Noise from nearby spaces also infiltrated the classroom, adding to the reverberation of voices and ambient noise. The presence of an overhead sprinkler system dictated that any type of ceiling solution for acoustical issues was not an option.

Solution: Architectural students were involved in defining the problem and determining a design solution. A CertainTeed representative spoke to the class about acoustical design and the influence of RT on acoustic quality. A design solution was recommended that included a colorful selection of Ecophon® Texona™ wall panels. The superior sound absorption of the high-density fiberglass panels, which were installed by the students, made a dramatic difference in the acoustical properties of the classroom. Acoustic testing confirmed that the RT was 41% higher prior to the installation of the wall panels. The introduction of Ecophon® wall panels into the noisy environment enabled students and faculty to communicate more effectively during classroom activities.

To view a video of this case study, see CertainTeed.com/idea-center/case-studies/ceilings

Ecophon® Focus™ E

Ecophon® Texona™ Wall Panels

We have the ideal solution for every campus, classroom and educational setting.

Performa® Fine Fissured High NRC

K–12 Core Learning Spaces

- Excellent sound absorption and reduced reverberation
- Enhanced speech intelligibility
- Complementary sound absorption/walls

Recommended Products	
Performa® VOC Compliant Symphony® *f*	$$
Performa® Fine Fissured High NRC	$$
Performa® Symphony® *m*	$$
Ecophon® Solo™ On-the-Wall	$$$
Decoustics® AirRenew® Wall Panels	$$$$

Ecophon® Focus™ Dg

Cafeterias/ Dining Areas

- Excellent sound absorption and containment
- Cleanable surfaces
- Enhanced speech intelligibility

Recommended Products	
Performa® Rx Symphony® *f*	$$
Gyptone® INSTANT	$$
Ecophon® Focus™ Dg	$$$
Decoustics® Quadrillo® Wood Ceilings	$$$$

Ecophon® Super G™

Gymnasiums

- Excellent sound absorption and reduced reverberation
- Impact resistance
- Moisture resistance

Recommended Products	
Performa® Tufcore™	$$
Gyptone® BIG™ Quattro 41	$$$
Ecophon® Super G™ Wall Panels	$$$$

Gyptone® BIG™ Sixto 65

Auditoriums and Performance Halls

- Enhanced speech intelligibility
- Controlled sound absorption and deflection/ceilings and walls
- Exceptional aesthetics

Recommended Products	
Ecophon® Solo™ Square	$$$
Gyptone® BIG™ Sixto 65	$$$
Decoustics® Linear Wood	$$$$
Decoustics® Claro® Wall Panels	$$$$

Ecophon® Texona™ Wall Panels

University Classrooms

- Enhanced speech intelligibility
- Excellent sound absorption and reduced reverberation

Recommended Products	
Performa® VOC Compliant Symphony® *f*	$$
Performa® Adagio®	$$$
Gyptone® BIG™ Quattro 41	$$$
Ecophon® Texona™ Wall Panels	$$$$

Decoustics® Quadrillo®

University Lecture Halls

- Enhanced speech intelligibility
- Controlled sound absorption and deflection/ceilings and walls
- Superior indoor air quality

Recommended Products	
Ecophon® Gedina™ E XL	$$
Gyptone® BIG™ Sixto 65	$$$
Decoustics® AirRenew® Wall Panels	$$$$
Decoustics® Quadrillo® Wood Ceilings	$$$$

Four diverse brands. Deep industry expertise. Maximize the performance of education spaces with the dynamic combination of our wall and ceiling panels.

Our collection of CertainTeed Ceiling and Wall Systems has the product breadth and technical performance standards to help you specify the ideal solution for your education facility projects. We've brought together four brands with a broad array of aesthetic, acoustic and performance properties, which make designing any acoustically enhanced education facility or classroom possible. With extensive experience in the classroom setting, we can help you account for the many variables involved in creating effective Environmental Acoustics™ design while also meeting aesthetic and sustainability demands.

Decoustics® Claro®

decoustics®

Decoustics frees you to bring your one-of-a-kind ceiling design to life.

Dramatic custom forms make even the most elaborate vision a possibility with ceilings from Decoustics. These precisely engineered ceilings offer a truly unique look, ideal for creating signature classrooms, lobbies and other elegant spaces. They meet the highest quality standards and allow your finished designs to soar. The only limit is your imagination.

- Extensive customization enables truly unique designs
- Broad range of wood options
- Unmatched acoustics and performance

Ecophon® Solo™ Square

Ecophon®

Achieve stunning, acoustically sound ceilings with Ecophon.

Ecophon ceilings offer countless designs and shapes, along with superior acoustical performance and functionality. Their ability to handle rigorous cleaning and disinfecting increases hygiene and contributes to healthier school environments. Plus, our exclusive 3RD technology combines a high content of recycled glass with a renewable plant-based binding agent, completely replacing traditional petroleum-based binding.

- Outstanding acoustical performance
- Extensive array of designs and shapes
- Wall-to-wall and non-continuous ceiling options

Environmental and Health Product Declarations Available!

With Environmental Product Declarations (EPDs) for 21 of our ceiling product families and participation in the pilot program for Health Product Declarations (HPDs), we are committed to environmental transparency. You can see the CertainTeed Ceilings sustainability story and view our EPDs and HPDs at CertainTeed.com/ceilings.

Gyptone® BIG™ Line 6

Gyptone®

Perforated gypsum panels allow for monolithic ceiling-to-wall designs.

Gyptone acoustical suspended ceilings and walls cover a broad spectrum of patterns, sizes and solutions. Contemporary visuals without visible breaks or joints provide excellent acoustics for classrooms, gymnasiums and auditoriums.

- Broad spectrum of patterns, formats and solutions
- Smooth, paintable surface simplifies installation and maintenance
- Recyclable and reusable gypsum and paper

Performa® Fine Fissured

PERFORMA®

A complete range of easy-to-install products, Performa offers best-in-class value and performance.

Performa ceilings meet your space's needs with a full range of attractive and acoustically sound design solutions. Extensive sizes, textures and edge details can fulfill a broad demand of performance and aesthetic requirements throughout the school environment. In addition to third-party certified EPDs, many of our Performa products are third-party tested and certified for recycled content and VOCs, meeting California's stringent protocols for formaldehyde.

- Easy-to-install sizes, textures, edge details and profiles
- The panels are also certified VOC compliant for formaldehyde emission (California Dept. of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010)

Performance based on science. Options for every design style. Advanced solutions for acoustical challenges include CertainTeed wall panels.

To complement our ceiling systems, we offer a collection of high-performance acoustic wall panels that reduce noise, increase speech clarity and minimize sound propagation. Architects and designers rely on CertainTeed wall panels to provide exceptional room acoustics, aesthetically appealing design and a healthy indoor environment. With extensive sizes, textures and materials available, we can help you enhance the acoustics of any educational space.

Decoustics® High Impact Resistant Wall Panels and Acoustic Ceiling Panels

decoustics®

Custom designs and a groundbreaking solution for creating healthier indoor environments.

Achieve highly customized curved and complex designs with these beautifully engineered wall panels. And improve indoor air quality with Decoustics fabric-wrapped wall panels featuring AirRenew® fabric technology – a technology that safely converts and breaks down VOCs and pollutants to actively improve indoor air quality. A wide array of colors, shapes and textures enables architects and designers to create masterful interior spaces. With Decoustics, designs are not only aesthetically pleasing, but also deliver superior acoustic performance ideally suited to schools, auditoriums and cafeterias.

- Extraordinary design flexibility
- Comprised of 28 to 35 percent post-consumer recycled material
- AirRenew® contributes to improved indoor air quality

Ecophon® Texona™ Wall Panels

Ecophon®

Create dynamic, functional interior spaces with superior sound absorption.

Ecophon® Texona™ and Super G™ Wall Panels are comprised of a high-density fiberglass core providing excellent sound absorption. This flexible selection of wall panels includes a variety of colors and is impact resistive. Create extraordinary designs that reduce noise, increase speech clarity and enhance the classroom experience.

- Exceptional selection of textures and colors
- Options available for high-impact areas
- Outstanding sound absorption

Sound-absorbing wall panels can mitigate noise buildup caused by excessive reverberation time in spaces such as cafeterias and auditoriums where students have to speak louder and louder to hear each other until there is a continuous roar.

"Classroom Acoustics," Acoustical Society of America

Gyptone® BIG™ Sixto 65

Gyptone®

Create beautiful, monolithic designs with sweeping wall-to-ceiling surfaces.

Gyptone wall panels meet the ever-burgeoning desire for monolithic wall-to-ceiling surface design. These eye-catching panels provide superior Environmental Acoustics™ design that results in fewer classroom distractions, better student learning and higher productivity. All panels are made with 80 percent post-consumer and 5 percent pre-consumer recycled content and can be fully recycled into the manufacturing of new gypsum products.

- Complementary Gyptone® ceiling panels available for each pattern
- Lower reverberation times, less flutter echo and improved speech intelligibility
- The panels are also certified VOC compliant for formaldehyde emission (California Dept. of Public Health CDPH/EHLB/ Standard Method Version 1.1, 2010)

Get inspired.

Read more case studies illustrating how CertainTeed Ceiling and Wall Systems can meet your design needs.

CertainTeed.com/idea-center/case-studies/ceilings

Get more.

CertainTeed Ceilings offers continuing education courses accredited by AIA and GBCI. Call your local CertainTeed Ceilings representative to schedule a course presentation in your office. Access **CertainTeed.com/continuinged** to see a full listing of CertainTeed courses.

Our Newest CEU in Education

Ceilings: Classroom Acoustics addresses acoustical matters in education environments, including noise sources in classrooms, speech intelligibility testing, academic studies on classroom acoustics, and sound absorption as it relates to LEED®* certification.

Need additional GBCI and AIA credits? We can help!

Acoustic Ceilings for the Eye, Ear, Mind – EC0004

Acoustic Ceilings in the Modern Office – BSS64

Publications for Product Life Cycle Assessment – BSS741

Ceilings in the Healthcare Segment – BSS738

*LEED® is a registered trademark of the U.S. Green Building Council.

CertainTeed
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Ceilings

DECOUSTICS®
ECOPHON®
GYPTONE®
PERFORMA®

You can Be Certain™ that CertainTeed Ceilings is your source for complete ceiling solutions and expertise.

No other manufacturer offers the depth and breadth of products that we do, for ensuring every space attains ideal Environmental Acoustics™ solutions, and every person can achieve his or her greatest potential. Our deep industry knowledge, continual innovation and sustainable efforts empower you to provide a sounder environment in any setting.

[BeCertain]™ Confidence worth building on.™

ASK ABOUT ALL OF OUR OTHER CERTAINTEED® PRODUCTS AND SYSTEMS:

ROOFING • SIDING • TRIM • DECKING • RAILING • FENCE • FOUNDATIONS
GYPSUM • **CEILINGS** • INSULATION • PIPE

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