



SOUND-RATED CONCRETE MASONRY UNITS (CMU)

Information Sheet for Architects, Engineers, Contractors & Building Owners

Manufactured by Brown's Concrete Products

What is Sound-Rated Concrete Block?

Sound-rated concrete masonry units (CMUs) are designed to reduce the transmission of airborne noise between spaces. Due to their mass and density, concrete block walls provide excellent acoustic performance, making them an ideal choice for commercial, institutional, industrial, and residential applications where privacy and noise control are important.

Concrete masonry walls can achieve Sound Transmission Class (STC) ratings exceeding 50, depending on wall thickness, density, grouting, finishes, and assembly design.

Why Choose Concrete Block for Sound Control?

Exceptional Noise Reduction

The mass of concrete masonry naturally blocks sound transmission more effectively than many lightweight wall systems.

Permanent Acoustic Performance

Unlike insulation products that may settle or deteriorate over time, the sound-control properties of concrete masonry remain consistent throughout the life of the building.

Privacy and Comfort

CMU walls help create quieter, more comfortable environments for occupants by reducing noise transfer between rooms and adjacent spaces.

Dual Performance

Concrete block walls often provide both fire resistance and sound control in a single wall assembly.

Understanding STC Ratings

Sound Transmission Class (STC) is a rating used to measure how effectively a wall reduces airborne sound transmission.

| STC Rating | Typical Performance |
|------------|-------------------------------------------------|
| 25-30 | Normal speech easily heard |
| 35-40 | Loud speech audible but difficult to understand |
| 45-50 | Loud speech barely audible |
| 50-55 | Most sounds effectively blocked |
| 60+ | Excellent sound isolation |

Building codes commonly require:

- STC 50 between dwelling units
- STC 50 between suites and common corridors
- Higher ratings for specialized applications



Typical Acoustic Performance of CMU Walls

| Wall Type | Approximate STC Rating* |
|----------------------------|-------------------------|
| 100 mm (4") Hollow CMU | 40-45 |
| 150 mm (6") Hollow CMU | 45-50 |
| 200 mm (8") Hollow CMU | 48-53 |
| Fully Grouted CMU | 50-60+ |
| CMU with Furring & Drywall | 55-65+ |

*Actual ratings vary depending on wall design, finishes, penetrations, and construction methods.

Common Applications

Sound-rated concrete block is commonly used for:

Institutional Facilities

- Schools
- Universities
- Hospitals
- Government buildings

Industrial Facilities

- Mechanical rooms
- Generator rooms
- Manufacturing areas
- Equipment enclosures

Commercial Buildings

- Offices
- Conference rooms
- Hotels
- Retail spaces

Multi-Residential Buildings

- Apartment buildings
- Condominiums
- Student housing
- Senior living facilities

Advantages of Sound-Rated CMU Construction

Noise Control

Reduces unwanted sound transmission between spaces.

Durability

Resists impact, moisture, rot, insects, and weather.

Low Maintenance

Acoustic performance does not degrade over time.

Security

Solid masonry construction offers superior privacy and security.

Fire Resistance

Many sound-rated CMU assemblies also provide excellent fire protection.

Factors Affecting Sound Performance

Wall Thickness

Thicker walls generally provide better sound attenuation due to increased mass.

Density

Higher-density masonry units typically offer improved acoustic performance.

Grouting

Partially or fully grouted walls can significantly increase STC ratings.

Surface Finishes

Drywall, resilient channels, insulation, and furring systems can further improve sound isolation.

Penetrations

Electrical outlets, ducts, pipes, and other openings can reduce acoustic performance if not properly detailed.



Best Practices for Acoustic Performance

To maximize sound control:

- Seal all joints and penetrations
 - Properly grout where specified
 - Avoid back-to-back electrical boxes
 - Use acoustical sealants where required
 - Follow tested wall assembly details
 - Coordinate mechanical and electrical penetrations carefully
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Frequently Asked Questions

Is concrete block better than wood framing for sound control?

Generally, yes. The mass of concrete masonry provides significantly better sound attenuation than most lightweight framed wall systems.

Does grouting improve sound performance?

Yes. Adding grout increases wall mass and often improves STC ratings.

Can concrete block meet residential code requirements for sound separation?

Yes. Properly designed CMU assemblies can easily meet or exceed typical STC requirements for residential construction.

Do I need insulation inside the block?

Not necessarily. Many CMU walls achieve excellent sound performance without cavity insulation, though insulation and additional finishes can further improve ratings.

Does painting affect sound performance?

No. Standard paints and coatings generally do not significantly impact acoustic ratings.

Why Specify Concrete Masonry for Sound Control?

- Excellent acoustic performance
- Permanent sound attenuation
- Fire-resistant construction
- Enhanced occupant comfort
- Durable and low maintenance
- Suitable for residential, commercial, institutional, and industrial projects
- Cost-effective long-term solution



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For product information, technical support, and project assistance, contact:

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