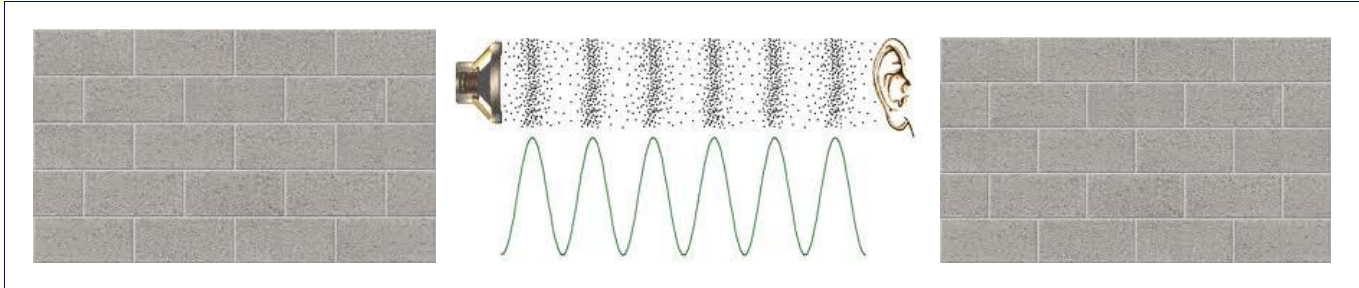


STC Ratings of Injection Foamed CMU Walls

CORE FOAM Masonry Foam Insulation® • INSULSMART Interior Foam Insulation® • INSULSMART MH®



Besides improving thermal performance, injecting aminoplast insulating foams by CfiFOAM, Inc. also improves the noise abating properties of concrete masonry walls. As the foams are injected under modest pressure, they flow to fill and seal nooks, crannies, cracks and penetrations; thus, sealing pathways through which unwanted noises might otherwise by-pass the attenuating properties of concrete masonry. Filling the core cells of CMU walls improves wall STC ratings by up to 6 decibels (dB), which is clearly noticed by building occupants.

Injecting CfiFOAM Improves STC Ratings of CMU Walls Because ...

- It is much more reliable to inject foam than to pour loose granular material e.g. sand and vermiculite.
- Injected foam won't settle over time as does loose granular material e.g. sand or vermiculite.
- Installation by fully trained crews employed by CfiFOAM, Inc. authorized contract installers instead of unskilled masons' helpers or day laborers.
- Seals around pipe and electrical penetrations which are often the main points through which unwanted noises are transmitted. Loose-fill materials tend to flow out through these openings, leaving concealed insulation voids inside CMU walls.
- During installation, aminoplast foam flows throughout the interior of the wall to fill internal nooks & crannies to seal holes & openings to optimize sound attenuating wall performance.

As new CMU designs emerge following the ASTM C90-11b change that allows reducing the webs between the shell faces, injecting CfiFOAM aminoplast foam insulation will benefit STC ratings to an even greater extent.

GENERIC CONCRETE MASONRY WALL STC RATINGS

| | <u>Cells Empty Wall Unpainted</u> | <u>Cells Foam-Filled Wall Unpainted</u> | <u>Cells Foam-Filled & Wall Painted One-Side</u> ⁹ |
|----------------------|---------------------------------------|---|---|
| 8" CMU Walls | 44-50 dB | 50-56 dB | 54-60 dB |
| 12" CMU Walls | 48-51 dB | 54-57 dB | 58-61 dB |

ASTM E90 test results have shown that STC ratings improve by 4 dB when one (1) side of Concrete Masonry Walls receives two (2) coats acrylic-latex paint.⁹

References:

¹ Acoustics.com: Est. STC = 0.18W + 40

² Ontario Concrete Block Association, "Sound Transmission Ratings"

³ NCMA TEK 13-1B (2008)

⁴ NCMA TEK 13-2A (2007)

⁵ National Research Council of Canada, "NRC #90" (1974)

⁶ Canadian Concrete Masonry Producers' Association, "Sound Properties & Design Details"

⁷ "Catalog of STC and IIC Ratings for Wall and Floor/Ceiling Assemblies"

⁸ Expanded Shale Clay and Slate Institute, "Sound Transmission Properties" Information Sheet No. 8.

⁹ *Sound Transmission Loss Through Concrete and Concrete Masonry Walls*, Portland Cement Association, 1978.