

# Superior Sound Control With GreenFiber Insulation

The three most important ratings used in building assembly testing are:

- STC (Sound Transmission Class) – used to rate air transported sound transmission between two areas separated by an interior wall or in comparing the sound transmission ratings of building assemblies using different materials:
- IIC (Impact Insulation Class) - used to rate the impact sound transmission of floor assemblies to areas below.
- OITC – (Outdoor-Inside Transmission Class) - used to rate the ability of an assembly to reduce sound from outside a structure.

As proven by independent test results, GreenFiber insulation is extremely effective in controlling sound transmission.

Numerous Qualities Combine To Offer GreenFiber's Sound-Reducing Effectiveness, Including:

- Inherent density of the closed cavity Spray Applied (Wall Spray) or Dry Dense-Packed installations
  - Ability to install easily around irregular construction details so as to completely fill cavity voids
  - Ability to stay in place, fitting snugly against framing members and even moderate slopes
- By completely filling spaces where sound can travel, GreenFiber insulation reduces sound that can pass through air gaps in batt-insulated walls. It is also ideal for filling spaces between floors, and for use in open attics.

## A Growing Concern

Limiting sound around powder rooms, media rooms, bedrooms, attic kneewalls, between floors of a multi-family structure, and any other part of the home where privacy is desired, is an important benefit to any home buyer. What's more, the growing trend in urban development, with high density multi-family construction, makes enhancing privacy more crucial than ever. Controlling sound transmission has never been more important. Not only does it ensure the peace and quiet homeowners desire while minimizing annoyances, but it may even have important effects on health. As stated by the World Health Organization (WHO), "The growth in noise pollution is unsustainable because it involves direct, as well as cumulative, adverse health effects." Among the problems potentially affected by noise, the WHO lists sleep disturbance, increased blood pressure and heart rate, cardiac arrhythmia, increased fatigue, depressed mood or well-being, increased stress hormone levels and decreased performance of cognitive tasks.

## Addressing The Issue

As concern for environmental noise inside and outside the home continues to grow, taking steps to mitigate its effects will be increasingly important. Clearly, architects, builders and contractors who best manage sound transmission will offer their clients a significant benefit. To this end, GreenFiber is pleased to provide technical information that can help provide this advantage, including details on wall assemblies and their STC/OITC ratings. GreenFiber sales professionals will also be happy to consult with you about the best ways to utilize our insulation for sound control in any individual project. Please see the reverse side for a comparison of how our cellulose and 4-inch Sound Control Batts perform in certain assemblies when tested at an independent laboratory. For additional information or consultation regarding your projects, please contact GreenFiber at [www.greenfiber.com](http://www.greenfiber.com) or 1-800 228-0024.

**800.228.0024**

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[www.greenfiber.com](http://www.greenfiber.com)

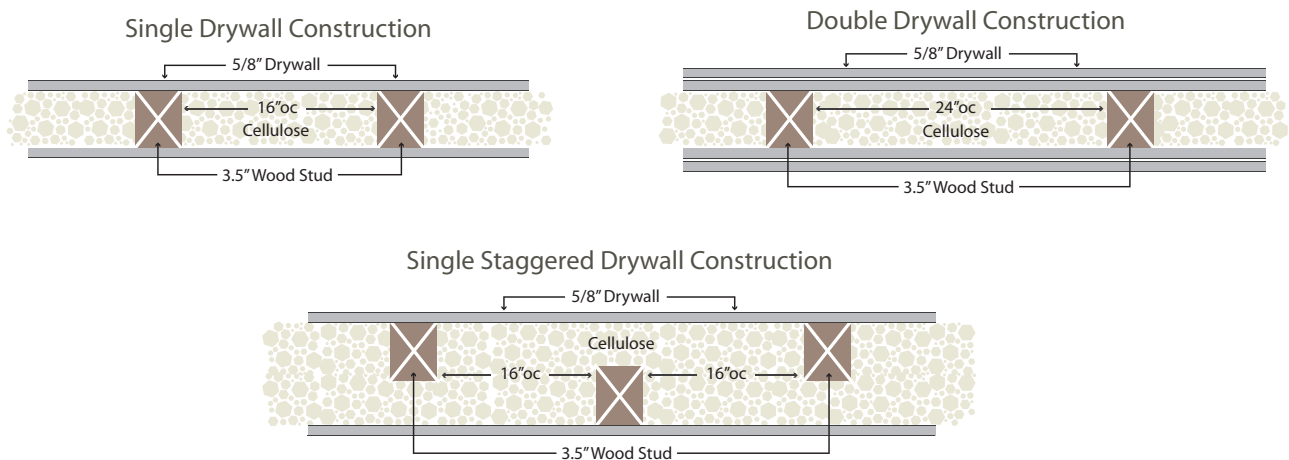
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# STC and OITC Ratings of ASTM E 90 Assemblies Insulated with Various Insulation Materials

STC	OITC	Insulation	Wood Dimension	Stud Spacing	5/8" Drywall Layers	Resilient Channels
30	23	None	2"x4"	16" oc	Single	None
33	25	4-inch Sound Control Fiberglass Batt	2"x4"	16" oc	Single	None
35	27	GreenFiber Wall Spray Cellulose	2"x4"	16" oc	Single	None
36	26	GreenFiber Dry Dense-Pack Cellulose	2"x4"	16" oc	Single	None
44	27	4-inch Sound Control Fiberglass Batt	2"x4"	16" oc	Single	One Sided
44	29	GreenFiber Wall Spray Cellulose	2"x4"	16" oc	Single	One Sided
35	25	None	2"x4"	24" oc	Single	None
38	28	4-inch Sound Control Fiberglass Batt	2"x4"	24" oc	Single	None
39	32	GreenFiber Wall Spray Cellulose	2"x4"	24" oc	Single	None
41	30	GreenFiber Dry Dense-Pack Cellulose	2"x4"	24" oc	Single	None
46	28	4-inch Sound Control Fiberglass Batt	2"x4"	24" oc	Single	One Sided
48	33	GreenFiber Wall Spray Cellulose	2"x4"	24" oc	Single	One Sided
45	31	4-inch Sound Control Fiberglass Batt	2"x4"	24" oc	Double	None
45	33	GreenFiber Wall Spray Cellulose	2"x4"	24" oc	Double	None
44	36	4-inch Sound Control Fiberglass Batt	Staggered	16" oc	Single	None
48	35	GreenFiber Wall Spray Cellulose	Staggered	16" oc	Single	None
49	37	4-inch Sound Control Fiberglass Batt	Staggered	16" oc	Single	One Sided
52	40	GreenFiber Wall Spray Cellulose	Staggered	16" oc	Single	One Sided

## Wall Construction Schematics



Architectural Testing, Inc., Report No. A2954.01-113-11

The acoustical tests were conducted in accordance with the following:

ASTM E 90-09 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions

ASTM E 413-04 Classification for Rating Sound Insulation

ASTM E 1332-90 Standard for Determination of Outdoor-Indoor Transmission Class

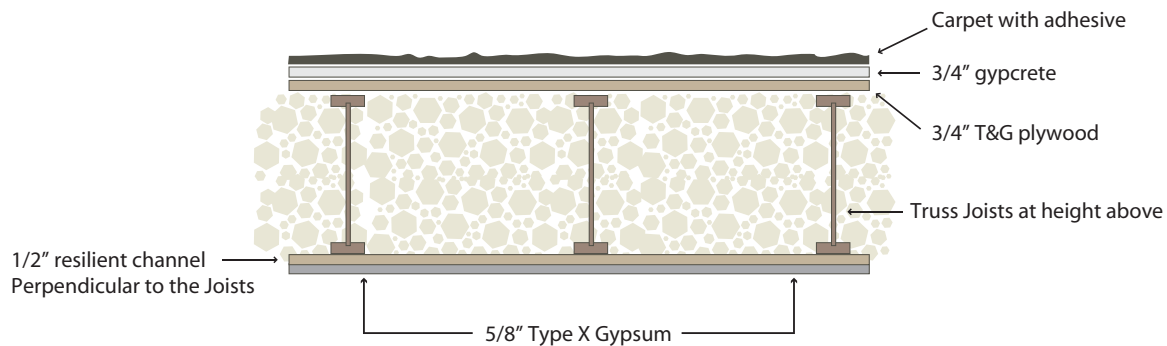
ASTM E 2235-04 Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods



# STC and IIC Ratings of Truss Joist Floor Assemblies Containing GreenFiber INS735 Insulation

## Truss Joist Floor Tests\*

Truss Height	Basic construction outline	STC	IIC
16"	16" Truss Joists, 24" oc, with 1/2" RC and 5/8" Type X Drywall below, and 3/4" T&G plywood and 3/4" 3310 gypcrete above and 3/8" padded carpet on top. Cavities filled with 4.0 pcf INS735.	53	56
12"	12" Truss Joists, 24" oc, with 1/2" RC and 5/8" Type X Drywall below, and 3/4" T&G plywood and 3/4" 3310 gypcrete above and 3/8" padded carpet on top. Cavities filled with 4.0 pcf INS735.	54	53



Architectural Testing, Inc., Report Nos. B5535.01-113-11 and B5323.03-113-11

The acoustical tests were conducted in accordance with the following:

ASTM E 90-09 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions

ASTM E 413-04 Classification for Rating Sound Insulation

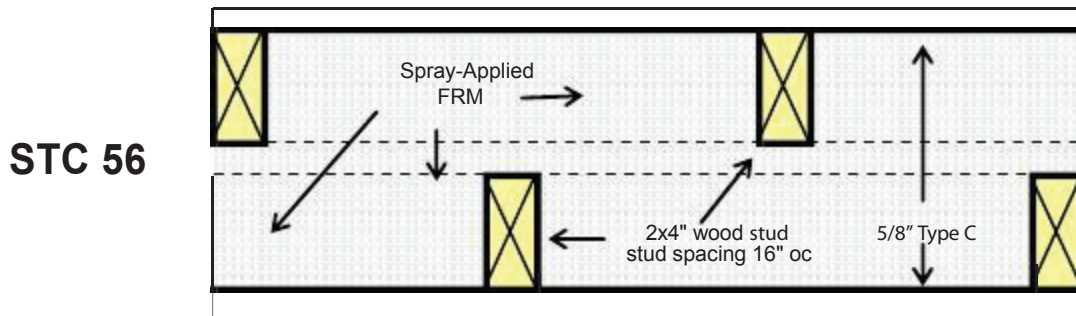
ASTM E 492-09 Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine

ASTM E 989-06 Standard Classification for Determination of Impact Insulation Class



# STC Rating for Underwriters Laboratories Laboratories (UL) U370 Using GreenFiber FRM

UL U370 Schematic



Test Conducted by Riverbanks Acoustical Laboratories, Report No. RAL-TL06-199  
The acoustical tests were conducted in accordance with the following:  
ASTM E 90-09 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions  
ASTM E 413-04 Classification for Rating Sound Insulation

## GreenFiber Sound Test Data Policy

GreenFiber's policy is to publish data from ASTM E 90 tests where the full test area is used. GreenFiber will not publish undersized floor test data. In addition, when Transmission or Impact Class data is estimated, a base test Class will be identified and the basis for the estimation described. GreenFiber encourages anyone requiring STC, IIC and OITC data to request permission to obtain the underlying independent report to ensure that the tested data is meeting the code requirements in all respects. Failure to use a full scale assembly as required by ASTM E 90 will cause Class Ratings to be artificially inflated, and should be avoided as they may hide the fact that code sound reduction requirements are not being followed.

US GreenFiber (USGF) does not provide architectural, inspection, engineering or building science services and disclaims any responsibility with respect thereto. USGF does not guarantee, warrant or attempt to determine whether a building structure, design or the use of material therein complies with any applicable codes, standards, guidelines or standards of workmanship. Adding insulation to any part of a home's envelope will cause changes in air, heat and moisture flow. The user must understand how the use of insulation will change the performance of a dwelling prior to installation. The user maintains the full and complete responsibility to comply with all codes, laws and regulations applicable to the safe and proper use, handling and installation of the product and should consult with an architect, engineer, building scientist, and/or a rater/energy specialist for all construction, design and performance related questions. The information contained herein is believed to be accurate as of the time of preparation. However, USGF makes no warranty concerning the accuracy of this information. USGF will not be liable for claims relating to the use of information contained herein, regardless of whether it is claimed that the information or recommendations are inaccurate, incomplete or incorrect.

