Carlisle's Acoustically-Rated Roof Assemblies

As the industry leader in warranted commercial roofing systems, Carlisle SynTec takes pride in its tradition of continuous innovation and world-class product offerings. Carlisle has more than 50 acoustically-rated roof assemblies, allowing building owners to choose a system that best suits their building's tenants, functions, and location.

ROOFS AND SOUND ABATEMENT

Sound can be disruptive, distracting, and disturbing. As a critical part of the building envelope, roofs serve as the primary line of defense against noise intrusion. Exterior noise sources are problematic if not addressed when designing a roof system. Sound attenuation has become a design criteria for building programs such as:

- LEED®/USGBC - Leadership in Energy and Environmental Design/ U.S. Green Building Council
- IGCC - International Green Construction Code
- FAA - Federal Aviation Administration
- HUD - Department of Housing for Urban Development
- CA Green Building Standard

ACOUSTIC RATINGS

There are two acoustic ratings designations typically referenced in requirements: Sound Transmission Class (STC) and Outdoor-Indoor Transmission Class (OITC).

STC measures the sound reduction that a partition can provide. OITC measures the transmission of sound between outdoor and indoor spaces. The STC/OITC ratings are shown for several systems on the following page.

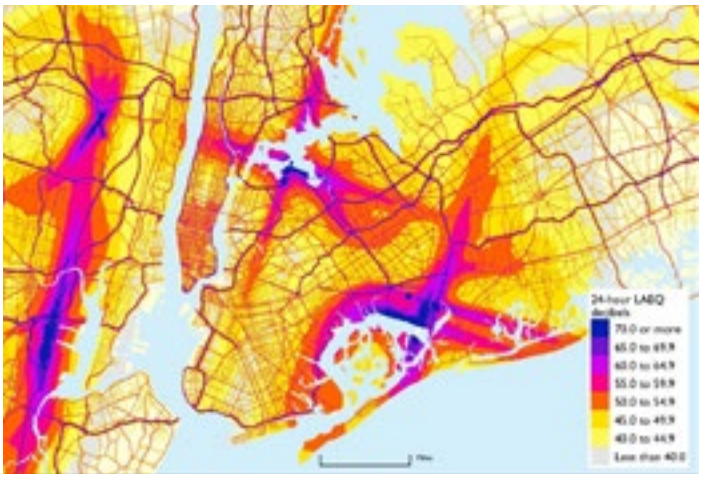
SOUND SENSITIVE BUILDINGS

Today, buildings are increasingly located in noisy, urban areas. Airports, bus stations, highways, and industrial areas are surrounded by low-slope, commercial buildings such as offices, hotels, apartments, schools and hospitals.

APPLICATION

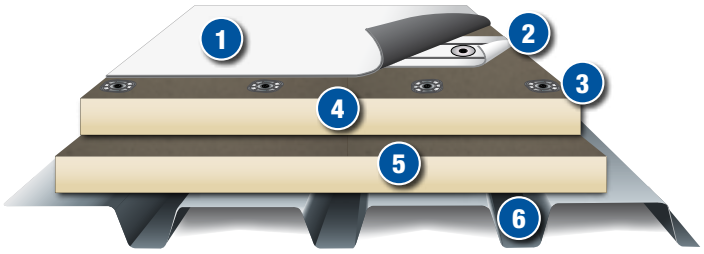
Should you consider noise pollution when designing a roof? The National Transportation Noise Map is a good starting point. As an example, please see the picture of New York City below. A score of 70 (blue area) is equivalent to the sound produced by a vacuum or garbage disposal.

AVIATION AND HIGHWAY NOISE FOR THE NEW YORK CITY METROPOLITAN AREA: 2014



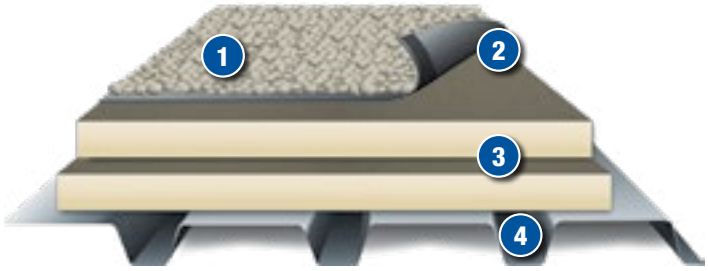
Scan code or click here to view the National Transportation Noise Map.

EXAMPLES OF ACOUSTICALLY-RATED ROOF SYSTEMS



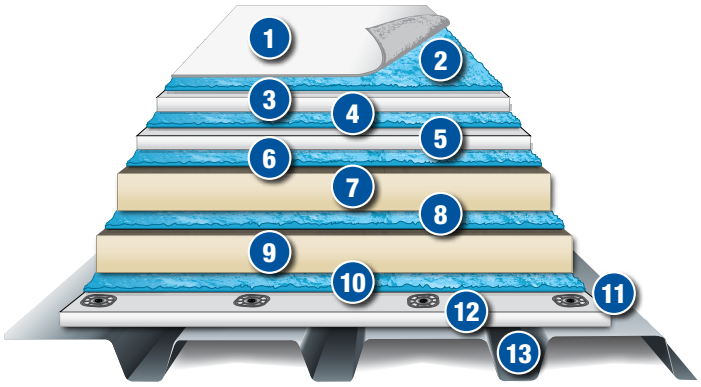
STC Rating = 25 | **OITC Rating = 21**

1. TPO Reinforced Membrane
2. Induction Welded Plates or 10"-wide RUSS with Membrane Securement Plates and Purlin Fasteners
3. Insulation Fasteners and Plates
4. 2" InsulBase® Polyiso Insulation
5. 2" InsulBase Polyiso Insulation
6. Steel Deck



STC Rating = 31 | **OITC Rating = 29**

1. Approved Ballast
2. EPDM Membrane with Factory-Applied Tape™
3. 2 Layers of 2" InsulBase Polyiso Insulation
4. Steel Deck



STC Rating = 41 | **OITC Rating = 33**

1. Fleece-backed PVC Membrane
2. Flexible FAST™ Adhesive
3. 5/8" Gypsum Roof Board
4. Flexible FAST Adhesive
5. 5/8" Gypsum Roof Board
6. Flexible FAST Adhesive
7. 2" Polyiso Insulation
8. Flexible FAST Adhesive
9. 2" InsulBase Polyiso Insulation
10. Flexible FAST Adhesive
11. Insulation Fasteners and Plates
12. 5/8" Gypsum Roof Board
13. Steel Deck

For help designing a Carlisle acoustically-rated roof assembly, contact your local Carlisle Manufacturer's Representative.

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REPRINT CODE: 610266 INS_CST-8536 - "Acoustically Rated Roof Assemblies Sell Sheet"