



SKYLITES • SUNROOMS • RAILINGS

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Sound Transmittance

The following is a summary of established guidelines that can be followed by a building designer to make an evaluation of a product to meet the minimum Sound Transmission Control (STC) required for exterior windows and/or skylights of a building subject to aircraft, highway traffic, or rail noise.

Local building codes may regulate construction of buildings with excessive exterior noise exposure, to meet a minimal STC rating. Unlike other fenestration value requirements, higher glass STC ratings indicated higher performing products. A STC requirement of 35 is common for construction near airports – therefore a STC rating of 35 or greater would qualify.

An STC of 35 would indicate a level of noise reduction such that otherwise loud noises would be reduced to a murmur. A rating of 45 begins 'sound proofing' where a majority of all sounds is blocked or greatly reduced.

For perspective, typical interior walls in homes (2 sheets of 1/2" drywall on a wood stud frame) have an STC of about 33. Adding absorptive insulation in the wall cavity increases the STC to 36-39, depending on stud and screw spacing.

STC ratings for windows and skylights are primarily a function of the glazing configuration as the glazing surface is what functions as the potential conduit to the interior space. The framing members of skylights in particular are less important due to the nature of the installation.

Table with 3 columns: Overall, Glazing Configuration, and STC. It lists various glass configurations and their corresponding STC ratings, ranging from 29 to 40.

Crystalite standard skylights featuring 1" IGU (Temp / Lam) units have an approx. minimum STC rating of 35.

Sound transmission loss tests are in accordance with ASTM E90. STC ratings have been determined from TL data using ASTM E413 Laboratory measured STC and OITC ratings for various glass configurations.

References

Monsanto Corporations Acoustical Glazing Design Guide Publication No. 8018B.
Acoustical Glazing Design Guide – Safflex
Glass Acoustical Information - Cardinal IG