

OPTIX ACOUSTIC SHEET SOUND TRANSMISSION



OPTIX ACOUSTIC Acrylic sheet offers sound loss characteristics that are equal to or better than those of glass.

Since OPTIX sheet is also more resistant to breakage, it can be used as a transparent sound barrier to reduce noise levels and increase safety at the same time.

Tables 1, 2, and 3 show noise reduction values and STC ratings for OPTIX sheet and other construction materials.

TABLE 1 - Noise reduction-dB(A) vs. sheet thickness (mm)

Properties	Method	Units	10mm	12mm *	15mm *	20mm *
Low frequencies predominant (100 - 400 Hz)	15	20	23	25	27	30
Flat frequency spectrum (400 - 2000 Hz)	25	27	27	28	34	35
High frequencies predominant (2000 - 5000Hz)	28	30	32	34	36	37

- Estimated from measurements of thicker sheets.

* Compliance for Road traffic noise reducing devices EN 14388

STC Rating

STC stands for Sound Transmission Class. Basically, STC ratings are an established way to average how much sound is stopped by something. STC ratings are used for windows, doors, walls and most building materials. For windows, STC ratings range from 18 to 38.

STC ratings are the ONLY way to accurately compare various noise reduction products. An STC rating is an instrument measurement of how much noise is stopped.

The STC ratings allow accurate 'apple to apple' comparisons. The STC rating is the average amount of noise stopped at 18 different frequencies, measured in decibels. STC ratings are a logarithmic scale similar to the earthquake Richter Scale, which means each number is significantly higher than the one before.

TABLE 2 - Noise Ratings of OPTIX® Sheet

Material Thickness	STC
OPTIX sheet 6 mm	24
OPTIX sheet 10 mm	25
OPTIX sheet 12 mm	26
OPTIX sheet 15 mm	29
OPTIX sheet 20 mm	30
OPTIX sheet 6 mm air space 3mm	38

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TABLE 3 - Comparison of Noise Reduction Characteristics of OPTIX Acrylic Sheet With Other Materials

Material Thickness	Approximate dB(A) noise reduction*
OPTIX sheet 3 mm *	25
25 OPTIX sheet 6 mm *	29
29 OPTIX sheet 10 mm *	30
30 OPTIX sheet 12 mm *	32
32 OPTIX sheet 15mm	33
33 OPTIX sheet 20mm	34
Glass 3 mm	25
Glass 6 mm	27
Plywood 25 mm	26
Steel 3 mm	37
Sheet lead 1.6 mm	38
Wood stud partition	38

Noise reduction obtained in enclosures depends on the completeness of the enclosure, tightness of joints, etc. The above as dB(A) noise reductions were obtained in a completely enclosed, tightly joined structure. These conditions are seldom achieved in the real world; however, even under more realistic conditions, the use of OPTIX sheet barriers can reduce noise levels enough to protect against heavy damage. The main purpose of this table is to indicate the relative noise reduction capabilities of commonly used materials in terms of dB(A).

* Estimated from measurements of thicker sheets.

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use are beyond our control. We recommend that the prospective user determines the suitability of our materials and suggestions before adopting them on a commercial scale.

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PDS422_OP_Acoustic_Sound_EU