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IMPACT PRODUCT SOUND TRANSMISSION COEFFICIENTS

| Product | STANDARD GLAZING | | Impact w/ 7/16" SGP |
|---------------|------------------|------------------|---------------------|
| | Impact | Impact-Insulated | |
| 2100 FD | 26 | 28* | 30 |
| 3200 Casement | 35 | 34* | |
| 4200/6200 FXD | 34 | 32* | |
| 7700 SH | 30 | 31* | |
| 8700 HRW | 30 | 27* | |
| 9200 SGD | 30 | - | |
| 9400 SGD | - | 22 | |
| | | * with Argon Gas | |

Understanding STC and STC Ratings

When discussing the reduction of sound vibration as it travels from one side of a wall to the other, we need to quantify and measure this loss. Do all construction techniques or soundproofing materials work equally well? Exactly how much sound is being reduced, and perhaps more importantly, what frequencies of sound are being affected? This is where understanding STC (Sound Transmission Class), and STC ratings, comes in.

STC is an integer rating of how well a building partition attenuates airborne sound. In the USA, it is widely used to rate interior partitions, ceilings and floors, doors, windows and exterior wall configurations (see ASTM International Classification E413 and E90).

In short, STC gives you a rough idea how much sound a wall, for example, might stop. STC is the most common sound reduction measurement in use. As common as this measurement is, it is quite limited and should not be totally relied upon for real world soundproofing expectations.

Let's first cover a few concepts.

Decibels: Written as dB in literature, dB is simply a measurement of how loud a noise is. 50dB is quiet while 140 dB is so loud that it can immediately injure your ears. Think of dB as the volume knob on your receiver.

Transmission Loss is a measurement of the dB (volume) difference on either side of a wall. Let's say we have a 100dB tone on one side of a wall. Pretty loud. We measure this same tone on the other side of the wall and find we have 75 dB. So we would say that at this tone or pitch, we have 25 dB Transmission Loss. 25 dB less sound energy made it through the wall to the other side.

Sound Pressure Levels & Loudness Sensation

| (dBa) | Source | Sensation |
|-------|--|---------------|
| 130 | Jet Aircraft at 100' Bass Drum at 3' Auto Horn at 3' | Physical Pain |
| 120 | Thunder, Artillery Nearby Riveter | |
| 110 | Elevated Train Discotheque | Deafening |
| 100 | Loud Street Noise Noisy Factory | |
| 90 | Truck Un-muffled Police Whistle | Very Loud |
| 80 | Cocktail Party Noisy office Average Street Noise | |
| 70 | Average Radio Average Factory | Loud |
| 60 | Noisy Home Inside general office | |
| 50 | Conversation Quiet Radio | Moderate |
| 40 | Quiet Home Private Office | |
| 30 | Empty Auditorium Quiet Conversation | Faint |
| 20 | Rustle of Leaves | |
| 10 | Soundproof Room | Whisper |
| 0 | Threshold of Audibility | |

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