# SOUNDPROOFWINDOWS

Easily Achieve **STCs from 48 to 57**

Passive Solar

## STC Results Chart

| Existing Window | Glass Configuration and thickness | Existing Window by itself | Air Space between Existing Window & Soundproof Window | | | |
|---|---|---|---|---|---|---|
| | | | 2" | 3" | 4" | 5" |
| **Glass** | **1/8"** | 27 | 43 | 48 | 49 | 52 |
| Glass | 1/4" | 30 | 46 | 51 | 51 | 54 |
| **Window** | **dual pane 1/8 over 1/8** | 26 | 45 | 48 | 49 | 50 |
| Window | dual pane 1/8 over 3/16 | 31 | 47 | 51 | 53 | 55 |
| Window | dual pane 1/8 over 1/4 | 32 | 49 | 52 | 54 | 55 |
| Sliding Glass Door | dual pane 1/8 over 3/16 | 30 | | | 50 | |
| Glass | 9/16 lami | 38 | 52 | 57 | 56 | 59 |

*Sleep like a baby . . .*
*enjoy peace and quiet*

# Improves U-factors

**Improves clear glass from 0.50 to 0.29**
**Low-e Glass from 0.29 to 0.21**

## Complete STC Test Results Inside

**Details on over 40 configurations**

# Solve Your Noise Problem . .

## Don't Try to Patch the Noise Problem—Fix It

Installing typical windows with an STC of 26-30 does not fix any noise problems. Upgrading to windows with an STC of 36-40 will help, but there will still be a noise problem. Noise may be reduced or even meet city requirements, but the noise problem will persist. With STC values from 48-57 you can truly solve the noise problem, and save more energy.

## Use ONE Window for Your Entire Project.

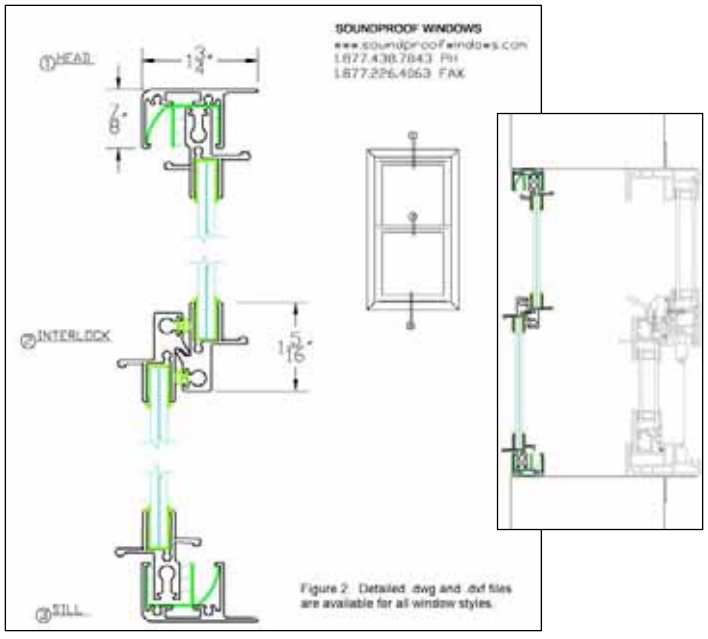
Stay with the primary windows you designed for the project. Just add our windows behind your preferred window for the best noise reduction available anywhere. Add our soundproofing windows to one area, one side, or the whole project. The outside appearance stays the same, but you can even change your mind later and soundproof other areas that were not originally designed to be soundproofed.

## Excellent for Historical Restorations

When you need to keep those single pane windows, just work on getting them operable and well sealed. Then add our windows and get the noise reduction you want and the energy savings you need.

## High Traffic Locations Can be Quiet.

Location. Location. Location. Now the noise problems of many locations can be solved and you can use those locations you had to walk away from before. Often the land cost savings will completely pay for the additional construction costs. Do you wish you had Soundproof Windows available to you on any of your previous projects?




**We have architectural drawings available for your convenience in .dwg, .dxf or .pdf format.**

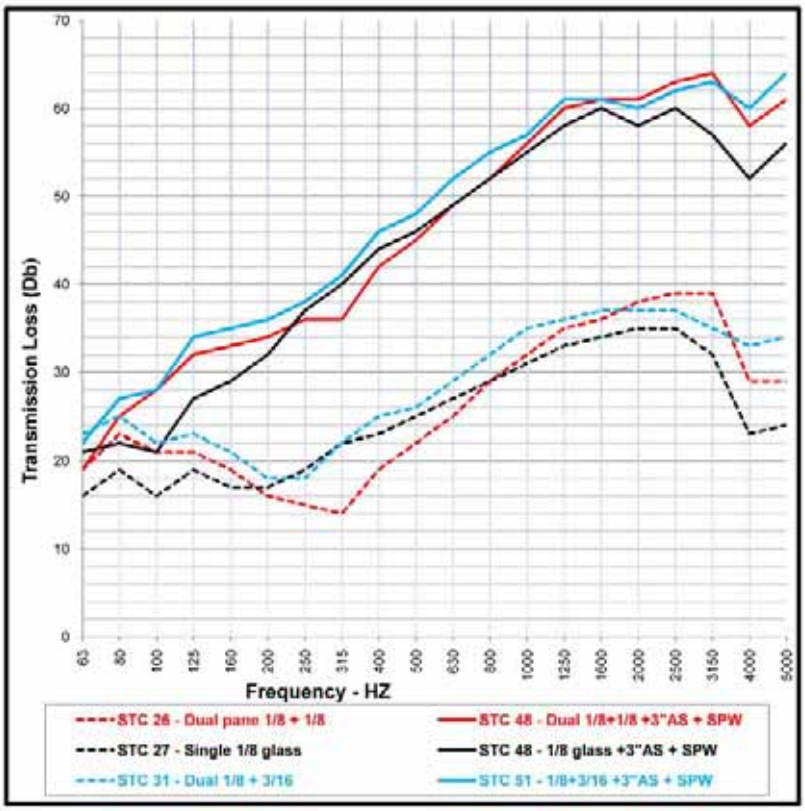



Figure 1. This line graph shows the STC frequency results from testing these six combinations. The dotted lines are the primary windows and the solid lines are those same windows with a Soundproof Window added behind it with a 3" glass to glass air space between them. For more results see the back page.

## Dual Pane vs. Single Pane—which is better?

The dotted red is dual pane (STC 26) and the dotted black (STC 27) is single pane. Not much difference. The myth that dual pane is better for noise comes mainly from the air leakage of the older single pane windows. The air leaks make all the difference. Different glass has different benefits at various frequencies, but as a whole, dual pane glass is not better or worse than single pane.

## Extensive Test Results For Your Reference

We have tested all the common window glass configurations paired with our Soundproof Window at air spaces from 2 inches to 8 inches. See the back page for the results of our sound testing. This can be an excellent reference source for current and future projects.

## Better Test Results Because Of Superior Design

We have designed our windows with one thing in mind—noise reduction. We designed from scratch rather than adapting from another window design. We designed custom parts. Our good test results happened because we have designed a superior noise reduction window. As an added benefit, our windows works great for energy savings by insulating the insulated windows.

# *Get the noise reduction you want...*

# . . . And Save More Energy

## Insulate Your Insulating Windows

Whatever your window or glass configuration may be, glass is simply a terrible insulator. Add our window and you will add insulation value to your windows. Convert a single pane to the value of a dual pane. Convert a simple dual pane into a good low-e equivalent window. Add our window behind a good low-e window and get unheard of performance in an untinted window.

## 99% UV Blockage

Since we use laminated glass 99% of UV radiation is blocked. This is a marked improvement over low-e glass, which typically blocks no more than 70% of the UV radiation.

## Excellent for Historical Restorations and Building Conversions

Historical preservation often means you cannot replace the glass currently in the windows. There are many scenarios where you must keep the original windows and glass. By adding our windows, you solve the insulation problem and the air infiltration problem common to older windows. You likely double the insulation value of the window and cut the air infiltration down by over 95%.

### LEED Referenced Energy Performance Requirements

| | | Northern | North Central | South Central | Southern | |
|---|---|---|---|---|---|---|
| 4.1 Good Windows **Prerequiste** | U-factor | 0.35 | 0.40 | 0.40 | 0.55 | |
| | SHGC | Any | 0.45 | 0.40 | 0.35 | |
| 4.2 Enhanced Windows **Optional, 2 points** | U-factor | 0.31 | 0.35 | 0.35 | 0.55 | |
| | SHGC | Any | 0.40 | 0.35 | 0.33 | |
| 4.3 Exceptional windows **Optional, 3 points** | U-factor | 0.28 | 0.32 | 0.32 | 0.55 | |
| | SHGC | Any | 0.40 | 0.30 | 0.30 | |
| Clear/Clear Dual Pane<br>Milgard Style Line Vinyl Window | U-factor | 0.49 | ⇨ | 0.29 | | Clear/Clear Dual Pane plus SOUNDPROOFWINDOWS |
| | SHGC | 0.63 | | 0.58 | | |
| Clear/Low-e Dual Pane<br>Milgard Style Line Vinyl Window<br>Low-e SuncoatMAX™ with argon | U-factor | 0.29 | ⇨ | 0.21 | | Clear/Low-e Dual Pane plus SOUNDPROOFWINDOWS |
| | SHGC | 0.30 | | 0.25 | | |

Passive Solar

*Notes:*

***Get the noise reduction you want . . .***

***and the energy savings you need.***

# Soundproof Windows STC Test Results

Sound Transmission Loss Data Details

Various windows and glass spacing combinations

| 1/3 Octave Band (HZ) | STC | OITC | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | Test Report Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1/8" Inch Glass** | | | | | | | | | | | | | | | | | | | | | | |
| 1/8 Single glass | 27 | 24 | 19 | 16 | 19 | 17 | 17 | 19 | 22 | 23 | 25 | 27 | 29 | 31 | 33 | 34 | 35 | 35 | 32 | 23 | 24 | TL08-287 |
| + 2"AS* + SPW* | 43 | 32 | 23 | 20 | 23 | 25 | 28 | 32 | 36 | 39 | 41 | 43 | 44 | 45 | 48 | 50 | 52 | 57 | 58 | 51 | 55 | TL08-306 |
| + 3"AS + SPW | 48 | 34 | 22 | 21 | 27 | 29 | 32 | 37 | 40 | 44 | 46 | 49 | 52 | 55 | 58 | 60 | 58 | 60 | 57 | 52 | 56 | TL08-288 |
| + 4"AS + SPW | 49 | 36 | 20 | 23 | 30 | 32 | 34 | 39 | 41 | 45 | 47 | 49 | 49 | 50 | 53 | 54 | 55 | 58 | 58 | 53 | 56 | TL08-307 |
| + 5"AS + SPW | 52 | 38 | 22 | 25 | 32 | 35 | 37 | 42 | 43 | 48 | 51 | 54 | 55 | 57 | 58 | 57 | 59 | 59 | 60 | 54 | 59 | TL08-289 |
| **1/4" Inch Glass** | | | | | | | | | | | | | | | | | | | | | | |
| 1/4 Single glass | 30 | 27 | 24 | 20 | 23 | 23 | 22 | 24 | 26 | 28 | 29 | 31 | 33 | 35 | 36 | 35 | 29 | 26 | 29 | 32 | 33 | TL08-292 |
| + 2"AS + SPW | 46 | 36 | 26 | 24 | 28 | 30 | 32 | 37 | 41 | 44 | 46 | 48 | 49 | 49 | 51 | 50 | 44 | 47 | 57 | 56 | 60 | TL08-305 |
| + 3"AS + SPW | 51 | 39 | 26 | 26 | 32 | 35 | 36 | 41 | 44 | 48 | 51 | 53 | 55 | 58 | 61 | 60 | 52 | 52 | 54 | 60 | 63 | TL08-291 |
| + 4"AS + SPW | 51 | 41 | 27 | 30 | 34 | 37 | 38 | 43 | 45 | 50 | 51 | 53 | 53 | 54 | 55 | 54 | 48 | 49 | 52 | 59 | 60 | TL08-304 |
| + 5"AS + SPW | 54 | 43 | 29 | 31 | 36 | 40 | 40 | 46 | 48 | 52 | 55 | 57 | 58 | 60 | 60 | 58 | 52 | 50 | 55 | 60 | 64 | TL08-290 |
| 1/4 + 2" AS + SPW65 | 51 | 39 | 27 | 27 | 29 | 39 | 38 | 45 | 44 | 48 | 49 | 49 | 49 | 52 | 56 | 57 | 52 | 56 | 60 | 62 | 62 | TL09-286 |
| 1/4 + 3" AS + SPW65 | 58 | 43 | 30 | 28 | 39 | 43 | 43 | 49 | 51 | 54 | 57 | 58 | 59 | 63 | 66 | 65 | 58 | 58 | 60 | 63 | 63 | TL09-285 |
| **Vinyl Dual Pane Window - 1/8" + 1/2" AS + 1/8" (Typical dual pane)** | | | | | | | | | | | | | | | | | | | | | | |
| Dual 1/8" over 1/8" | 26 | 21 | 23 | 21 | 21 | 19 | 16 | 15 | 14 | 19 | 22 | 25 | 29 | 32 | 35 | 36 | 38 | 39 | 39 | 29 | 29 | TL08-261 |
| + 2"AS + SPW | 45 | 36 | 25 | 24 | 29 | 30 | 31 | 33 | 34 | 39 | 42 | 46 | 49 | 52 | 55 | 58 | 58 | 61 | 63 | 58 | 60 | TL08-300 |
| + 3"AS + SPW | 48 | 38 | 25 | 28 | 32 | 33 | 34 | 36 | 36 | 42 | 45 | 49 | 52 | 56 | 60 | 61 | 61 | 63 | 64 | 58 | 61 | TL08-265 |
| + 4"AS + SPW | 49 | 41 | 27 | 32 | 34 | 36 | 36 | 39 | 37 | 44 | 47 | 50 | 52 | 54 | 57 | 58 | 59 | 61 | 62 | 58 | 59 | TL08-301 |
| + 5"AS + SPW | 50 | 42 | 28 | 32 | 36 | 38 | 38 | 41 | 38 | 46 | 49 | 53 | 56 | 58 | 59 | 60 | 61 | 62 | 65 | 60 | 63 | TL08-266 |
| + 6"AS + SPW | 51 | 43 | 28 | 32 | 37 | 39 | 39 | 41 | 39 | 47 | 50 | 53 | 56 | 57 | 58 | 60 | 60 | 61 | 63 | 60 | 62 | TL08-267 |
| + 8"AS + SPW | 53 | 45 | 30 | 35 | 39 | 42 | 42 | 44 | 41 | 50 | 52 | 56 | 52 | 55 | 57 | 59 | 59 | 61 | 64 | 61 | 63 | TL08-268 |
| + 3"AS + SPW65 | 53 | 41 | 29 | 27 | 37 | 40 | 40 | 42 | 41 | 46 | 49 | 52 | 54 | 55 | 61 | 65 | 66 | 66 | 66 | 60 | 60 | TL09-290 |
| + 4"AS + SPW65 | 54 | 43 | 30 | 30 | 39 | 42 | 41 | 44 | 42 | 48 | 51 | 53 | 56 | 58 | 60 | 61 | 62 | 64 | 63 | 59 | 60 | TL09-293 |
| **Vinyl Dual Pane Window - 1/8" + 7/16" AS + 3/16"** | | | | | | | | | | | | | | | | | | | | | | |
| Dual 1/8" over 3/16" | 31 | 26 | 25 | 22 | 23 | 21 | 18 | 18 | 22 | 25 | 26 | 29 | 32 | 35 | 36 | 37 | 37 | 37 | 35 | 33 | 34 | TL08-269 |
| + 2"AS + SPW | 47 | 37 | 26 | 25 | 30 | 30 | 32 | 34 | 39 | 43 | 45 | 48 | 51 | 54 | 58 | 59 | 58 | 60 | 64 | 59 | 62 | TL08-270 |
| + 3"AS + SPW | 51 | 40 | 27 | 28 | 34 | 35 | 36 | 38 | 41 | 46 | 48 | 52 | 55 | 57 | 61 | 61 | 60 | 62 | 63 | 60 | 64 | TL08-272 |
| + 4"AS + SPW | 53 | 42 | 28 | 31 | 36 | 37 | 38 | 41 | 44 | 48 | 50 | 53 | 55 | 57 | 60 | 59 | 60 | 60 | 61 | 63 | 64 | TL08-271 |
| + 5"AS + SPW | 55 | 44 | 30 | 32 | 37 | 39 | 40 | 43 | 45 | 51 | 52 | 55 | 57 | 59 | 60 | 60 | 60 | 61 | 62 | 62 | 65 | TL08-273 |
| + 6"AS + SPW | 56 | 44 | 30 | 31 | 39 | 41 | 41 | 44 | 46 | 52 | 54 | 57 | 58 | 58 | 61 | 63 | 62 | 61 | 63 | 63 | 64 | TL08-274 |
| + 8"AS + SPW | 57 | 46 | 32 | 35 | 40 | 43 | 44 | 46 | 47 | 54 | 56 | 59 | 55 | 56 | 59 | 60 | 60 | 61 | 64 | 63 | 65 | TL08-275 |
| **Vinyl Dual Pane Window - 1/8" + 3/8" AS + 1/4"** | | | | | | | | | | | | | | | | | | | | | | |
| Dual 1/8" over 1/4" | 32 | 26 | 27 | 23 | 25 | 22 | 19 | 21 | 21 | 24 | 27 | 31 | 33 | 35 | 37 | 37 | 36 | 37 | 37 | 34 | 35 | TL08-254 |
| + 2"AS + SPW | 49 | 38 | 27 | 24 | 32 | 32 | 33 | 37 | 39 | 43 | 46 | 49 | 52 | 56 | 59 | 59 | 56 | 60 | 65 | 60 | 63 | TL08-260 |
| + 3"AS + SPW | 52 | 40 | 27 | 27 | 34 | 36 | 36 | 40 | 41 | 46 | 49 | 52 | 54 | 55 | 58 | 59 | 57 | 61 | 61 | 63 | 64 | TL08-253 |
| + 4"AS + SPW | 54 | 43 | 29 | 31 | 37 | 39 | 39 | 43 | 43 | 49 | 51 | 54 | 56 | 58 | 61 | 60 | 59 | 61 | 62 | 64 | 65 | TL08-259 |
| + 5"AS + SPW | 55 | 44 | 30 | 32 | 38 | 41 | 41 | 45 | 44 | 51 | 52 | 56 | 57 | 57 | 59 | 59 | 58 | 58 | 63 | 62 | 65 | TL08-255 |
| + 6"AS + SPW | 54 | 44 | 30 | 32 | 39 | 41 | 41 | 46 | 45 | 51 | 53 | 56 | 57 | 56 | 54 | 53 | 54 | 56 | 59 | 59 | 62 | TL08-256 |
| + 8"AS + SPW | 54 | 46 | 31 | 34 | 41 | 44 | 43 | 47 | 46 | 53 | 55 | 58 | 54 | 53 | 53 | 51 | 52 | 56 | 59 | 60 | 63 | TL08-257 |
| **9/16" Commercial Laminated Glass 1/4" + .060PVB + 1/4"** | | | | | | | | | | | | | | | | | | | | | | |
| 9/16" Laminated | 38 | 34 | 29 | 25 | 29 | 29 | 28 | 31 | 33 | 34 | 36 | 37 | 38 | 38 | 35 | 37 | 41 | 43 | 46 | 48 | 50 | TL08-286 |
| + 2"AS + SPW | 52 | 41 | 29 | 28 | 35 | 37 | 38 | 43 | 47 | 50 | 51 | 52 | 52 | 50 | 49 | 55 | 60 | 63 | 64 | 63 | 62 | TL08-302 |
| + 3"AS + SPW | 57 | 44 | 30 | 31 | 38 | 41 | 42 | 47 | 50 | 53 | 56 | 58 | 58 | 59 | 59 | 63 | 64 | 65 | 67 | 68 | 67 | TL08-284 |
| + 4"AS + SPW | 56 | 45 | 30 | 34 | 39 | 43 | 43 | 48 | 51 | 54 | 56 | 57 | 56 | 54 | 53 | 59 | 61 | 63 | 65 | 63 | 62 | TL08-303 |
| + 5"AS + SPW | 59 | 47 | 31 | 36 | 41 | 44 | 45 | 50 | 52 | 56 | 58 | 60 | 60 | 61 | 59 | 62 | 62 | 66 | 68 | 68 | 67 | TL08-285 |
| **1/4" Glass (or 1/4 IGU- 1" overall) + .650 Laminated glass Studio Window Model ST65** | | | | | | | | | | | | | | | | | | | | | | |
| 1/4" +2.0"AS+ST65 | 54 | 41 | 29 | 27 | 34 | 39 | 40 | 44 | 47 | 51 | 53 | 54 | 50 | 53 | 64 | 67 | 62 | 64 | 68 | 66 | 66 | TL09-276 |
| 1/4" +3.0"AS+ST65 | 58 | 43 | 29 | 28 | 38 | 43 | 43 | 48 | 50 | 54 | 56 | 58 | 55 | 59 | 68 | 69 | 63 | 64 | 65 | 66 | 66 | TL09-278 |
| 1/4"IGU+2.0"AS+ST65 | 53 | 43 | 29 | 29 | 38 | 40 | 39 | 44 | 45 | 48 | 50 | 52 | 48 | 52 | 64 | 67 | 66 | 68 | 69 | 67 | 66 | TL09-277 |
| 1/4"IGU+3.0"AS+ST65 | 57 | 46 | 32 | 33 | 40 | 43 | 42 | 47 | 49 | 52 | 55 | 57 | 54 | 59 | 68 | 70 | 67 | 67 | 68 | 67 | 67 | TL09-279 |
| **Sound Studio Testing - All with .650 Laminated ST65 "live room" and .250 Lami ST25 "control room"** | | | | | | | | | | | | | | | | | | | | | | |
| 8.0" wall- both vertical | 62 | 49 | 34 | 36 | 43 | 46 | 47 | 52 | 54 | 58 | 60 | 61 | 60 | 63 | 66 | 67 | 67 | 67 | 68 | 66 | 66 | TL09-272 |
| 8.0" wall- ST65 slanted 3" | 61 | 47 | 33 | 34 | 42 | 46 | 46 | 51 | 53 | 57 | 59 | 60 | 59 | 62 | 67 | 66 | 66 | 66 | 67 | 66 | 66 | TL09-275 |
| 10.5" wall- both vertical | 61 | 49 | 33 | 36 | 43 | 47 | 48 | 53 | 55 | 58 | 60 | 62 | 60 | 62 | 62 | 66 | 63 | 63 | 62 | 60 | 58 | TL09-264 |
| 10.5" wall- ST65 slanted 5" | 60 | 48 | 35 | 34 | 43 | 46 | 46 | 51 | 53 | 57 | 60 | 61 | 60 | 63 | 65 | 64 | 63 | 62 | 62 | 59 | 57 | TL09-267 |
| **Sliding Glass Doors (SGD)** | | | | | | | | | | | | | | | | | | | | | | |
| Standard SGD + 4"AS + SPW-SGD | 50 | 39 | 25 | 26 | 32 | 36 | 32 | 40 | 40 | 49 | 51 | 56 | 60 | 62 | 62 | 61 | 62 | 60 | 61 | 57 | 62 | TL08-309 |

***SPW=** Soundproof Window

**AS =** Air Space

**SPW25=** .250" Laminated heavy frame w/rollers

**SPW65=** .650" Laminated glass model

Vinyl windows and door are Milgard Style Line Series. IGU's were all 3/4" overall thickness. The Milgard SG Door was 1/8 + 3/16 IGU. Milgard units were tested at time of these tests and are shown above. The Milgard and Soundproof Window(SPW) windows were all 72"x48" operable sliding windows. Testing was done by Western Acoustical Labs (WEAL) - a fully accredited independent testing laboratory in California.

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