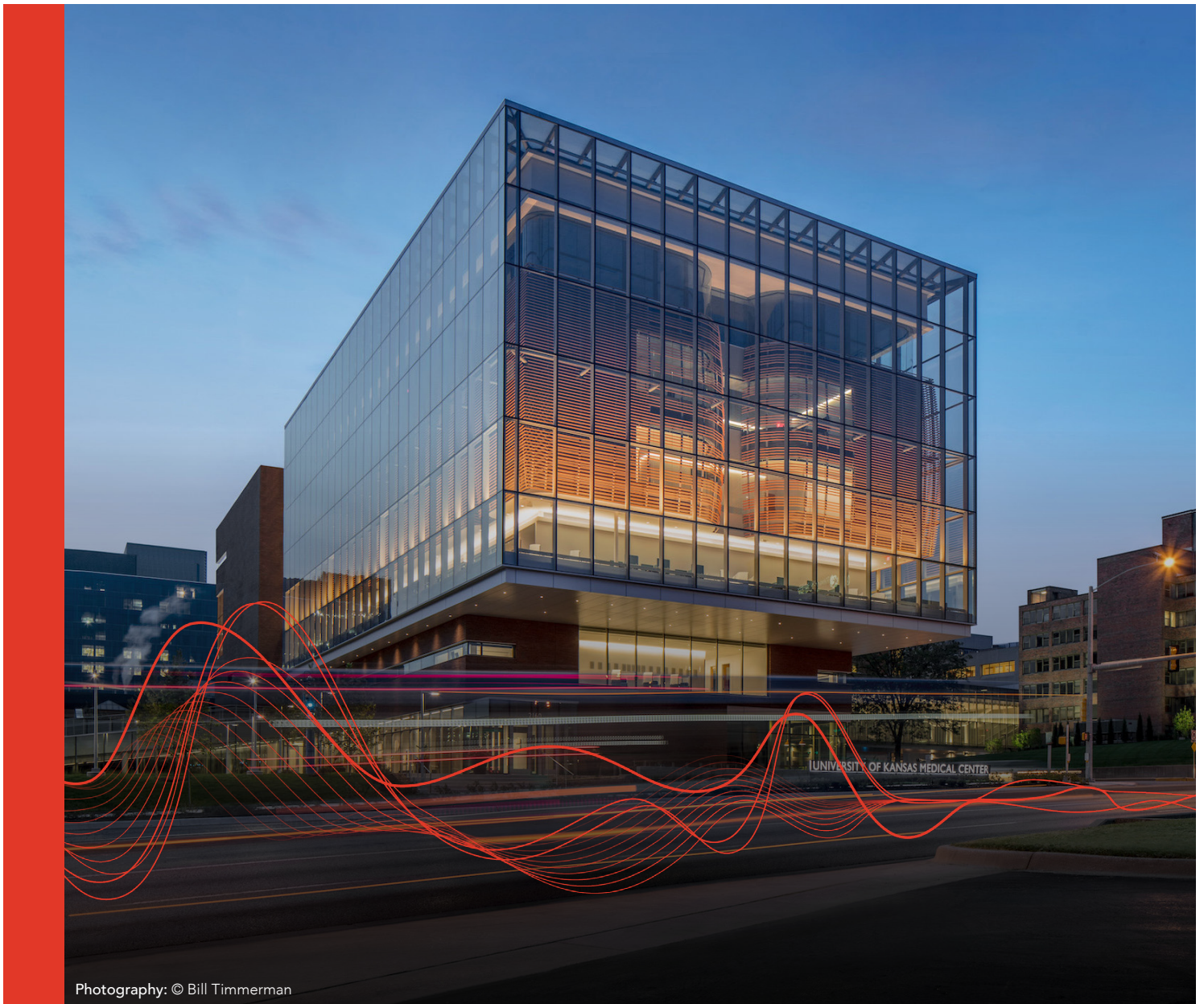


# ENHANCING ENVIRONMENTS THROUGH ACOUSTIC PERFORMANCE



Photography: © Bill Timmerman

## SOUND INSULATION IN ARCHITECTURAL DESIGN

Acoustic performance is an increasing priority for modern architectural design and is becoming a recurring requirement in project specifications. Relevant across various sectors, it is crucial to consider the high levels of noise from nearby airports, highways, railroads and machinery in both urban and non-urban areas. The level of acoustic performance needed for a project varies greatly, with project location, building use and high vs. low frequency noise being key factors.

Sound Transmission Class (STC) and Outdoor/Indoor Transmission Class (OITC) are therefore increasingly important measurements for architects and building designers to consider in pursuit of optimal sound insulation. Meeting these standards benefits projects across various sectors including multifamily, education, commercial, transportation and more.

The acoustic performance of a building's materials is a key element in providing comfort and well-being to building occupants. In addition to providing high thermal performance and protection against outside forces, Kawneer's facade products contribute to quiet indoor environments ideal for living, working and relaxing regardless of outside noise.

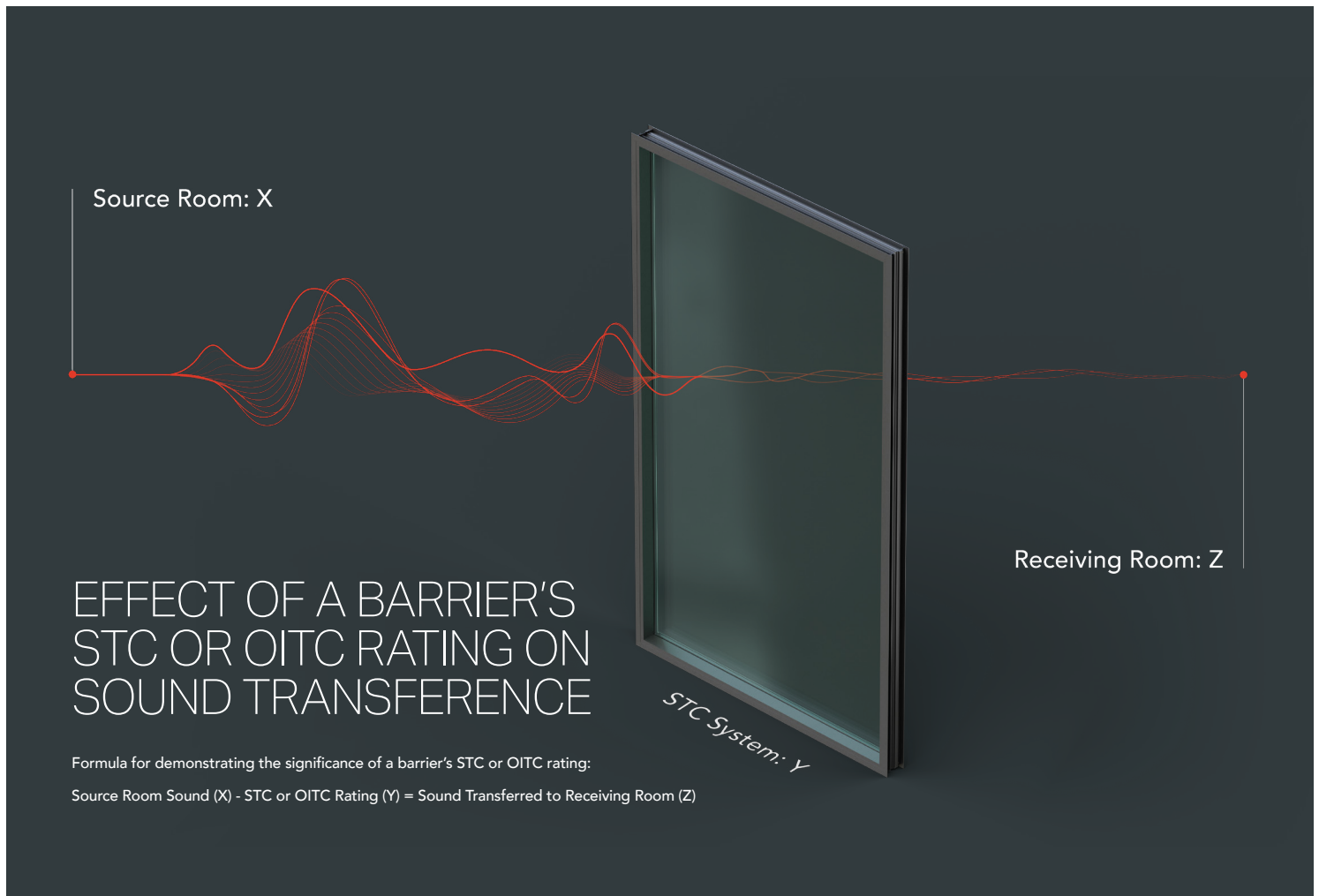
## ACOUSTIC PERFORMANCE MEASUREMENT

Acoustic performance refers to the transference of sound from one area to another, either from the exterior to the interior, or between adjacent interior areas. This demonstrates the amount of sound that is reduced by a barrier, particularly relevant to windows, doors and walls within the space. Sound Transmission Class (STC) and Outdoor/Indoor Transmission Class (OITC) are used to rate the sound reduction performance of a barrier.

STC rates sound transmission over a frequency range (from 125 to 4000 hertz) and is applicable to interior areas that experience mid- to high-frequency noises, such as conversation, music, television and more.

OITC rates sound transmission from exterior to interior areas across a frequency range of 80 to 4000 hertz and therefore is applicable for low-frequency noises, most commonly coming from urban environments, such as road traffic, aircraft, railroads, heavy machinery and noisy warehouses.

In summary, STC and OITC ratings reflect the magnitude of sound transmission being blocked by a barrier. The higher the STC or OITC value, the lower the magnitude of sound transmission through the barrier.



## ACOUSTIC PERFORMANCE TESTING

In line with the latest standards and requirements of the building and construction industry, validating the acoustic performance of our products and systems is a priority. At Kawneer, we never stop innovating and are committed to providing quality products that meet project needs for acoustic performance.

A wide range of Kawneer's products have been tested for acoustic performance according to American Architectural Manufacturers Association (AAMA) 1801 and American Society for Testing and Materials (ASTM) E90. The STC and OITC ratings have been calculated according to ASTM E413 and ASTM E1332.

STC and OITC values are now available for a wide range of Kawneer products in the following tables.

### DOUBLE GLAZED PRODUCTS

STOREFRONT							
SYSTEM NAME	CONFIGURATION	GLAZING THICKNESS (in.)	STC	OITC	GLASS MAKE UP (in.)		
					OUTBOARD	AIR SPACE	INBOARD
IR 521	Center Set	1-5/16	38	32	1/4	1/2	1/2 Laminated
IR 521T/UT	Center Set	1-5/16	38	33	1/4	1/2	1/2 Laminated
IR 501	Center Set	1	40	34	1/4	1/2	1/4 Laminated
IR 501UT	Center Set	1	38	33	1/4	1/2	1/4 Laminated
Trifab® VersaGlaze® 451T/UT	Back Set	1	38	30	1/4 Laminated	1/2	1/4 Laminated
	Center Set	1	37	30	1/4 Laminated	1/2	1/4 Laminated
	Front Set	1	38	31	1/4 Laminated	1/2	1/4 Laminated
Trifab® VersaGlaze® 451T SSG	Front Set	1	35	28	1/4 Laminated	1/2	1/4 Laminated
Trifab® VersaGlaze® 601T/UT	Center Set	1-1/16	36	30	1/4	1/2	5/16 Laminated
	Center Set	1	31	25	1/4	1/2	1/4
Trifab® VersaGlaze® 601T SSG	Front Set	1-1/16	37	30	1/4	1/2	5/16 Laminated
	Front Set	1	32	25	1/4	1/2	1/4
Trifab® VersaGlaze® 601UT SSG	Front set	1	31	25	1/4	1/2	1/4

DOORS & ENTRANCES							
SYSTEM NAME	CONFIGURATION	GLAZING THICKNESS (in.)	STC	OITC	GLASS MAKE UP (in.)		
					OUTBOARD	AIR SPACE	INBOARD
2000T Terrace	Swing	1-1/8	39	32	5/16 Laminated	1/2	5/16 Laminated
250T Insulpour® Thermal	Swing	1	37	32	1/4	1/2	1/4 Laminated
AA®250 Thermal	Swing	1	32	28	1/4	1/2	1/4
AA®3200 Thermal	Sliding	1-1/4	38	33	1/4	1/2	1/2 Laminated
Flushline®	Swing	1	27	27	1/4	1/2	1/4 Laminated
NX8900 Terrace	Swing	1	36	30	1/4 Laminated	5/8	1/8

(Please note the STC and OITC values of a framing system do not determine the acoustic performance of the full facade, as factors such as glass and insulation must be considered too. Glass has a greater impact on sound transmission loss than the aluminum facade system.)

CURTAIN WALL

SYSTEM NAME	CONFIGURATION	GLAZING THICKNESS (in.)	STC	OITC	GLASS MAKE UP (in.)		
					OUTBOARD	AIR SPACE	INBOARD
1600 Wall System®1	Front Set	1	31	26	1/4	1/2	1/4
	Front Set	1	37	30	1/4 Laminated	1/2	1/4 Laminated
1600 Wall System®1 - Sull Sash 1/4" (Standard Cover)	Front Set	1	46	33	1/4	1/2	1/4 Laminated
1600 Wall System®1 - Sull Sash 1/4" (Deep Cover)	Front Set	1	47	34	1/4	1/2	1/4 Laminated
1600 Wall System®1 IR - Sull Sash 1/4"	Front Set	1-1/4	48	42	1/4	1/2	1/2 Laminated
1600 Wall System®2	Front Set	1	36	N/A	1/4 Laminated	1/2	1/4 Laminated
	Front Set	1	31	25	1/4	1/2	1/4
1600 Wall System®3	Front Set	1	30	25	1/4	1/2	1/4 Laminated
1600 Wall System®5	Front Set	1	37	31	1/4 Laminated	1/2	1/4 Laminated
	Front Set	1	32	28	1/4	1/2	1/4
1600UT System™1	Front Set	1	31	25	1/4	1/2	1/4
	Front Set	1-5/8	39	34	1/2 Laminated	3/4	3/8
1600UT System™2	Front Set	1-1/2	41	32	1/4	1	1/4 Laminated
1600UT SS - Captured	Front Set	1	35	30	1/4	7/16	5/16 Laminated
	Front Set	1-1/4	37	31	1/4	7/16	9/16 Laminated
	Front Set	1-5/16	40	35	9/16 Laminated	7/16	5/16 Laminated
1600UT SS - SSG	Front Set	1	36	30	1/4	7/16	5/16 Laminated
	Front Set	1-1/4	37	32	1/4	7/16	9/16 Laminated
	Front Set	1-5/16	41	35	9/16 Laminated	7/16	5/16 Laminated
1600UT System™2 - Sull Sash 5/8" Laminated	Front Set	1-13/16	52	42	1/4	1	9/16 Laminated
1600 SS	Front Set	1	31	26	1/4	1/2	1/4
1600 SS SSG	Front Set	1	32	26	1/4	1/2	1/4
1620	Front Set	1	34	29	1/4	1/2	1/4 Laminated
1620 SSG	Front Set	1	34	28	1/4	1/2	1/4 Laminated
1620UT / 1620 UT SSG	Front Set	1	34	29	1/4	1/2	1/4 Laminated
1620UT SSG	Front Set	1	34	29	1/4	1/2	1/4 Laminated
1630 SS IR	Front Set	1	37	32	1/4	1/2	1/4 Laminated
2250 IG (Inside Glazed)	Front Set	1	38	31	1/4 Laminated	1/2	1/4 Laminated
2500 PG Wall®	Front Set	1	35	28	1/4 Laminated	1/2	1/4 Laminated
2500 UT Unitwall®	Front Set	1	36	30	1/4	1/2	1/4 Laminated
Clearwall® SS	Front Set	1-1/8	33	28	1/4	5/8	1/4
Clearwall® SSI	Front Set	7/8	37	30	1/4	1/2	1/8 Laminated

(Please note the STC and OITC values of a framing system do not determine the acoustic performance of the full facade, as factors such as glass and insulation must be considered too. Glass has a greater impact on sound transmission loss than the aluminum facade system.)

WINDOW WALL

SYSTEM NAME	CONFIGURATION	GLAZING THICKNESS (in.)	STC	OITC	GLASS MAKE UP (in.)		
					OUTBOARD	AIR SPACE	INBOARD
MetroView® FG 501T	Front Set	1	36	31	1/4	1/2	1/4 Laminated
MetroView®FG 601T PG	Front Set	1	34	27	1/4	1/2	1/4 Laminated
PG 123® Framing	Front Set	1	37	29	1/4 Laminated	1/2	1/4 Laminated

WINDOWS

SYSTEM NAME	CONFIGURATION	GLAZING THICKNESS (in.)	STC	OITC	GLASS MAKE UP (in.)		
					OUTBOARD	AIR SPACE	INBOARD
8225TL Thermal	Project Out	1	33	27	1/4	1/2	1/4
	Fixed	1	34	28	1/4	1/2	1/4
8400TL Thermal	Single Hung	1	37	32	3/16	3/8	7/16 Laminated
	Double Hung	1	33	29	1/4	1/2	1/4
	Horizontal Slider	1	34	29	1/4	1/2	1/4
AA6400 Thermal	Casement	1	35	28	1/4	1/2	1/4
	Fixed	1	38	32	3/16	3/8	7/16 Laminated
	Project In	1	33	27	1/4	1/2	1/4
	Fixed	1-3/4	48	38	1/2 Laminated	1	1/4 Laminated
GLASSvent® for Curtain Wall	Project Out	1	31	26	1/4 Laminated	1/2	1/4 Laminated
GLASSvent® UT	Project Out	1	37	30	3/16 Laminated	3/8	7/16 Laminated
	Casement Out	1-3/4	41	34	9/16 Laminated	7/8	5/16 Laminated
OptiQ® AA®4325 Series	Fixed	1-7/16	41	34	1/4	3/4	1 1/6 Laminated
	Fixed	1	37	30	3/16	1/2	5/16
	Project Out	1	39	32	1/4	5/8	3/16
	Casement Out	1	32	25	1/4	1/2	1/4
	Casement Out	1-7/16	39	33	1/4	3/4	7/16 Laminated
OptiQ® AA®4325 Series - 1/4" interior panel	Project Out	1	45	32	1/4 Laminated	1/2	1/4
OptiQ® AA®5450 Series	Fixed	1-1/4	39	32	5/16 Laminated	5/8	5/16 Laminated
	Single Hung	1-3/16	35	31	3/16	5/8	3/8 Laminated
	Double Hung	1-1/4	38	32	5/16 Laminated	5/8	5/16 Laminated
OptiQ® Offset Fixed/Projected Series	Fixed	1	38	31	3/16	1/2	5/16 Laminated
	Fixed/Project Out	1	38	31	3/16	1/2	5/16 Laminated
	Fixed/Project In	1	38	31	3/16	1/2	5/16 Laminated

(Please note the STC and OITC values of a framing system do not determine the acoustic performance of the full facade, as factors such as glass and insulation must be considered too. Glass has a greater impact on sound transmission loss than the aluminum facade system.)

## TRIPLE GLAZED PRODUCTS

CURTAIN WALL									
SYSTEM NAME	CONFIGURATION	GLAZING THICKNESS (in.)	STC	OITC	GLASS MAKE UP (in.)				
					OUTBOARD	AIR SPACE	GLASS LAYER #2	AIR SPACE	INBOARD
1600UT System™1	Front Set	1-3/4	33	27	1/4	1/2	1/4	1/2	1/4
1620UT	Front Set	1-3/4	33	27	1/4	1/2	1/4	1/2	1/4
1620UT SSG	Front Set	1-3/4	40	33	1/4	1/2	1/4	1/2	1/4 Laminated

WINDOWS									
SYSTEM NAME	CONFIGURATION	GLAZING THICKNESS (in.)	STC	OITC	GLASS MAKE UP (in.)				
					OUTBOARD	AIR SPACE	GLASS LAYER #2	AIR SPACE	INBOARD
OptiQ® AA®5450	Fixed	1-1/2	29	23	1/8	9/16	1/8	9/16	1/8
	Single Hung	1-1/2	32	24	1/8	9/16	1/8	9/16	1/8
	Double Hung	1-1/2	32	25	1/8	9/16	1/8	9/16	1/8
	Horizontal Slider	1-1/2	33	26	1/8	9/16	1/8	9/16	1/8

(Please note the STC and OITC values of a framing system do not determine the acoustic performance of the full facade, as factors such as glass and insulation must be considered too. Glass has a greater impact on sound transmission loss than the aluminum facade system.)