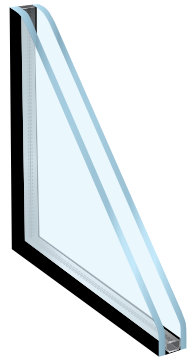




VIRACON®

ACOUSTIC PERFORMANCE DATA TABLES

INSULATING ACOUSTICAL DATA

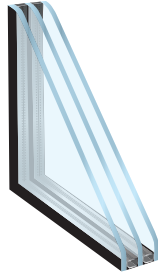


Viracon Acoustical Glass is made from combinations of various glass types along with acoustical window frames to help you effectively reduce sound transmission from airplanes, trains, vehicles and other unwanted noises. The performance data below applies to an insulating unit constructed with two plies of glass and an air or argon filled space. Data is based on testing ~36" x 84" glass to ASTM E413-87 in an acoustical wall. *OITC is estimated based on this test. Glass size and glazing system will affect STC rating.

The **STC (Sound Transmission Class)** rating is a single-number rating system for interior building partitions and viewing windows used to categorize acoustic performance. Its original intent was to quantify interior building partitions not exterior wall components. As a result it is not recommended for glass selection of exterior wall applications since the single-number rating was achieved under a specific set of laboratory conditions.

The **OITC (Outside-Inside Transmission Class)** rating is used to classify acoustic performance of glazing in exterior applications.

Insulating Glass Construction	STC	OITC*	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
1/2" overall - 1/8" glass, 1/4" airspace, 1/8" glass	28	26	26	21	23	23	26	21	19	24	27	30	33	36	40	44	46	39	34	45
5/8" overall - 1/8" glass, 3/8" airspace, 1/8" glass	31	26	26	23	23	20	23	19	23	27	29	32	35	39	44	47	48	41	36	43
1" overall - 1/4" glass, 1/2" airspace, 1/4" glass	35	30	27	24	29	22	22	25	30	33	35	38	40	42	42	37	37	43	46	49
1" overall - 1/4" glass, 1/2" argon space, 1/4" glass	35	29	32	29	28	22	20	25	30	33	37	40	43	45	44	39	40	45	49	52
1" overall - 1/4" glass, 9/16" airspace, 3/16" glass	37	30	32	26	25	20	24	29	33	34	38	41	43	46	46	42	36	43	48	53
1-1/8" overall - 5/16" glass, 1/2" airspace, 5/16" glass	37	32	26	24	25	31	24	32	32	35	37	39	39	38	36	38	42	44	46	49
1-1/4" overall - 3/8" glass, 1/2" airspace, 3/8" glass	37	32	29	23	23	29	31	34	34	35	36	36	35	35	36	40	43	47	49	48
1-1/2" overall - 1/4" glass, 1" airspace, 1/4" glass	37	30	22	19	27	23	31	30	35	35	36	39	41	42	41	36	37	46	51	56
1-1/16" overall - 1/4" glass, 1/2" airspace, 5/16" glass	38	33	30	24	29	26	29	33	34	36	39	41	41	40	38	37	39	43	46	48
1-1/4" overall - 1/4" glass, 3/4" airspace, 1/4" glass	38	31	27	23	28	21	27	29	34	35	37	41	43	45	44	39	39	46	49	52
1-1/8" overall - 1/4" glass, 1/2" airspace, 3/8" glass	39	34	28	26	32	29	29	31	35	37	38	39	41	43	41	40	41	44	47	49
1-3/16" overall - 5/16" glass, 1/2" airspace, 3/8" glass	39	34	29	26	26	31	30	37	36	37	39	39	40	37	35	39	43	46	48	49
1-3/8" overall - 1/4" glass, 3/4" airspace, 3/8" glass	40	33	30	23	31	28	33	37	39	40	41	39	38	38	39	39	40	47	51	53



TRIPLE INSULATING ACOUSTICAL DATA

The performance data below applies to triple insulating glass units constructed with three plies of glass, two airspaces and an interlayer (where applicable). Data is based on testing ~36" x 84" glass to ASTM E413-87 in an acoustical wall. *OITC is estimated based on this test. Glass size and glazing system will affect STC rating.

Triple Insulating Glass Construction	STC	OITC*	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
1-3/4" overall - 1/4" glass, 1/2" airspace, 1/4" glass, 1/2" airspace, 1/4" glass	39	31	25	22	29	24	25	29	34	37	40	43	46	48	47	41	41	47	52	58
1-7/8" overall - 1/4" glass, 1/2" airspace, 1/4" glass, 1/2" airspace, 3/16" glass, .030" PVB, 3/16" glass	41	33	24	25	31	29	31	36	37	39	39	41	41	42	42	43	44	48	50	49
2-3/4" overall - 3/8" glass, 3/4" airspace, 5/16" glass, 3/4" airspace, 1/4" glass, .060" PVB, 1/4" glass	45	35	33	30	34	37	39	43	44	45	46	43	41	41	43	49	55	57	61	65

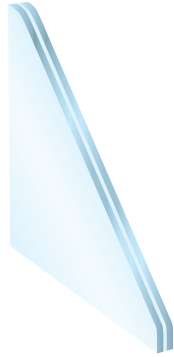


MONOLITHIC ACOUSTICAL DATA

The performance data below applies to monolithic glass. Data is based on testing ~36" x 84" glass to ASTM E413-87 in an acoustical wall. *OITC is estimated based on this test. Glass size and glazing system will affect STC rating. The monolithic glass is one lite of glass.

Monolithic Glass Construction	STC	OITC*	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
1/8" overall - 1/8" glass	30	25	19	17	18	21	23	22	24	27	28	30	30	32	34	35	36	33	26	30
1/4" overall - 1/4" glass	31	29	23	25	25	24	28	26	29	31	33	34	34	35	34	30	27	32	37	31
3/8" overall - 3/8" glass	34	32	26	27	27	30	32	31	34	35	36	35	33	30	30	35	38	41	46	48
1/2" overall - 1/2" glass	36	33	26	30	26	30	33	33	34	36	37	35	32	32	36	40	43	46	50	51



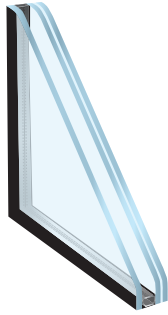


LAMINATED ACOUSTICAL DATA

The performance data below applies to laminated glass units constructed with two plies of glass and an interlayer. Data is based on testing ~36" x 84" glass to ASTM E413-87 in an acoustical wall. *OITC is estimated based on this test. Glass size and glazing system will affect STC rating.

Laminated Glass Construction	STC	OITC*	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
1/4" overall - 1/8" glass, .015" PVB, 1/8" glass	33	30	27	23	27	24	27	28	29	31	33	35	35	35	33	31	32	37	41	45
3/16" overall - S/S glass, .030" PVB, S/S glass	35	31	29	29	29	25	27	29	29	31	32	34	34	34	34	35	33	36	39	41
1/4" overall - 1/8" glass, .030" PVB, 1/8" glass	35	31	25	26	28	27	29	29	30	32	34	35	35	36	36	35	35	38	43	46
1/4" overall - 1/8" glass, .045" PVB, 1/8" glass	35	31	24	27	27	28	28	29	30	32	34	35	36	36	37	36	35	38	43	46
5/16" overall - 1/8" glass, .060" PVB, 1/8" glass	35	31	25	25	26	29	28	30	30	32	34	35	35	36	36	36	36	39	43	46
3/8" overall - 3/16" glass, 0.15" PVB, 3/16" glass	36	32	27	25	26	30	31	31	33	35	35	35	35	33	33	37	41	44	48	51
3/8" overall - 3/16" glass, .030" PVB, 3/16" glass	36	33	27	27	27	30	31	31	33	34	35	36	36	35	34	37	41	45	49	52
3/8" overall - 1/4" glass, .030" PVB, 1/8" glass	36	33	27	28	26	30	31	31	32	34	35	36	36	35	35	36	40	44	48	51
1/2" overall - 1/4" glass, .015" PVB, 1/4" glass	36	32	25	25	27	30	32	32	34	35	35	35	33	32	35	40	43	46	49	51
9/16" overall - 1/4" glass, .075" Storm, 1/4" glass	36	35	27	30	30	31	31	33	32	33	34	35	35	34	36	40	43	45	47	47
9/16" overall - 1/4" glass, .090" SGP, 1/4" glass	36	34	31	30	29	31	32	33	33	34	35	35	34	32	34	37	40	42	44	47
7/16" overall - 1/4" glass, .060" PVB, 1/8" glass	37	33	27	28	27	30	31	31	33	35	36	37	37	37	36	37	41	44	48	51
9/16" overall - 1/4" glass, .100" StormGuard, 1/4" glass	37	35	32	31	30	31	33	34	34	34	35	36	35	35	37	41	44	47	49	51
1/2" overall - 1/4" glass, .030" PVB, 1/4" glass	38	34	25	29	28	30	33	33	34	36	37	37	37	36	37	41	45	48	51	53
1/2" overall - 1/4" glass, .045" PVB, 1/4" glass	38	34	26	30	27	30	33	33	34	36	37	38	37	36	37	41	45	48	51	54
9/16" overall - 1/4" glass, .060" PVB, 1/4" glass	39	34	26	29	28	30	33	33	35	36	37	38	38	37	38	41	44	47	51	54
3/4" overall - 1/2" glass, .030" PVB, 1/4" glass	39	36	31	35	33	33	34	36	36	37	36	35	34	39	41	46	48	50	52	56
5/8" overall - 3/8" glass, .030" PVB, 1/4" glass	40	36	29	30	28	32	34	35	36	38	38	38	36	38	42	46	49	52	55	57
13/16" overall - 1/2" glass, .060" PVB, 1/4" glass	41	36	29	30	29	32	35	35	37	38	38	38	37	41	44	48	50	53	56	56





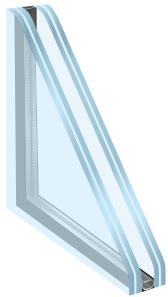
INSULATING LAMINATED ACOUSTICAL DATA

The performance data below applies to insulating laminated glass units constructed with three plies of glass, an interlayer and an airspace. Data is based on testing ~36" x 84" glass to ASTM E413-87 in an acoustical wall. *OITC is estimated based on this test. Glass size and glazing system will affect STC rating.

Insulating Laminated Glass Construction	STC	OITC*	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
13/16" overall - 3/16" glass, 3/8" airspace, 1/8" glass, .030" PVB, 1/8" glass	37	31	27	27	26	24	22	28	32	35	38	38	39	40	42	43	41	45	52	57
15/16" overall - 3/16" glass, 1/2" airspace, 1/8" glass, .030" PVB, 1/8" glass	39	31	26	23	25	23	27	31	34	36	38	39	41	43	45	46	43	49	55	55
1" overall - 1/4" glass, 1/2" airspace, 1/8" glass, .030" PVB, 1/8" glass	39	31	28	20	29	24	26	30	34	36	39	42	43	44	44	41	40	47	52	56
1-5/16" overall - 1/4" glass, 1/2" airspace, 1/4" glass, .075" Storm, 1/4" glass	39	34	29	25	30	27	31	34	35	34	36	38	40	41	42	43	44	47	50	49
1-5/16" overall - 1/4" glass, 1/2" airspace, 1/4" glass, .090" SGP, 1/4" glass	39	34	29	24	32	27	32	34	35	34	36	38	40	40	41	41	42	46	48	49
1-1/8" overall - 1/4" glass, 1/2" airspace, 1/4" glass, .030" PVB, 1/8" glass	40	30	28	17	28	29	33	34	38	40	40	41	41	41	41	40	43	49	54	58
1-1/16" overall - 1/4" glass, 7/16" airspace, 3/16" glass, .030" PVB, 3/16" glass	40	33	31	25	30	27	29	34	36	37	39	40	42	43	42	41	44	47	51	51
1-5/16" overall - 1/4" glass, 1/2" airspace, 1/4" glass, .100" Stormguard, 1/4" glass	40	34	28	23	30	28	32	35	36	36	37	39	41	43	43	43	45	48	50	49
1-5/8" overall - 1/4" glass, 1" airspace, 3/16" glass, .030" PVB, 3/16" glass	40	32	24	24	31	28	33	36	37	39	39	40	41	41	41	42	43	47	49	47
1-1/16" overall - 1/4" glass, 1/2" airspace, 1/8" glass, .060" PVB, 1/8" glass	41	32	24	23	28	26	28	33	36	37	39	42	44	46	46	43	44	50	53	55
1-1/8" overall - 1/4" glass, 1/2" airspace, 3/16" glass, .030" PVB, 3/16" glass	41	35	32	27	29	28	31	35	37	39	41	42	43	44	43	42	45	50	53	54
1-1/16" overall - 1/4" glass, 7/16" airspace, 3/16" glass, .030" AC, 3/16" glass	41	34	31	26	29	26	30	33	36	36	39	42	44	45	45	44	45	49	51	50
1-3/16" overall - 1/4" glass, 1/2" airspace, 3/16" glass, .060" PVB, 3/16" glass	42	35	30	29	31	28	31	34	37	39	41	42	44	46	45	44	47	52	55	60
1-5/16" overall - 1/4" glass, 1/2" airspace, 1/4" glass, .060" PVB, 1/4" glass	42	34	29	24	30	29	32	37	40	40	41	42	44	45	44	45	48	53	57	59
1-5/16" overall - 1/4" glass, 5/8" airspace, 3/16" glass, .060" PVB, 3/16" glass	42	35	29	24	30	29	32	37	40	40	41	42	44	45	44	45	48	53	57	59



Insulating Laminated Glass Construction	STC	OITC*	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
1-1/4" overall - 1/4" glass, 1/2" airspace, 1/4" glass, .030" PVB, 1/4" glass	43	36	31	29	32	30	32	35	38	40	40	42	44	46	47	46	47	52	56	61
1-3/8" overall - 5/16" glass, 5/8" airspace, 3/16" glass, .060" PVB, 3/16" glass	43	37	28	28	34	36	33	40	41	42	43	43	42	40	40	43	49	53	57	61
1-7/16" overall - 3/16" glass, 11/16" airspace, 3/8" glass, .030" PVB, 3/16" glass	43	35	27	27	29	29	30	35	39	40	41	42	43	46	50	52	50	53	57	59
1-11/16" overall - 3/8" glass, 3/4" airspace, 1/4" glass, .060" PVB, 1/4" glass	43	37	25	31	38	33	37	39	42	43	43	42	40	40	41	56	50	55	58	61
1-7/16" overall - 1/4" glass, 3/4" airspace, 3/16" glass, .060" PVB, 3/16" glass	44	36	28	26	32	30	35	37	40	41	43	44	45	47	47	44	47	53	57	60
1-9/16" overall - 1/4" glass, 3/4" airspace, 1/4" glass, .060" PVB, 1/4" glass	44	37	28	29	36	32	34	39	41	41	41	43	44	45	45	46	47	52	56	61
1-15/16" overall - 3/8" glass, 1" airspace, 1/4" glass, .060" PVB, 1/4" glass	46	36	24	30	33	35	40	41	44	45	45	44	44	44	43	46	50	54	57	58



DOUBLE LAMINATED INSULATING ACOUSTICAL DATA

The performance data below applies to double laminated insulating glass units constructed with four plies of glass, two interlayers and an airspace. Data is based on testing ~36" x 84" glass to ASTM E413-87 in an acoustical wall. *OITC is estimated based on this test. Glass size and glazing system will affect STC rating.

Double Laminated Insulating Glass Construction	STC	OITC*	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
1-7/16" overall - 1/4" glass, .030" PVB, 1/4" glass, 1/2" airspace, 3/16" glass, .060" PVB, 3/16" glass	41	35	32	25	29	31	33	35	37	38	39	39	40	41	42	43	43	44	45	46
1" overall - 1/8" glass, .030" PVB, 1/8" glass, 1/2" airspace, 1/8" glass, .030" PVB, 1/8" glass	42	33	26	21	29	28	30	34	36	40	42	44	44	44	45	46	47	52	57	58
1-3/8" overall - 5/32" glass, .030" PVB, 5/16" glass, 1/2" airspace, 5/32" glass, .030" PVB, 1/4" glass	42	35	29	24	30	35	35	37	39	39	40	40	40	39	44	48	52	56	59	61
1-5/16" overall - 1/4" glass, .030" PVB, 1/4" glass, 1/2" airspace, 5/32" glass, .060" PVB, 5/32" glass	43	36	30	25	29	33	34	38	42	42	43	44	42	41	42	44	49	52	55	57
1-11/16" overall - 1/4" glass, .060" PVB, 1/4" glass, 3/4" airspace, 3/16" glass, .030" PVB, 3/16" glass	44	33	21	23	31	35	37	40	42	42	43	42	42	42	44	48	51	55	57	59



Double Laminated Insulating Glass Construction	STC	OITC*	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
1-9/16" overall - 1/4" glass, .060" PVB, 1/4" glass, 3/4" airspace, 1/8" glass, .030" PVB, 1/8" glass	44	37	32	26	35	35	35	40	41	42	42	43	44	44	45	47	50	56	54	45
2-1/8" overall - 1/4" glass, .100" PVB, 1/4" glass, 3/4" airspace, 1/4" glass, .060" PVB, 1/2" glass	45	38	30	31	36	35	38	42	42	41	41	40	41	44	47	50	53	56	58	60
2-3/8" overall - 3/8" glass, .060" PVB, 3/8" glass, 3/4" airspace, 3/8" glass, .090" PVB, 3/8" glass	45	38	28	32	37	35	38	39	41	38	40	41	44	46	49	52	55	57	56	53
2-5/8" overall - 3/8" glass, .060" PVB, 3/8" glass, 1" airspace, 3/8" glass, .090" PVB, 3/8" glass	45	38	29	32	37	37	37	40	42	38	39	41	44	47	50	53	55	57	59	60

DOUBLE GLAZED INSULATING ACOUSTICAL DATA

The performance data below applies to double glazed insulating glass units. Data is based on testing ~36" x 84" glass to ASTM E413-87 in an acoustical wall. *OITC is estimated based on this test. Glass size and glazing system will affect STC rating. **These double-glazed applications are provided for information only and refer to field-glazed applications.**

Viracon supplies only the glass components.

Double Glazed Insulating Glass Construction	STC	OITC*	Frequency (Hz)																	
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
			Sound Transmission Loss (dB)																	
1-7/16" overall - 1/8" glass, .030" PVB, 1/8" glass, 1" airspace, 3/16" glass	42	33	22	27	27	28	31	35	38	41	42	43	44	45	47	47	45	50	58	61
2-7/16" overall - 1/8" glass, .030" PVB, 1/8" glass, 2" airspace, 3/16" glass	45	35	24	25	34	33	34	40	41	44	44	46	47	47	48	48	46	50	55	56
1-13/16" overall - 1/4" glass, .030" PVB, 1/4" glass, 1" airspace, 1/8" glass, .060" PVB, 1/8" glass	46	35	21	28	33	37	38	42	43	45	44	44	44	45	49	53	57	59	62	63
2-11/16" overall - 1/4" glass, .030" PVB, 1/4" glass, 2" airspace, 3/16" glass	46	39	27	36	33	33	35	39	41	45	45	46	46	46	49	51	52	56	60	62
2-7/8" overall - 1/4" glass, .030" PVB, 1/4" glass, 2" airspace, 3/8" glass	46	42	34	37	33	38	40	42	44	48	47	46	45	52	56	51	55	59	61	62
4-7/16" overall - 1/8" glass, .030" PVB, 1/8" glass, 4" airspace, 3/16" glass	48	39	26	36	34	37	37	43	44	48	49	51	51	50	51	50	47	51	58	60
4-11/16" overall - 1/4" glass, .030" PVB, 1/4" glass, 4" airspace, 3/16" glass	49	41	30	37	33	38	37	42	45	49	50	51	50	48	50	53	58	57	61	64
4-7/8" overall - 1/4" glass, .030" PVB, 1/4" glass, 4" airspace, 3/8" glass	49	44	38	38	33	40	40	43	46	51	52	52	50	45	48	53	56	59	62	64
4-15/16" overall - 1/2" glass, .060" PVB, 1/4" glass, 4" airspace, 1/8" glass	49	40	29	33	31	36	38	43	44	46	47	49	50	52	52	55	59	59	58	60



Double Glazed Insulating Glass Construction	STC	OITC*	Frequency (Hz)																		
			100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	
			Sound Transmission Loss (dB)																		
5-1/16" overall - 1/4" glass, .060" PVB, 1/4" glass, 4" airspace, 1/4" glass, .030" PVB, 1/4" glass	50	43	31	39	35	39	41	43	46	51	52	52	49	48	50	54	59	61	63	64	
5-5/16" overall - 1/2" glass, .060" PVB, 1/4" glass, 4" airspace, 1/4" glass, .030" PVB, 1/4" glass	50	43	31	42	33	40	42	43	46	50	50	50	49	50	52	55	60	62	64	64	
4-3/4" overall - 1/4" glass, .030" PVB, 1/4" glass, 4" airspace, 1/8" glass, .030" PVB, 1/8" glass	51	44	34	38	34	40	41	45	47	51	52	53	53	51	52	55	58	60	62	64	

