English



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Acoustic comfort & structural performance

SentryGlas® Acoustic® Interlayer

kuraray

SentryGlas®

When Strength Meets Silence!

DESIGNED FOR DEMANDING ARCHITECTURAL GLAZING

For projects where sound reduction, structural behaviour and safety must be considered together.

The trade-off is over

Acoustic and structural performance. Engineered together.

SENTRYGLAS® IONOPLAST INTERLAYER was developed to meet the demanding requirements of hurricane-impact glazing. Over more than 27 years it has become recognised for structural strength, clarity, open-edge stability and post-breakage performance. Its high stiffness promotes composite action between the glass plies, supporting efficient laminates and dependable load transfer. In security and extreme-weather applications, strong fragment retention helps the glazed system remain intact after breakage.

2026 – THE NEXT GENERATION COMES ALIVE. SentryGlas Acoustic® (SGA®) interlayer was engineered for extreme weather conditions to deliver exceptional acoustic comfort, structural strength and durability for resilient, hurricane-resistant and high performance glazing. It is the ideal solution for hurricane-prone regions. SentryGlas Acoustic® helps create safer, quitter and more resilient buildings – without compromising design.

Photo: © Generated by AI

HURRICANE RESISTANT

Withstands extreme windloads and missile impact

SUPERIOR ACOUSTIC COMFORT

Reduces unwanted noise for quieter environments

ENHANCED SAFETY

Maintains integrity after breakage for occupant protection

BEST DURABILITY

Resists moisture, UV and long term degradation

A new generation of multi-performance glazing

Acoustic comfort and structural performance – with little compromise.

Traditional laminated-glass design has required a choice between the acoustic damping of a soft interlayer and the structural coupling of a stiff interlayer. SentryGlas Acoustic® brings both capabilities together in one purpose-engineered trilayer.

Two SentryGlas® outer layers provide structural coupling and glass-fragment retention, while a thermoplastic elastomer core dissipates acoustic energy. This allows the laminate to respond to wind, impact and post-breakage demands while supporting quieter interior spaces.

TRADITIONAL SOLUTIONS

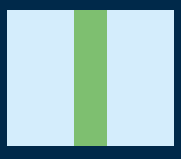
A performance compromise

ACOUSTIC PVB

Strong acoustic damping

✓ Quieter interior environments

✗ Limited structural coupling

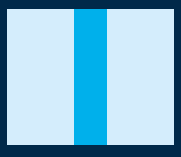


SENTRYGLAS®

Strong structural coupling

✓ Efficient load sharing

✗ Limited acoustic damping



SENTRYGLAS ACOUSTIC®

One engineered interlayer

Acoustic damping

✓ Comparable with acoustic PVB

Improved coupling

✓ Greater stiffness than acoustic PVB

Retention

✓ Added resilience for demanding systems



SENTRYGLAS ACOUSTIC®

A single integrated trilayer interlayer

Engineered trilayer technology

One interlayer. Two complementary material functions.

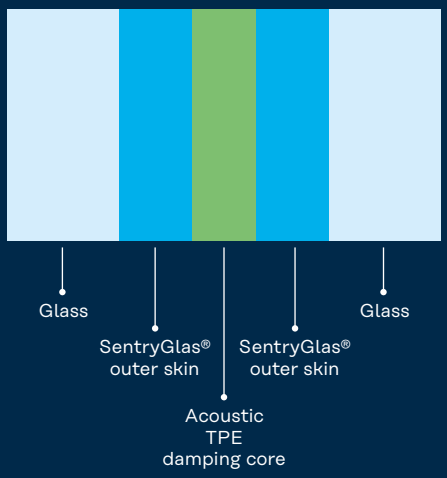
SENTRYGLAS ACOUSTIC® INTERLAYER combines SentryGlas® outer skins with a high-damping TPE core. The bonded trilayer is specified as one interlayer, while each material region performs a distinct role within the laminate.

SentryGlas Acoustic® with two complementary functions

STRUCTURAL FUNCTION

SentryGlas® outer skins

Support shear transfer, composite action, adhesion and glass-fragment retention. Their contribution is governed by time and temperature.



ACOUSTIC FUNCTION

High-damping TPE core

Absorbs vibration and dissipates acoustic energy, improving sound-control performance through the laminate's coincidence region.

ACOUSTIC COMFORT

Damping performance designed for quieter occupied spaces

STRUCTURAL COUPLING

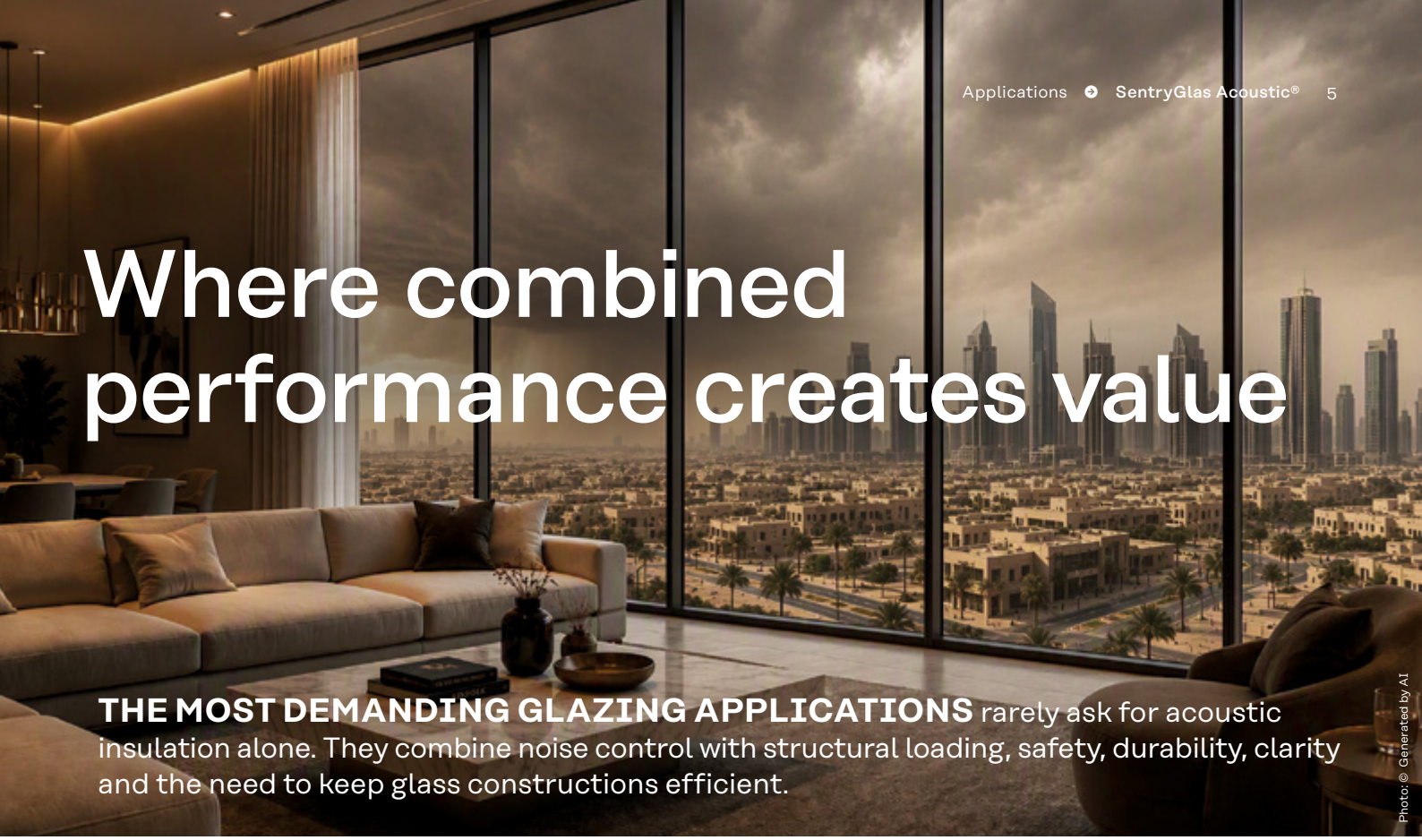
Greater stiffness and load sharing

RETENTION & RESILIENCE

Supports fragment retention and post-breakage integrity

DURABILITY & CLARITY

Designed for optical stability and demanding exposure



Where combined performance creates value

THE MOST DEMANDING GLAZING APPLICATIONS rarely ask for acoustic insulation alone. They combine noise control with structural loading, safety, durability, clarity and the need to keep glass constructions efficient.

Photo: © Generated by AI

Priority applications

Application	Typical design requirement	SentryGlas Acoustic® contribution
High-rise façades	Urban noise, wind loading and large glazed areas	Acoustic damping with improved structural coupling
Airports & transport hubs	High external noise and demanding occupied spaces	Sound-control performance with laminate retention
Hurricane regions	Impact, pressure cycling and enclosure protection	Use within tested impact-resistant glazing constructions
Security glazing	Forced-entry resistance and post-breakage containment	Retention within tested security laminate configurations
Overhead & atrium glazing	Safety, acoustics and sustained-load design	Multi-performance design using service-condition G(t) data

TAB 1



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Product overview

Dimensions, construction and optical properties

The initial product is a clear 0.75 mm (29.5 mil) bonded trilayer. Confirmed optical results are shown below.

Structural & Security Interlayers – dimensions

Type	Thickness [mm]	[mil]	Color	Roll widths [mm]	Roll widths [in]	Roll lengths [m]	[ft]
SentryGlas Acoustic®	0.75	29.5	Clear	1530/1830	60/72	50/250	164/820

TAB 2

Product definition and construction

Type	Construction	Thickness [mm]	Thickness [mil]	Color
SentryGlas Acoustic®	SentryGlas® Acoustic TPE SentryGlas® bonded trilayer	0.75	29.5	Clear

TAB 3



Component dimensions are the finite-element model inputs; the product is specified at its 0.75 mm (29.5 mil) nominal thickness. SentryGlas Acoustic® can be combined with SentryGlas® or SentryGlas Xtra® plies in project-specific constructions.

Optical properties

Property	Test method	Unit	Result
Instrumental haze	ASTM D1003	%	0.6
Yellowness Index (YID)	ASTM E313	-	0.5
UV transmittance	ISO 9050	%	< 2
Visible light transmission	ASTM D1003	%	90

TAB 4 Optical results for 0.75 mm SentryGlas Acoustic®. Metric measurements used 3 mm (0.118 in) soda-lime glass on both sides; imperial reporting follows the test-method requirements.

ONE PRODUCT. MULTIPLE PERFORMANCE PRIORITIES.

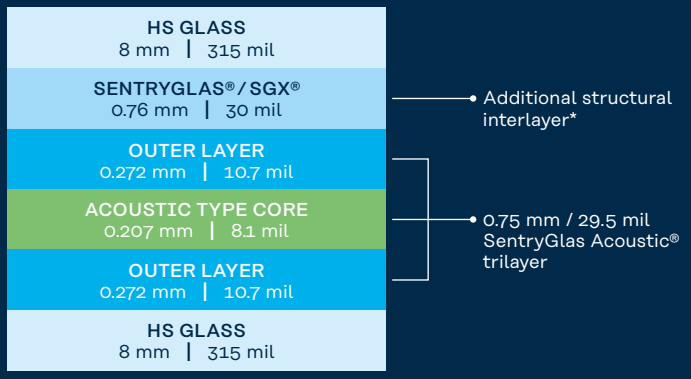
Final glass build-up and classification remain project- and system-specific.

Technical data – Finite-element modelling

Model the component regions

SentryGlas Acoustic® is supplied as one continuous trilayer. In a component-resolved finite-element model, its two SentryGlas® outer layers and acoustic TPE core are represented separately, together with any additional SentryGlas® or SentryGlas Xtra® ply used in the laminate.

Example calculation build-up



* Include only where required by the selected laminate construction.
The calculation examples use an additional 0.76 mm SentryGlas®



WORKED COMPONENT DEFINITION

Polymer component properties – 3 second load at 50 °C (122 °F)

Layer	Material	E MPa	E ksi	ν	t mm	t mil	ρ kg/mm³	ρ lb/in³	αT 1/K	ΔT °C	ΔT °F
5	Float glass	70000	10150	0.23	8.000	315	2.55e-9	0.092	1e-5	0	0
4	SGA® outer layer	37.6	5.45	0.49	0.272	10.7	1.07e-9	0.0386	1e-5	0	0
3	SGA® Core (TPE)	1.96	0.28	0.49	0.207	8.1	1.07e-9	0.0386	1e-5	0	0
2	SGA® inner layer	37.6	5.45	0.49	0.272	10.7	1.07e-9	0.0386	1e-5	0	0
1	Float glass	70000	10150	0.23	8.000	315	2.55e-9	0.092	1e-5	0	0

TAB 5 ➔ E = 2G (1 + ν), where ν is Poisson ratio (approximately 0.49).
Example: 8 mm glass / 0.75 mm SGA® / 8 mm glass, 3-second load at 50°C. Add SentryGlas® or SGX® as a separate material region where required.

Application-specific component inputs used in the examples

Application case	Temperature	E SentryGlas®	E skin 1	E core	E skin 2
Horizontal - framed	50°C	5.46	0.50	0.13	0.50
Self-weight - 50 years	35°C	9.03	2.58	0.46	2.58
Horizontal - point-supported	50°C	5.46	0.50	0.13	0.50
Self-weight - 50 years	35°C	9.03	2.58	0.46	2.58
Vertical - framed	50°C	78	37.6	1.96	37.6
3 kPa wind - 3 seconds	35°C	302	208	2.40	208
Vertical - four-point supported	50°C	78	37.6	1.96	37.6
2 kPa wind	35°C	302	208	2.40	208

TAB 6 ➔ All values are E modulus in MPa. Retain each application's supplied component inputs. Do not transfer values between calculation cases. Where SentryGlas Xtra® is selected, use the corresponding SGX® application data.

SELECTING THE DESIGN VALUE BY APPLICATION

01

SERVICE TEMPERATURE

Use the governing temperature for the glazing location and design situation.

02

LOAD DURATION

Match the modulus to the governing action duration in the applicable design method.

03

ROUTINE DESIGN

Use the complete trilayer G(t) for effective-thickness or equivalent-plate calculations.

04

DETAILED FE MODEL

Represent the two skin regions and TPE core separately using the component data.





Technical data – Calculation examples

Calculated response across four glazing configurations

The component-resolved build-up was evaluated in framed and point-supported arrangements. Results show the SGA® construction as a percentage of the corresponding 1.52 mm / 60 mil Trosifol® Clear / UltraClear baseline. The absolute calculated result appears in each case (baseline marker = 100%).

Horizontal framed

Self-weight I 50 years
1600 × 2200 mm



	Principal stress	Max. deflection
50 °C / 122 °F	3.21 MPa **91%**	2.53 mm **86%**
35 °C / 95 °F	3.20 MPa **90%**	2.52 mm **86%**

Horizontal point-supported

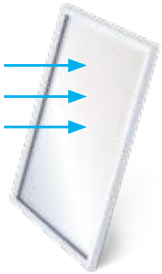
Self-weight I 50 years
1600 × 2200 mm



	Principal stress	Max. deflection
50 °C / 122 °F	13.87 MPa **70%**	8.95 mm **85%**
35 °C / 95 °F	16.10 MPa **82%**	7.80 mm **74%**

Vertical framed

3 kPa wind pressure I 3 seconds
1600 × 2200 mm



	Principal stress	Max. deflection
50 °C / 122 °F	14.54 MPa **85%**	7.30 mm **58%**
35 °C / 95 °F	14.12 MPa **83%**	6.75 mm **57%**

Vertical four-point supported

2 kPa wind pressure
1600 × 2200 mm



	Principal stress	Max. deflection
50 °C / 122 °F	46.70 MPa **69%**	19.82 mm **64%**
35 °C / 95 °F	43.92 MPa **67%**	18.86 mm **65%**

WHAT THE EXAMPLES SHOW: the component-resolved SGA® construction produced lower calculated glass stress and deflection than the Trosifol® Clear / UltraClear reference in every stated case. The magnitude depends on support condition, load duration, temperature and the selected component inputs.

SENTRYGLAS ACOUSTIC® (SGA®) INTERLAYER VISCOELASTIC PROPERTIES E(t)

Young's Relaxation Modulus, E(t) [MPa] – Trilayer Film

Temperature	Load duration													
	1 sec	3 sec	5 sec	10 sec	30 sec	1 min	5 min	10 min	30 min	1 hour	6 hours	12 hours	1 day	2 days
-20°C (-4°F)	217	140	118	94.7	62.2	45.2	21.9	17.2	13.2	11.9	10.1	9.77	9.50	9.37
0°C (32°F)	21.0	15.0	13.4	12.0	10.6	10.1	9.62	9.34	8.91	8.64	8.11	7.98	7.72	7.56
10°C (50°F)	13.6	11.2	10.8	10.4	9.86	9.59	9.01	8.79	8.30	8.03	7.61	7.52	7.40	7.28
20°C (68°F)	11.6	10.7	10.4	9.79	9.22	8.94	8.42	8.24	7.94	7.77	7.55	7.28	7.16	6.75
25°C (77°F)	10.8	9.97	9.71	9.35	8.70	8.43	7.90	7.69	7.34	7.16	6.78	6.51	6.39	5.98
30°C (86°F)	10.1	9.26	9.03	8.88	8.14	7.93	7.37	7.13	6.78	6.54	5.98	5.77	5.62	5.24
35°C (95°F)	9.28	8.58	8.37	8.44	7.70	7.43	6.85	6.61	6.19	5.92	5.21	5.00	4.84	4.46
40°C (104°F)	8.76	8.30	8.13	7.99	7.32	7.01	6.33	6.04	5.47	5.03	4.08	3.58	3.40	3.37
50°C (122°F)	7.33	6.24	5.96	5.61	5.13	4.72	3.98	3.69	3.26	3.01	2.42	2.21	2.02	1.85
60°C (140°F)	4.21	3.65	3.46	3.21	2.86	2.58	2.14	2.03	1.84	1.71	1.38	1.27	1.17	0.98
70°C (158°F)	2.36	2.23	2.09	1.94	1.76	1.65	1.39	1.25	1.05	0.93	0.66	0.58	0.51	0.45
80°C (176°F)	0.66	0.53	0.49	0.41	0.27	0.24	0.18	0.15	0.12	0.11	0.09	0.08	0.06	-

Young's Relaxation Modulus, E(t) [MPa] – Acoustic Core Layer

Temperature	Load duration													
	1 sec	3 sec	5 sec	10 sec	30 sec	1 min	5 min	10 min	30 min	1 hour	6 hours	12 hours	1 day	2 days
-20°C (-4°F)	76.3	45.0	36.9	28.9	18.3	13.1	6.17	4.84	3.69	3.31	2.81	2.72	2.65	2.61
0°C (32°F)	5.95	4.20	3.76	3.35	2.97	2.83	2.69	2.61	2.49	2.42	2.27	2.24	2.17	2.12
10°C (50°F)	3.80	3.12	3.01	2.90	2.76	2.68	2.52	2.46	2.32	2.25	2.14	2.12	2.09	2.07
20°C (68°F)	3.25	2.99	2.91	2.75	2.58	2.51	2.36	2.31	2.23	2.19	2.15	2.08	2.06	1.95
25°C (77°F)	3.03	2.80	2.73	2.63	2.44	2.37	2.23	2.18	2.10	2.07	1.99	1.94	1.92	1.79
30°C (86°F)	2.84	2.61	2.55	2.51	2.30	2.24	2.10	2.04	1.95	1.92	1.81	1.83	1.83	1.70
35°C (95°F)	2.63	2.44	2.38	2.41	2.20	2.13	2.00	1.96	1.92	1.91	1.99	1.99	2.08	1.86
40°C (104°F)	2.52	2.39	2.35	2.33	2.13	2.06	1.95	1.90	1.87	1.82	1.81	1.76	1.70	1.69
50°C (122°F)	2.20	1.96	1.98	2.01	1.90	1.85	1.71	1.61	1.50	1.46	1.32	1.20	1.05	0.93
60°C (140°F)	1.47	1.32	1.28	1.28	1.17	1.07	0.95	0.93	0.92	0.88	0.75	0.71	0.64	0.61
70°C (158°F)	0.88	0.90	0.90	0.84	0.82	0.83	0.76	0.65	0.67	0.59	0.43	0.35	0.30	0.27
80°C (176°F)	0.38	0.28	0.28	0.25	0.21	0.19	0.18	0.15	0.13	0.11	0.09	0.07	0.06	-

Young's Relaxation Modulus, E(t) [MPa] – Structural Skin Layer

Temperature	Load duration													
	1 sec	3 sec	5 sec	10 sec	30 sec	1 min	5 min	10 min	30 min	1 hour	6 hours	12 hours	1 day	2 days
-20°C (-4°F)	725	719	719	716	710	705	699	670	672	669	654	631	619	568
0°C (32°F)	601	589	580	571	551	539	512	500	474	426	367	317	299	282
10°C (50°F)	536	530	527	521	509	503	477	423	373	355	271	252	199	170
20°C (68°F)	480	459	426	400	389	370	355	340	296	237	163	148	118	109
25°C (77°F)	417	403	373	346	340	289	238	187	136	110	79.9	62.2	55.1	53.0
30°C (86°F)	314	299	283	270	250	237	163	148	113	77.0	48.0	31.4	26.6	24.7
35°C (95°F)	233	208	194	182	163	133	85.8	65.1	40.0	29.6	13.6	11.8	9.8	9.56
40°C (104°F)	149	137	120	105	98.0	79.9	44.4	35.5	20.7	15.4	7.81	5.89	5.51	5.45
50°C (122°F)	65.4	37.6	25.0	17.7	14.5	11.5	8.02	7.25	5.92	5.03	3.55	3.26	3.11	2.96
60°C (140°F)	14.5	11.2	9.86	7.51	6.36	5.57	4.14	3.70	2.96	2.66	2.01	1.81	1.72	1.27
70°C (158°F)	6.51	5.12	4.23	3.85	3.11	2.66	2.01	1.92	1.33	1.18	0.83	0.77	0.71	0.06
80°C (176°F)	0.92	0.80	0.68	0.53	0.30	0.27	0.18	0.15	0.12	0.12	0.09	0.09	0.06	-

5 days	1 week	3 weeks	1 month	1 year	10 years	50 years
9.00	8.88	8.49	8.40	7.79	7.20	6.51
7.28	7.20	6.93	6.86	5.97	5.09	4.55
7.11	6.79	6.52	6.37	5.37	4.64	4.04
6.49	6.51	5.92	5.80	4.91	3.82	3.15
5.65	5.62	5.06	4.94	4.05	3.05	2.46
4.82	4.73	4.23	4.11	3.17	2.31	1.81
4.00	3.84	3.36	3.25	2.31	1.54	1.14
3.11	2.87	2.37	2.13	1.45	0.92	0.68
1.66	1.41	1.18	1.09	0.63	0.37	0.28
0.90	0.81	0.70	0.62	0.34	0.22	0.16
0.37	0.31	0.26	0.24	0.15	0.10	0.07
-	-	-	-	-	-	-

TAB 7

5 days	1 week	3 weeks	1 month	1 year	10 years	50 years
2.51	2.47	2.37	2.34	2.17	2.01	1.82
2.05	2.03	1.95	1.94	1.69	1.44	1.29
2.03	1.95	1.88	1.84	1.57	1.37	1.20
1.89	1.91	1.75	1.73	1.52	1.22	1.02
1.71	1.72	1.57	1.54	1.36	1.08	0.90
1.59	1.61	1.43	1.41	1.17	0.89	0.70
1.71	1.65	1.43	1.42	1.02	0.66	0.46
1.66	1.60	1.27	1.11	0.81	0.48	0.34
0.82	0.73	0.62	0.60	0.27	0.17	0.13
0.55	0.46	0.43	0.38	0.18	0.11	0.08
0.22	0.18	0.16	0.14	0.08	0.06	0.04
-	-	-	-	-	-	-

TAB 8

5 days	1 week	3 weeks	1 month	1 year	10 years	50 years
554	551	544	522	471	411	388
252	248	222	209	162	127	115
138	126	109	101	66.9	48.8	39.1
87.3	79.6	62.8	54.4	32.9	19.8	14.9
45.6	42.0	32.9	31.4	16.6	9.8	7.22
21.1	18.3	16.4	15.3	9.09	5.86	4.47
8.17	7.79	6.87	6.35	4.47	3.11	2.58
4.65	4.11	3.52	3.28	2.07	1.39	1.1
2.72	2.2	1.81	1.59	1.27	0.68	0.5
1.18	1.13	0.92	0.84	0.53	0.36	0.27
0.49	0.41	0.36	0.32	0.21	0.15	0.12
-	-	-	-	-	-	-

TAB 9

SENTRYGLAS ACOUSTIC® (SGA®) INTERLAYER VISCOELASTIC PROPERTIES G(t)

Shear Relaxation Modulus, G(t) [MPa] – Trilayer Film

Temperature	Load duration													
	1 sec	3 sec	5 sec	10 sec	30 sec	1 min	5 min	10 min	30 min	1 hour	6 hours	12 hours	1 day	2 days
-20°C (-4°F)	73.3	47.4	39.9	32.0	21.0	15.3	7.39	5.82	4.46	4.00	3.41	3.30	3.21	3.17
0°C (32°F)	7.11	5.06	4.53	4.05	3.60	3.43	3.25	3.16	3.01	2.92	2.74	2.70	2.61	2.55
10°C (50°F)	4.58	3.77	3.64	3.50	3.33	3.24	3.04	2.97	2.81	2.71	2.57	2.54	2.50	2.46
20°C (68°F)	3.91	3.60	3.50	3.31	3.12	3.02	2.84	2.78	2.68	2.63	2.55	2.46	2.42	2.28
25°C (77°F)	3.65	3.37	3.28	3.16	2.94	2.85	2.67	2.60	2.48	2.42	2.29	2.20	2.16	2.02
30°C (86°F)	3.40	3.13	3.05	3.00	2.75	2.68	2.49	2.41	2.29	2.21	2.02	1.95	1.90	1.77
35°C (95°F)	3.14	2.90	2.83	2.85	2.60	2.51	2.32	2.23	2.09	2.00	1.76	1.69	1.64	1.51
40°C (104°F)	2.96	2.81	2.75	2.70	2.47	2.37	2.14	2.04	1.85	1.70	1.38	1.21	1.15	1.14
50°C (122°F)	2.48	2.11	2.01	1.90	1.73	1.60	1.34	1.25	1.10	1.02	0.82	0.75	0.68	0.63
60°C (140°F)	1.42	1.24	1.17	1.09	0.97	0.87	0.72	0.68	0.62	0.58	0.47	0.43	0.40	0.33
70°C (158°F)	0.80	0.75	0.71	0.66	0.59	0.56	0.47	0.42	0.35	0.31	0.22	0.20	0.17	0.15
80°C (176°F)	0.22	0.18	0.16	0.14	0.09	0.08	0.06	0.05	0.04	0.04	0.03	0.03	0.02	-

Shear Relaxation Modulus, G(t) [MPa] – Acoustic Core Layer

Temperature	Load duration													
	1 sec	3 sec	5 sec	10 sec	30 sec	1 min	5 min	10 min	30 min	1 hour	6 hours	12 hours	1 day	2 days
-20°C (-4°F)	25.8	15.2	12.5	9.75	6.18	4.42	2.08	1.63	1.25	1.12	0.95	0.92	0.89	0.88
0°C (32°F)	2.01	1.42	1.27	1.13	1.00	0.96	0.91	0.88	0.84	0.82	0.77	0.76	0.73	0.72
10°C (50°F)	1.28	1.05	1.02	0.98	0.93	0.91	0.85	0.83	0.79	0.76	0.72	0.72	0.71	0.70
20°C (68°F)	1.10	1.01	0.98	0.93	0.87	0.85	0.80	0.78	0.75	0.74	0.73	0.70	0.70	0.66
25°C (77°F)	1.02	0.95	0.92	0.89	0.83	0.80	0.75	0.74	0.71	0.70	0.67	0.66	0.65	0.61
30°C (86°F)	0.96	0.88	0.86	0.85	0.78	0.76	0.71	0.69	0.66	0.65	0.61	0.62	0.62	0.58
35°C (95°F)	0.89	0.82	0.80	0.81	0.74	0.72	0.68	0.66	0.65	0.64	0.67	0.67	0.70	0.63
40°C (104°F)	0.85	0.81	0.80	0.79	0.72	0.70	0.66	0.64	0.63	0.61	0.61	0.60	0.57	0.57
50°C (122°F)	0.74	0.66	0.67	0.68	0.64	0.63	0.58	0.55	0.51	0.49	0.44	0.41	0.36	0.31
60°C (140°F)	0.50	0.45	0.43	0.43	0.39	0.36	0.32	0.31	0.31	0.30	0.25	0.24	0.22	0.21
70°C (158°F)	0.30	0.30	0.30	0.28	0.28	0.28	0.26	0.22	0.23	0.20	0.14	0.12	0.10	0.09
80°C (176°F)	0.13	0.10	0.09	0.09	0.07	0.07	0.06	0.05	0.04	0.04	0.03	0.02	0.02	-

Shear Relaxation Modulus, G(t) [MPa] – Structural Skin Layer

Temperature	Load duration													
	1 sec	3 sec	5 sec	10 sec	30 sec	1 min	5 min	10 min	30 min	1 hour	6 hours	12 hours	1 day	2 days
-20°C (-4°F)	245	243	243	242	240	238	236	233	227	226	221	213	209	192
0°C (32°F)	203	199	196	193	186	182	172	169	160	144	124	107	101	95.3
10°C (50°F)	181	179	178	176	172	170	161	143	126	120	91.6	85.1	67.2	57.4
20°C (68°F)	162	155	144	135	131	125	120	115	100	80.1	55.1	50.0	39.9	36.8
25°C (77°F)	141	136	126	117	115	97.9	80.4	63.3	45.8	37.2	27.0	21.0	18.6	17.9
30°C (86°F)	106	101	95.6	91.2	84.8	80.1	55.1	50.0	38.2	26.0	16.2	10.6	8.97	8.35
35°C (95°F)	78.7	70.3	65.5	61.5	55.1	44.9	29.0	22.0	13.5	10.0	4.60	3.99	3.31	3.23
40°C (104°F)	50.3	46.3	40.5	35.5	33.1	27.0	15.0	12.0	6.99	5.20	2.64	1.99	1.86	1.84
50°C (122°F)	22.1	12.7	8.45	5.98	4.90	3.89	2.71	2.45	2.00	1.70	1.20	1.10	1.05	1.00
60°C (140°F)	4.90	3.78	3.33	2.54	2.15	1.88	1.40	1.25	1.00	0.90	0.68	0.61	0.58	0.43
70°C (158°F)	2.20	1.73	1.43	1.30	1.05	0.90	0.68	0.65	0.45	0.40	0.28	0.26	0.24	0.20
80°C (176°F)	0.31	0.27	0.23	0.18	0.10	0.09	0.06	0.05	0.04	0.04	0.03	0.03	0.02	-

5 days	1 week	3 weeks	1 month	1 year	10 years	50 years
3.04	3.00	2.87	2.84	2.63	2.43	2.20
2.46	2.43	2.34	2.32	2.02	1.72	1.54
2.40	2.30	2.20	2.15	1.81	1.57	1.37
2.19	2.20	2.00	1.96	1.66	1.29	1.06
1.91	1.90	1.71	1.67	1.37	1.03	0.83
1.63	1.60	1.43	1.39	1.07	0.78	0.61
1.35	1.30	1.14	1.10	0.78	0.52	0.38
1.05	0.97	0.80	0.72	0.49	0.31	0.23
0.56	0.48	0.40	0.37	0.21	0.12	0.09
0.30	0.27	0.24	0.21	0.12	0.08	0.05
0.12	0.10	0.09	0.08	0.05	0.03	0.03
-	-	-	-	-	-	-

TAB 10

5 days	1 week	3 weeks	1 month	1 year	10 years	50 years
0.85	0.84	0.80	0.79	0.73	0.68	0.61
0.69	0.68	0.66	0.65	0.57	0.49	0.44
0.69	0.66	0.63	0.62	0.53	0.46	0.41
0.64	0.64	0.59	0.59	0.51	0.41	0.35
0.58	0.58	0.53	0.52	0.46	0.37	0.30
0.54	0.54	0.48	0.48	0.39	0.30	0.24
0.58	0.56	0.48	0.48	0.34	0.22	0.16
0.56	0.54	0.43	0.37	0.27	0.16	0.12
0.28	0.25	0.21	0.20	0.09	0.06	0.04
0.18	0.16	0.15	0.13	0.06	0.04	0.03
0.07	0.06	0.05	0.05	0.03	0.02	0.01
-	-	-	-	-	-	-

TAB 11

5 days	1 week	3 weeks	1 month	1 year	10 years	50 years
187	186	184	176	159	139	131
85.1	83.8	75.0	70.6	54.7	42.9	38.9
46.6	42.6	36.8	34.1	22.6	16.5	13.2
29.5	26.9	21.2	18.4	11.1	6.69	5.03
15.4	14.2	11.1	10.5	5.61	3.31	2.44
7.13	6.18	5.54	5.17	3.07	1.98	1.51
2.76	2.63	2.32	2.15	1.51	1.05	0.87
1.57	1.39	1.19	1.11	0.70	0.47	0.37
0.92	0.74	0.61	0.54	0.43	0.23	0.17
0.40	0.38	0.31	0.28	0.18	0.12	0.09
0.17	0.14	0.12	0.11	0.07	0.05	0.04
-	-	-	-	-	-	-

TAB 12

One specified product – component-resolved calculation

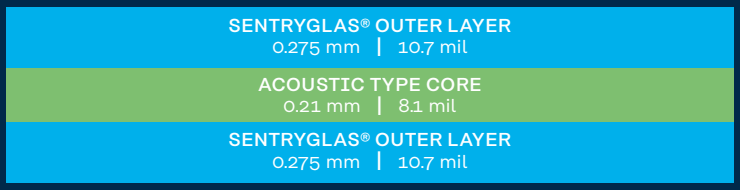
SPECIFICATION VIEW

One continuous interlayer

SentryGlas Acoustic® interlayer
0.75 mm | 29.5 mil

The three internal regions are not specified as separate interlayers.





Resolve both skin regions and the core using properties matched to the same load duration and temperature.

Worked finite-element inputs – 50 °C | 3 s

Material region	G(t) [MPa]	E [MPa]	Poisson v	Thickness [mm]
SentryGlas® outer layer	12.7	37.6	0.49	0.272
Acoustic TPE core	0.46	1.37	0.49	0.207
SentryGlas® inner layer	12.7	37.6	0.49	0.272

TAB 13 Elastic modulus calculated as E = 2G (1 + v). Values apply only to the stated 3-second, 50 °C model condition.

Illustrative model conditions and result

LAMINATE	PANEL / SUPPORT	DESIGN CONDITION	MODEL RESULT
8 mm FT 0.75 mm SentryGlas Acoustic® 8 mm FT	2.2 x 1.6 m; four rotules 100 x 100 mm from each corner	2 kPa wind load; 3-second duration; 50 °C | 122 °F	20.98 mm maximum out-of-plane deflection in the stated example

Design rule: do not use one generic interlayer property in a component-resolved model; assign matched properties to each material region.

Use an adhesion promoter for all applications that result in SentryGlas Acoustic® interlayer not being laminated to the tin-side of the glass.

Validated performance

Security and hurricane performance

SentryGlas Acoustic® has been evaluated in laminate constructions for forced-entry resistance and in a combined interlayer system for hurricane impact. Results are specific to the tested build-up, specimen and complete glazing assembly.



EN 356 axe test – tested laminate results

Tested laminate construction	Pane 1 total	Pane 2 total	Pane 3 total	Class
4 mm AN / 3.04 mm SentryGlas Acoustic® + SentryGlas Xtra® combination / 4 mm AN	45	41	42	P6B
4 mm AN / 4.56 mm SentryGlas Acoustic® + SentryGlas Xtra® combination / 4 mm AN	53	54	53	P7B
4 mm AN / 1.52 mm SentryGlas Xtra® / 4 mm AN / 2.28 mm SentryGlas Acoustic® + SentryGlas Xtra® combination / 4 mm AN	75	68	67	P7B

TAB 14 ➔ AN = annealed glass. Pane totals reproduce the source test record and combine 16 hammer strikes with the recorded axe strikes. The class shown is the reported EN 356 classification for the complete three-pane test.

Hurricane large-missile impact

CITED COMPARATIVE TEST

ASTM E1996-09

Large Missile Impact - Level D

Test specimen	800 x 1829 mm
Peak pressure	6.94 kPa | 145 psf
Test outcome	Pass

Tested laminate system: a combined construction incorporating SentryGlas Acoustic® and SentryGlas® interlayers.

WHAT THE RESULT MEANS

Impact resistance is only one part of qualification

01 IMPACT	Resist windborne-debris penetration in the cited large-missile test.
02 CYCLIC PRESSURE	Verify repeated positive and negative pressure loading on the assembly.
03 RETENTION	Maintain the glazing barrier after glass fracture within the tested system.

Applicable test and approval routes

Standard	Purpose	Brochure interpretation
EN 356	Manual attack/axe resistance	P6B and P7B apply only to the listed tested laminate constructions
ASTM E1996	Windborne-debris impact specification	The cited combined system passed Large Missile Level D impact testing
ASTM E1886	Missile impact and cyclic pressure test method	Complete windows, curtain walls, doors and attachment details require assembly-level verification
TAS 201/TAS 203	Impact/cyclic wind-pressure routes	Use the applicable jurisdictional approval route and retain the approved system build-up

TAB 15

Verification rule: do not transfer a laminate result to another glass build-up, frame, anchorage or glazing method without project-specific verification.

Durability and usability

Weathering and sealant usability

Accelerated exposure, natural Florida weathering and direct edge inspection provide complementary evidence of optical and laminate durability. Sealant conclusions remain specific to the tested materials and conditions.

Accelerated and natural weathering validation

Exposure route	Test basis	Reported evidence
Accelerated weathering	3000 h Xenon exposure	Passed; minimal haze increase, stable optical appearance and low colour shift were reported.
Natural weathering	Outdoor Florida exposure 0-48 months	Haze and colour difference remained low across five measurement points; no significant change was reported at 48 months.

TAB 16 ➔

Florida natural-weathering measurements

Exposure [months]	Haze SG5000 System [%]	Haze SG6000 System [%]	Delta E SG5000 System	Delta E SG6000 System
0	0.89	0.83	0.00	0.00
12	0.70	0.68	0.34	0.22
24	0.60	0.60	0.32	0.21
36	0.70	0.78	0.37	0.26
48	0.89	0.80	0.38	0.25

TAB 17 ➔ **48-month interpretation:** haze was equal to or below its initial value in both systems; Delta-E remained below 0.4.

TESTED CONDITION

48 months – outdoor Florida

Glass	6 mm | 1/4 in
Interlayer	2.28 mm | 90 mil total package
Glass	6 mm | 1/4 in

OBSERVED EDGE CONDITION

No visible edge defects or delamination

01 Exposed laminate edge inspected after 48 months.

02 No visible edge defects or delamination reported.

03 Optical clarity and colour remained stable in the cited test.

Sealant usability programme

Sealant supplier	Programme status	Brochure interpretation
Tremco	Testing completed	Compatibility applies only to the tested sealant grade, laminate build-up and stated conditions.
Sika	Testing completed	Compatibility applies only to the tested sealant grade, laminate build-up and stated conditions.
Dow	Testing completed	Do not claim compatibility until the relevant assessment and project confirmation are complete.

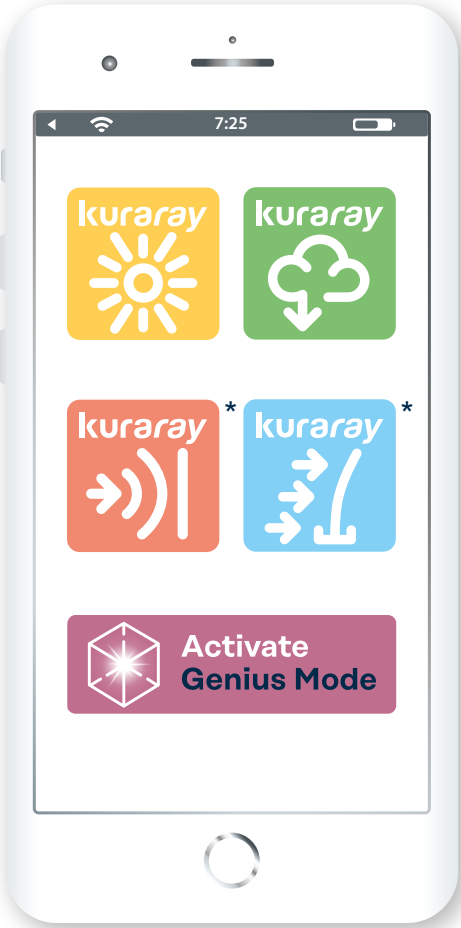
TAB 18 ➔

Tools & Apps

WINSLT
For calculating the light, solar and heat parameters of glazing specifically containing films from the Trosifol® & SentryGlas® product range.

SOUNDLAB AI
First global acoustic calculator based on artificial intelligence for calculating/ estimating acoustic performance of monolithic, double and triple glazed units.

GENIUS MODE
AI-powered Genius Mode optimizes glass design across Carbon Reduce AI, SoundLab AI and Strength Lab AI web apps.



* Only available as web app

CARBON REDUCE AI
Our new Carbon Reduce AI tool uses the power of artificial intelligence to help you determine the carbon footprint of glass structures such as laminated safety glass and insulating glass.

STRENGTH LAB AI
The goal of the Strength Lab AI tool is to provide designers, engineers, and architects with an efficient tool to facilitate the design and evaluation of glazing systems in terms of structural properties. This tool provides rapid analysis of virtually any glazing configuration, dimension and load case. Additionally, standard modules allow easy evaluation of results according to ASTM, EN and DIN standards.

Contact



FOR FURTHER INFORMATION
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