



MATERIAL PROPERTIES OF PVB INTERLAYERS USED IN STRATOBEL AND STRATOBEL STRONG LAMINATED GLASS

The material properties in this document comprise data for the PVB interlayers used in AGC laminated glass products. These values can be used for calculation of load resistance and glass deflection in the countries where national legislation does not define other data or methods. These material properties are representative of interlayers and glazings that have been tested according to the mentioned conditions.

Please contact your AGC representative or AGC TAS (tas@eu.agc.com) if you require other properties or for further information.

Louvain-la-Neuve, 20th of June 2018

A handwritten signature in black ink, consisting of a large, stylized loop followed by a horizontal line extending to the right.

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LITERATURE:

prEN16612:2017
prEN16613:2017

These data are based on information available at the time of writing and are subject to change without notice. AGC Glass Europe cannot be held responsible for any deviation between these values and conditions on-site. This document is purely informative and in no way implies any commitment by AGC Glass Europe. The customer undertakes to comply fully and in good faith with AGC's recommendations, with accepted good practice and with the applicable standards and guidelines of approved institutes, professional institutes and organisations or other similar bodies. AGC's liability remains limited to those AGC products manufactured and delivered by AGC only.

MATERIAL PROPERTIES OF PVB INTERLAYERS USED IN STRATOBEL AND STRATOBEL STRONG LAMINATED GLASS

Loading	Load duration	Temperature range	Young's modulus E (MPa) **	
			Stratobel Strong	Stratobel

WIND

Wind gust (Mediterranean areas)	3 sec.	0°C to 35 °C	80	2.4
Wind gust (other areas)	3 sec.	0°C to 20 °C	1007	42
Wind storm (Mediterranean areas)	10 min.	0°C to 35 °C	3.0	1.2
Wind storm (other areas)	10 min.	0°C to 20 °C	540	3.06

PERSONAL LOADS

Barrier personal load - normal duty	30 sec.	0°C to 30 °C	115	2.1
Barrier personal load - crowds	5 min.	0°C to 30 °C	20	1.5
Maintenance	30 min.	0°C to 40 °C	1.8	0.9

SNOW

Snow (external canopies)	3 weeks	-20°C to 0°C	6.8	min. 0.9*
Snow (roof)	5 days	-20°C to 20°C	19	1.2

CLIMATIC LOADS IN IGU

Summer	6 hours	20°C to 40°C	1.5	0.77
Winter	12 hours	-30°C to 20°C	111	1.66

PERMANENT LOADS

Self-weight, change in altitude etc.	50 years	-20°C to 60°C	N/A	N/A
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NOTES:

* Values for 0°C not available, however higher stiffness has been proven

** The values correspond to the highest temperature in the given temperature range

OTHER MATERIALS PROPERTIES OF INTERLAYERS

	Poisson's ratio	Density (kg/m ³)	Thermal Conductivity ASTM F 5930 (W/m/(m ² °C))
Stratobel	0.5	1070	
Stratobel Strong	0.5	1070	0.205 – 0.226

INTERLAYER THICKNESS

	Nominal thickness (mm)
Stratobel xx.1	0.38
Stratobel & Stratobel Strong xx.2	0.76
Stratobel xx.3	1.14
Stratobel & Stratobel Strong xx.4	1.52
Stratobel & Stratobel Strong xx.6	2.28

MAXIMUM SURFACE TEMPERATURE

Maximum allowed surface temperature for Stratobel Strong is in the range between 70°C and 90°C depending on other conditions like duration of exposure and/or relative humidity index. Aesthetics could be affected by long exposure in hot and/or humid environment. For calculation of load resistance and glass deflection, the surface temperature based on the dominant load should be selected accordingly to prEN16612 or valid local standards and guidelines.

STRATOBEL STRONG: YOUNG'S MODULUS OF THE INTERLAYER

Load Duration	Temp								
	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
	MPa								
1 sec	1101	782	449	154	27	6.8	3.2	2.4	2.1
3 sec	1007	700	319	80	11	3.8	2.4	2.1	1.8
30 sec	812	466	115	13	3.0	2.4	1.8	1.8	1.5
1 min	735	387	74	8.3	2.7	2.1	1.8	1.5	1.5
5 min	596	213	20	3.5	2.1	1.8	1.5	1.5	1.2
10 min	540	162	13	3.0	2.1	1.8	1.5	1.2	1.2
30 min	413	83	5.6	2.4	1.8	1.5	1.2	1.2	0.9
1 hour	316	47	4.1	2.1	1.8	1.5	1.2	0.9	0.6
6 hours	162	12	2.4	1.8	1.5	1.2	0.9	0.6	0.3
12 hours	111	7.5	2.4	1.8	1.5	0.9	0.9	0.6	0.3
1 day	65	5.0	2.1	1.5	1.2	0.9	0.6	0.3	0.3
5 days	19	2.7	1.8	1.5	0.9	0.6	0.3	0.3	--
1 week	14	2.7	1.8	1.5	0.9	0.6	0.3	--	--
3 weeks	6.8	2.1	1.5	1.2	0.9	0.6	0.3	--	--
1 month	5.3	2.1	1.5	1.2	0.6	0.3	0.3	--	--
1 year	2.4	1.7	1.2	0.6	0.3	--	--	--	--
10 years	1.9	1.4	0.8	0.3	--	--	--	--	--
15 years	1.9	1.3	0.7	0.3	--	--	--	--	--
50 years	1.8	1.2	0.6	--	--	--	--	--	--

Young's modulus E' is calculated using formula $E' = 2G' (1+\nu)$ where ν = Poisson's ratio of approximately 0.476 for isotropic polymeric material as measured in accordance with ASTM D638.

Source : Product technical sheet – Saflex structural_041318