



Kuraray Performance Monitoring Program

The Performance Monitoring program (PM program) is a unique service offered by Kuraray. The objective of the program is to optimize and maintain Kuraray products, including Trosifol® PVB/Butacite® PVB/SentryGlas® ionoplast, with an individual customer process. The samples are sent to Kuraray Technical Service Laboratory for analysis. After carrying out a series of standard tests, a complete report is provided describing the quality of the laminated glass. Through routine monitoring of Kuraray product performance in the laminating plant, both the customer and Kuraray can be assured a consistent laminate quality. Therefore, Kuraray PVB Division highly recommends customers to send the samples periodically.

Customer Name: Glass Toughening Services

Date of Sample Received: 2019-07-25

Date of Report Sent: 2019-07-30

Summary

Sample: 5mm Annealed Glass + 1.52mm SentryGlas® + 5mm Annealed Glass

PM Test Result

Laminate Nbr	Haze (%)	H2O (%)	Pummel		CNST (In->Out)	Caliper (mm)			
			In	Out		Laminate	In_Glass	Out_Glass	SG
TS&D 2019-0295-01	0.20	0.092	7.0	7.0	ATTA	11.356	4.841	4.845	1.670
TS&D 2019-0295-02	0.23	0.101	7.0	7.0	ATTA	11.336	4.841	4.845	1.650
TS&D 2019-0295-03	0.17	0.092	7.0	7.0	ATTA	11.314	4.832	4.845	1.637
TS&D 2019-0295-04	0.20	0.102	7.0	7.0	ATTA	11.327	4.835	4.835	1.657
TS&D 2019-0295-05	0.19	0.122	7.0	7.0	ATTA	11.304	4.835	4.835	1.634
TS&D 2019-0295-06	0.20	0.083	7.0	7.0	ATTA	11.339	4.836	4.840	1.663
Average	0.20	0.099	7.0	7.0	ATTA	11.329	4.837	4.841	1.652

Bake Test Result

Laminate Nbr	Bake Test					De-airing Quality
	Initial	105	120	135	150	
TS&D 2019-0295-01	0	0	0	0	0	Excellent
TS&D 2019-0295-02	0	0	0	0	0	Excellent
TS&D 2019-0295-03	0	0	0	0	0	Excellent
TS&D 2019-0295-04	0	0	0	0	0	Excellent
TS&D 2019-0295-05	0	0	0	0	0	Excellent
TS&D 2019-0295-06	0	0	0	0	0	Excellent



Remarks

- Haze (%): Haze level (Specification value: 0 ~ 1.5 (%))
- Moisture (%): Moisture content (Specification value: 0 ~ 0.15 (%))
- Construction: Glass Construction (Air Side, Tin Side)
- Pummel: Adhesion (Specification value: 6 ~ 10)
- Bake Test: Performance test to estimate de-airing efficiency

Bubble Temperature	Quality
105°C	Poor
120°C	Fair
135°C	Good
150°C	Very Good
>150°C	Excellent