

Technical Report

RST MS 120126

Customer	R&G GmbH															
Material	<p>Adhesives:</p> <table border="0"> <tr> <td>SP Gurit</td> <td>Spabond 345 fast</td> <td>Batch 858455</td> </tr> <tr> <td></td> <td>Spabond 345 slow</td> <td>Batch 800450</td> </tr> <tr> <td>Elan-tech</td> <td>ADH 90.90</td> <td>Batch 210940</td> </tr> <tr> <td></td> <td>ADH 90.91</td> <td>Batch 219145</td> </tr> <tr> <td></td> <td>ADH 891.891</td> <td>Batch 227741</td> </tr> </table>	SP Gurit	Spabond 345 fast	Batch 858455		Spabond 345 slow	Batch 800450	Elan-tech	ADH 90.90	Batch 210940		ADH 90.91	Batch 219145		ADH 891.891	Batch 227741
SP Gurit	Spabond 345 fast	Batch 858455														
	Spabond 345 slow	Batch 800450														
Elan-tech	ADH 90.90	Batch 210940														
	ADH 90.91	Batch 219145														
	ADH 891.891	Batch 227741														
Type of analysis	<p>Products Characterization:</p> <ul style="list-style-type: none"> • Viscosity test IO-10-50 (ISO 3219:1993) • Glass Transition temperature (ASTM D 3418-82) • Lap shear test (ASTM D1002) • T peel test (ASTM D1876) • Impact test (ASTM D950) • Gelation time at 25°C (IO-10-88) 															
Test conditions	<p>Test were performed with</p> <ul style="list-style-type: none"> • Rheometer Physica Anton Paar - MRC 300 • DSC Perkin Elmer Series 6 • Dynamometer Instron 55R1185 															

Results
Table 1 – Viscosity of the systems

Product name	Viscosity at 25°C, Shear 2 s ⁻¹ (Pas)
Resin Spabond 345	460
Hardener Fast	150
Hardener Slow	250
AS90	400
AW90	100
AW91	110
AS891	390
AW891	300

(*) = Plate-Plate configuration, 1mm GAP

Table 2 - Systems data

Test	Spabond 345 Fast	ADH90.90	Spabond 345 Slow	ADH90.91	ADH891.891
Gelation time on 1mm @ 25°C	3hrs 45mins	3hrs	8hrs	6hrs 30mins	4hrs
Lap shear strength @25°C [§] (MPa) (curing cycle 5hrs 70°C)	38,3 ± 0,8	31,0 ± 1,0	39,6 ± 0,5	35,0 ± 1,0	35,5 ± 0,5
Glass transition (°C) (curing cycle 5hrs 70°C)	77	74	78	82	80
Lap shear strength @25°C [§] (MPa) (curing cycle 6hrs rT + 16hrs 50°C)	32,4 ± 1,0	29,0 ± 1,0	36,8 ± 0,8	34,0 ± 1,0	--*
Glass transition (°C) (curing cycle 6hrs rT + 16hrs 50°C)	76	70	79	79	--*
T peeling strength @25°C [#] (N/cm) (curing cycle 5hrs 70°C)	9,8 ± 5,9	23,2± 6,5	10,2± 6,2	22,1 ± 5,9	3,9 ± 0,5
Impact strength @25°C [#] (KJ/m ²) (curing cycle 5hrs 70°C)	19,7± 9,5	24,6± 7,5	--	23,2± 6,7	22,6± 4,1

* This curing cycle is not recommended for this adhesive

§ Test were performed on Stainless steel AISI 316, surfaces were sanded and degreased with acetone

Test were performed on Aluminium 2024, surfaces were sanded and degreased with acetone

Notes and comments

The data reported are referred to specific test on the above mentioned batch numbers of the products. The test shows that Spabond adhesives have little bit higher performance in pure lap shear whereas ADH 90.90 and ADH90.91 products shows higher performance in T-peeling, regarding impact strength ADH 90.90 and ADH 90.91 shows values little bit higher than the Spabond products and little bit less dispersed. The adhesion data of ADH891.891 on aluminium are not really representative of the real performance of the products because this adhesive is formulated to give the best performance on composite materials with a post curing.

ELANTAS Italia S.r.l.

R&D

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