



# MOMENTIVE

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## Test report

Project name	:	Pilkington
Project number	:	project RK2010005
Type of test	:	Adhesion
Date	:	2-Mar-10
Tested by	:	Ricardo Koens

### Summary:

Mr. Smirnov has sent some aluminum, steel and glass profiles to test for adhesion with different types of sealant (SSG4400, SSG4000E, IGS3723, IGS3703, Silglaze N, Silplus X, SCS1200 HC, SCS1000). Some of them will be tested with and without primer SS4004P.

SSG4000E and SSG4400 on aluminum substrates; 8606 white coated and 8603 white coated need to be primed with SS4004P to get a perfect adhesion during all test conditions.

SSG4000E and SSG4400 on aluminum substrates; 8606 not coated, 8936, 55514 and 50346 show perfect adhesion during all test conditions without a primer.

IGS3703E and IGS3723 on Pilkington glass 6 mm and 8 mm thick can be used without a primer to show perfect adhesion during all test conditions.

Silplus X and SCS1000 on the yellow steel substrate show perfect adhesion during all test conditions.

Silglaze N can be used on the yellow steel substrate. It needs to be understood that Silglaze N adheres to the coating perfectly, but when adhesion was checked the force applied made the coating release from the steel. The coating adheres less to the steel than the sealant to the coating.

SCS1200 HC cannot be used on the yellow steel substrate.

**Purpose of testing:**

Mr. Smirnov has sent some aluminum, steel and glass profiles to test for adhesion with different types of sealant (SSG4400, SSG4000E, IGS3723, IGS3703, Silglaze N, Silplus X, SCS1200 HC, SCS1000). Some of them will be tested with and without primer SS4004P.

**Substrate information:**

Substrate	Type	Cleaning product
Aluminum	8606 white coated	MEK
Aluminum	8606 not coated	MEK
Aluminum	8936	MEK
Aluminum	8603 white coated	MEK
Aluminum	55514	MEK
Aluminum	50346	MEK
Glass	Pilkington float glass 6 mm	MEK
Glass	Pilkington float glass 8 mm	MEK
Steel	Yellow coated	MEK

**Test(s):**

Prepare peel adhesion samples with different types of sealant (SSG4400, SSG4000E, IGS3723, IGS3703, Silglaze N, Silplus X, SCS1200 HC, SCS1000). Some of them will be tested with and without primer SS4004P.

**Test conditions:**

Initial : 14 days room temperature cure ( $23 \pm 2$  °C,  $50 \pm 5\%$  RH)  
Water immersion : 14 days initial + 7 days H<sub>2</sub>O  
Oven 100 °C : 14 days initial + 7 days H<sub>2</sub>O + 7 days 100°C

**Results:**

**Adhesion results on Aluminum substrates**

Substrate Aluminum	Grade	Primer	Initial CF (%)	Water immersion CF (%)	Oven 100 °C CF (%)
8606 white coated	SSG4400	none	0	80	100
		SS4004P	100	100	100
	SSG4000E	none	0	100	100
		SS4004P	100	100	100
8606 not coated	SSG4400	none	100	100	100
		SS4004P	100	100	100
	SSG4000E	not primed	100	100	100
		SS4004P	100	100	100
8936	SSG4400	none	100	100	100
		SS4004P	100	100	100
	SSG4000E	none	100	100	100
		SS4004P	100	100	100
8603 white coated	SSG4400	none	0	0	100
		SS4004P	100	100	100
	SSG4000E	none	50	50	50
		SS4004P	100	100	100
55514	SSG4400	none	100	100	100
		SS4004P	100	100	100
	SSG4000E	none	100	100	100
		SS4004P	100	100	100
50346	SSG4400	none	100	100	100
		SS4004P	100	100	100
	SSG4000E	none	100	100	100
		SS4004P	100	100	100

**Adhesion results on Glass Substrates**

Substrate Float Glass	Grade	Initial CF (%)	Water immersion CF (%)	Oven 100 °C CF (%)
Pilkington 6 mm	IGS3723	100	100	100
	IGS3703E	100	100	100
Pilkington 8 mm	IGS3723	100	100	100
	IGS3703E	100	100	100

\* There is no primer used on the glass

**Adhesion results on Steel substrate**

Substrate	Grade	Initial CF (%)	Water immersion CF (%)	Oven 100 °C CF (%)
Steel Yellow coated	Silglaze N	100	100 <sup>1</sup>	100
	Silplus X	100	100	100
	SCS1200 HC	100	0	100
	SCS1000	100	100	100

\* There is no primer used on the steel

<sup>1</sup> The coating was pulled from the steel, but the adhesion to the coating was 100%.



**Picture 1. Yellow coating pulled from the steel. Adhesion to the coating 100%**

It needs to be understood that Silglaze N adheres to the coating perfectly, but when adhesion was checked the force applied made the coating release from the steel. The coating adheres less to the steel than the sealant to the coating.

**Conclusion:**

SSG4000E and SSG4400 on aluminum substrates; 8606 white coated and 8603 white coated need to be primed with SS4004P to get a perfect adhesion during all test conditions.

SSG4000E and SSG4400 on aluminum substrates; 8606 not coated, 8936, 55514 and 50346 show perfect adhesion during all test conditions without a primer.

IGS3703E and IGS3723 on Pilkington glass 6 mm and 8 mm thick can be used without a primer to show perfect adhesion during all test conditions.

Silplus X and SCS1000 on the yellow steel substrate show perfect adhesion during all test conditions.

Silglaze N can be used on the yellow steel substrate. It needs to be understood that Silglaze N adheres to the coating perfectly, but when adhesion was checked the force applied made the coating release from the steel. The coating adheres less to the steel than the sealant to the coating.

SCS1200 HC cannot be used on the yellow steel substrate.

**Approved by: R. Koens**

**Date: 2-Mar-10**

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