

Comparing TopSeal with Market Leading MSP and Silicone

Comparing the adhesion and grab performance of Top Seal versus a market leading MSP Adhesive and a market leading silicone. Results show there is better performance in terms of adhesion and as a panel adhesive when using TopSeal.

Products and Test Methods

Products

TopSeal (1)

Market leading clear MSP (2)

Market leading silicone (3)

Test Standard

Test Description

Bead adhesion/180° peel test

A 10mm wide by 5cm long bead is applied to each substrate. Specimens are allowed to cure for 14 days curing at 23°C/50%RH. A small incision is made at the end of the bead. The bead is peeled off at an angle of 180° using a pair of pliers.



Grab performances

A PVC shower panel was cut measuring 1020mm x 400mm. Each panel weighed approx. 1.8kg. Cartridges were weighed before and after application to assess how much adhesive was used.

Adhesive was dispensed, using a V shaped nozzle, onto PVC panel and immediately applied to a plasterboard wall. The top position of the panel was marked and time was recorded. Measurements were then taken from the mark to the top of the PVC panel at 2 minutes, 5 minutes, 30 minutes and 60 minutes, to find out how much the panel has slid.

The panels were also assessed after 24 hours for any signs of further movement.

Image 1. Application of adhesive

Image 2. Panels adhered to plasterboard



Results

Grab Performances

	Topseal (1)	Clear MSP (2)	Silicone (3)
Panel before adhesive application weight (g)	1808	1807	1808
Panel after adhesive application weight (g)	1855	1860	1881
Mass of Adhesive (g)	47	53	73
Density (g/cm3)	1.56	1.6	1.6
Volume of Adhesive applied (mL)	30.13	33.13	45.63
Sliding After: 2min (mm)	0	3.0	41.0
5min (mm)	0	3.0	46.0
30min (mm)	0	3.0	104
60 (mm)	0	4.0	N/A (slid off)

Topseal did not move after 1 hour once placed on plasterboard wall.

Clear MSP (2) moved 4mm after 1 hour on a plasterboard wall.

After 24 hours there was no further movement from any of them.

Silicone (3) started to slide immediately and continued to slide until it reached the bottom of the plasterboard wall, at which time it was removed.

Bead Peel Test

Surface: Panel

Test after 14 days at 23°C/50%RH



Clear MSP

Silicone

TopSeal

Test after 14days at 23°C/50%RH + 7 days in water



Clear MSP

Silicone

TopSeal

	TopSeal	Clear MSP	Silicone
Test after 14days at 23°C/50%RH	0/100/0	100/0/0	100/0/0
Test after 14days at 23°C/50%RH + 7 days in water	0/100/0	100/0/0	100/0/0
Test after 14d at 23°C/50%RH + 7d in water + 7 days in Water cleaning agent	0/100/0	100/0/0	100/0/0

Failure mode results are described as follows: % Adhesive Failure/ % Cohesive failure/ % Substrate Failure
In grey: Full cohesive failure mode (best results) **In red:** Adhesive failure (poor adhesion)

Surface: Ceramic

Test after 14days at 23°C/50%RH



TopSeal

Clear MSP

Silicone

Test after 14days at 23°C/50%RH + 7 days in water



TopSeal

Clear MSP

Silicone

	TopSeal	Clear MSP	Silicone
Test after 14days at 23°C/50%RH	0/100/0	100/0/0	100/0/0
Test after 14d at 23°C/50%RH + 7d in water + 7 days in Water cleaning agent	0/100/0	100/0/0	100/0/0

Failure mode results are described as follows: % Adhesive Failure/ % Cohesive failure/ % Substrate Failure
In grey: Full cohesive failure mode (best results) **In red:** Adhesive failure (poor adhesion)

Observations and Conclusions

- Poor adhesion properties on both surfaces are obtained with Clear MSP and Silicone products with an adhesive failure. While a full cohesive failure mode is observed with Topseal.
- No significant impact of water immersion nor cleaning agent is observed when an initial good adhesion is obtained after 14 days.
- To summarize, Topseal characterized as “adhesive and sealant” proves better adhesion properties and initial grab performances than Market leading Clear MSP and Silicone.