

Project #: Non Specific

Boucherville, QC, March 22 2022

CONTEXT

Advantica-L Control is a PVC laminated galvanized steel specially designed for usage in Controlled Environment like Clean Rooms, Processing facilities and Cold rooms. The nature of the PVC Laminate makes it highly durable, corrosion resistant and scratch resistant and ensure an easy cleanability, but it can also present some challenges for sealant adhesion.

This document will present a comparison of different type of silicones commonly used with Norbec's products.

TECHNICAL DATA EVALUATION

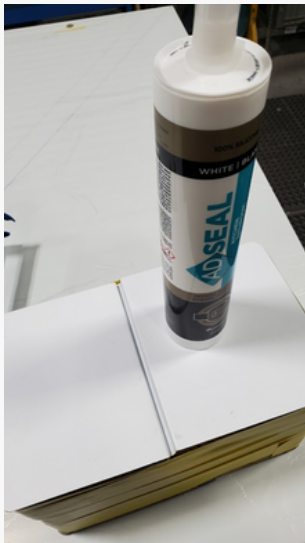
Parameter	Adfast Adseal 4800 series	Adfast Adseal 455 Series	Dow Corning Dowsil 786
Sealant type	Acetoxy Silicone Adhesive	Neutral base Silicone Adhesive	Acetoxy Silicone
COV	20 g/L	40.5 g/L	22g/L
ASTM E84 FSI / SDI	N/A	0 / 20	
Dry to touch	20 min	10 min	20 min
Complete Curing	21 days	14-21 days	7 days
Main application	<ul style="list-style-type: none"> Cooler / Freezer Kitchen and Bathroom Waterproofing joints 	<ul style="list-style-type: none"> Windows Int/Ext Curtain wall Cooler / Freezer Clean Room Laboratory Ventilation 	<ul style="list-style-type: none"> Kitchen and Bathroom Waterproofing
Non designed for (further tests and validation may be required)	<ul style="list-style-type: none"> Constant Immersion Acidic and Alcaline environment Sealant bead under ¼ in Plastics adhesion 	<ul style="list-style-type: none"> Constant Immersion Acidic and Alcaline environment Sealant bead under ¼ in 	<ul style="list-style-type: none"> Structural silicone glazing Constant Immersion Acidic and Alcaline environment Medical / Pharmaceutical Use
Min. Operation Temp.	-58 C	-40 C	
Max. Operation Temp.	204 C	232 C	
CFIA accepted	Yes	Yes	Yes

SEALANT VALIDATION WITH ADVANTICA

To evaluate adhesion of the different sealant to Advantica, a small sample has been prepared:

- Noroc-L panel with a joint and Advantica Steel facings
- Adseal 4800 Series applied in the panel joint
- Adseal 4800 Series applied on the surface
- Adseal 455 Series applied on the other surface of the panel
- Curing time: 19 hours - Note that this is inferior to the recommended curing time

- No specific cleaning and priming of the surfaces were made.
- Dow corning Dowsil 786 and Adseal 4800 are deemed equivalent



Sample before application



Sealant at time of application



Sample holding by the Adseal 4800 Series sealant alone



Pull setup example



Closeup of scratched surface

Silicone was then scratched with a plastic blade. The main goal was to validate how difference between adhesion of both sealants. Sealant required similar effort to remove. It was not possible to simply pull the silicone on one end and removing the whole bead, proof that sealant adhere well to the surface.

A fish scale pull test was initiated, but as the 21-day curing period was not completed, test is deemed nonsignificant regarding real life situation. Nonetheless, it took 26 lbs of force (which is more than necessary for a non-structural application) to separate both panels (silicone was still "liquid" in the middle of the joint).

CONCLUSIONS

Combined with the Norbec team and Installer's experience, we ensure that all tested products aforementioned present a good adhesion with Advantica-L Control when used as a sealant (weathertightness, non-structural). It is highly recommended to clean surface properly before sealant application.



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