

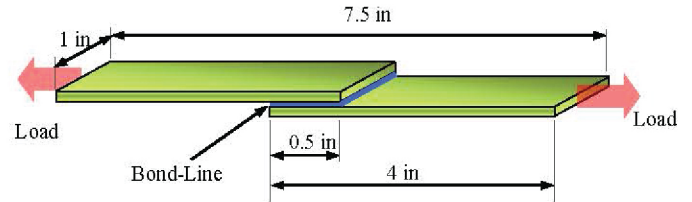
Fabricating Boltaron® 4335

BONDING AND THERMOFORMING RECOMMENDATIONS

Many types of adhesives can be used to glue or adhere Boltaron materials to a substrate. A study was performed to see which adhesives created a proper bond when adhered to a specific substrate. Types of adhesives that can be used include 2 part acrylics, contact cement, cyanoacrylates, foam acrylic tape, 2 part polyurethane, instant adhesives, multi-purpose cement, solvent based and structural adhesives. SIMONA Boltaron does not recommend the use of epoxy. For a complete list of **General Adhesive Guidelines**, visit: boltaron.com/careandmaintenance/adhesive-guidelines

Boltaron materials can be adhered to:

- Plywood
- Cement board
- Aluminum
- Particle board
- Polystyrene
- Stainless steel
- Drywall
- PVC
- ABS
- Acrylic



Schematic of a lap-shear specimen showing tensile loading

ADHESIVE TESTING – ASTM D3163 THERMOPLASTIC LAP SHEAR

Adhesive	Adhesive Manufacturer	Substrate	Lap Shear Avg.	Failure Mode
W031	IPS Adhesives	Boltaron 4335	626.6 psi	100% substrate
W045	IPS Adhesives	Boltaron 4335	615.2 psi	100% substrate
MA300	Plexus	Boltaron 4335	1540 psi	100% substrate
MA310	Plexus	Boltaron 4335	1525 psi	100% substrate
MA8110	Plexus	Boltaron 4335	1244 psi	100% substrate

SIMONA Boltaron recommends to verifying with the manufacturer for the best adhesive solution for a specific substrate.

IPSA chose the W030 series and W045 adhesives to be tested for bonding performance. ASTM 3163 – IPS Adhesives bonded rigid plastic lap-shear joints in shear by tension loading. Five lap shear each of W030 series (W031 used) and W045 bonded Boltaron 4335. Adhesive bond dimensions per ASTM D3163: 1"x1"x0.03". Substrate per ASTM D3163: 4"x1".

CONCLUSION

Both W030 series (W031 used for testing) and W045 performed as expected on the Boltaron 4335 panels. All five W031 bonded specimens resulted in the substrate breaking. All five W045 bonded specimens resulted in the substrate breaking. With most of the test pieces, the Boltaron 4335 substrate deformed significantly, before breaking at ~620 psi.

Please see pictures on the right for broken specimens.

As a result of testing, it was found that Plexus MA300, MA310 and MA8110 yielded the overall best performance for all plastics.

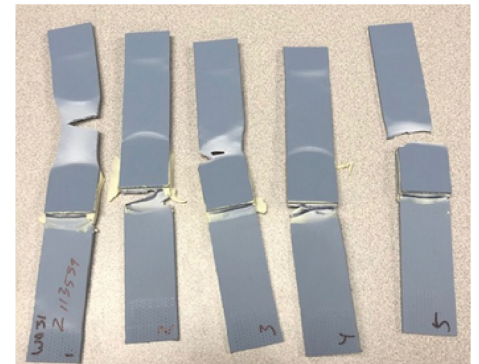
THERMOFORMING GUIDELINES

Mold Shrinkage	0.5 - 0.7%
Forming Temperature	335 - 370 °F (168 - 188 °C)
Typical Heater Settings	30 - 50% Top 50 - 70% Bottom
Drying	Not required

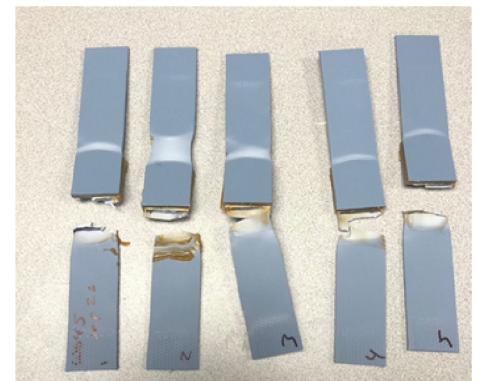
QUALITY GUARANTEE

SIMONA Boltaron is ISO 9001:2015 and AS9100 Rev D certified and maintains strict systems for quality control including management of sheet dimensions, color consistency, thermoforming surface appearance and material property stability using visual checks and in-house state-of-the-art testing equipment. For more information, visit www.boltaron.com/quality.

W031 specimens



W045 specimens



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