



Jetting Guide for 3M™ Scotch-Weld™ One-Part Epoxy Adhesives 6101 Off-White

Technical Bulletin

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Product Description

3M™ Scotch-Weld™ One-Part Epoxy Adhesive 6101 Off-White are one-part epoxies exhibiting low temperature cure or fast high temperature cure with long room temperature pot life. 6101 Off-White is flexible and toughened, resulting in high impact performance.

Application Techniques

This guide will focus on the jetting application technique. Jetting is a non-contact dispensing technique that expels individual drops of adhesive per shot. These individual drops can be dispensed as one shot or in rapid succession, if higher volumes are required. Jet valves are designed to minimize the number of wetted components required to operate. The unique designs of these valves allows for the fast cycling of the jet (upwards of 500 Hz) to dispense lines. Depending on the manufacturer, the jet valve can be either pneumatically- or piezoelectrically-driven.

Troubleshooting Dispense Parameters

- If the adhesive is pooling at the nozzle plate:
 - Ensure valve is clean with no cured material
 - Increase the jet pressure
 - Increase the valve temperature (do not exceed 40°C)
 - Increase the dwell time (amount of time valve is closed)
- If the adhesive is creating satellites on the substrate surface:
 - Decrease the jet pressure
 - Decrease the valve temperature
- If smaller volumes or bead diameters are required than those given in the provided tables, try a smaller orifice nozzle plate – be aware parameters will change
- If you want to create dispensed lines, stitch jetted drops together at appropriate movement speed
- For cleaning, refer to jet valve manufacturer's recommendation

Additional Help and Advice

- The provided tables and list of common troubleshooting tactics is not comprehensive. Please contact your local 3M Technical Service representative or call 1-888-3M-HELPS.

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Dispense Parameter Tables

6101 Off-White (AHS 1831)	Dispensed Bead Volume (μL)							
	0.050	0.15	0.25	0.35	0.45	0.55	0.65	0.75
Bead Height (mm)	0.16	0.28	0.35	0.40	0.45	0.47	0.50	0.53
Bead Diameter (mm)	0.63	1.08	1.30	1.46	1.59	1.68	1.77	1.84
Dispense Time (s)	0.012	0.07	0.11	0.15	0.19	0.21	0.25	0.29
Refill Time (ms)	10							
Dwell Time (ms)	5							
Jet Pressure (kPa)	450							
Fluid Pressure (kPa)	240							
Valve Temperature (°C)	40							
Orifice Diameter (μm)	200							
Stand-off Height (mm)	5							

Note: Dispense parameters were generated on a PVA Delta 8 robotic cell with a JDX Jet Valve, an EPDM diaphragm, and a ceramic nozzle. Adhesive beads were jetted onto aluminum at room temperature and cured for one hour at 60°C. These parameters should be considered directional and recommended for initial evaluation, as parameters can vary.

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