

## Fabrication Training Checklist

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In order to properly fabricate and assemble Envelope 2000® metal composite material, the following guidelines should be read, understood and followed. This list does not include all of the procedures and recommendations given by Citadel Architectural Products, only a representative set of major points for instruction. Be sure to follow completely all guidelines set forth in the Fabrication Manual.

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### Receiving & Material Storage

- shipping damage must be noted on Bill Of Lading and reported to manufacturer within 48 hours
- panels to be stored in a dry, well ventilated area

### Finish Directionality

- arrow on pvc must point in same direction for all metallics and anodized finishes

### Panel Cutting

- can be performed using table saw, CNC machine, panel saw, or portable circular saw

<u>Cutting Blade (table saw):</u>	<u>Cutting Bit (CNC machine):</u>
Drake # L1A250, 10" dia	Onsrud # 63-620, 1/4"
5/8" arbor, 60 tooth	18,000 RPM
triple chip pattern	Feed Rate=315 in/min
	Depth=0.01"

- carbide tipped blades recommended for all cutting operations
- panels may not be sheared
- cutting blade should always pull into the face aluminum

### Panel Routing

- can be performed using hand-held router, table saw (stock feeder required), or CNC machine

<u>Routing Blade (table saw):</u>	<u>Routing Bit (CNC machine):</u>	<u>Routing Bit (hand-held router):</u>
Drake # 265054, 6-1/2" dia	WXYZ # 70018	Drake # ALUCO1/2
5/8" arbor, 8 tooth, 98°	2mm 110°	101°, 1/2" shank, 0.84" cut dia
V-groove pattern	22,000 RPM	Feed Rate=300 in/min
	Feed Rate=350 in/min	

- to provide crisp bend, all core material to be removed completely, aluminum slightly scored on back

**Panel Bending**

- bend line should be located 1-1/32" away from panel edge
- 2" added to face dimension of panel equals flat panel size
- to prevent crazing at bend, temperature should be above 70° F
- skins thicker than .024" may require additional direct heating

**Panel Curving**

- performed with a pyramid roller, hinged table, press brake, or bump press
- minimum recommended radius is 6" @ 90°, 12" @ 180°
- RR System: return legs dovetailed and folded, extrusions pre-curved  
RS System: panels made in 3 pcs, extrusions pre-curved

**Attaching Extrusions**

- RR System: extrusions can stop short of corner by 2" to 3"  
RS System: extrusions must go all the way into the corner and be mitered
- de-burr cut end as needed

**Pop Rivets**

- spaced no more than 16" apart with 2 rivets, 1" to 3" from corner
- remove pvc from return legs before installing pop rivets

**Corner Reinforcement**

- in the corners of the folded pan, aluminum angles to be sealed (RR only) and riveted to reinforce joint
- aluminum angle to be sealed and riveted on flange of bend line or corner (elevation corner) panels

**Pop Rivets**

- 2 weep holes per panel to be 1/4" x 3/4", located 2" to 4" from panel end (RS only)

**Stiffeners**

- recommended for panels exceeding 3 feet in both directions (or as required by engineer)

**Sealant**

- to be used at all corners (RR only)

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I have reviewed the Envelope 2000® Fabrication Manual as well as the above guidelines regarding key recommendations. I have also been properly trained by Citadel Architectural Products on the tools and methods used to properly fabricate this material.

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<i>Fabricator Representative</i>		<i>Training Coordinator</i>	
	<i>Date</i>	<i>Citadel Architectural Products</i>	<i>Date</i>

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*Fabricator Company*