

**Material** Composite - Aluminum/Foam      **Material** 1.  
**Trade Name:** Aluminum Faced Ultra Board      **Customer Router** CNC

**Customer**

Customer is looking for best tool to cut supplied material.  
 Currently using two bits, one to cut aluminum skin and one for the foam.  
 Looking for bit to cut cleanly both materials.

Testing 1/4 and 3/8 diameter tools.

*Listed below are the results of testing by Onsrud*

Test Route	Test Bit	Feed (ipm)	RPM	Depth	Width	Rating	Result
		0	18,000				
1/4	65-026	100	18,000	full	full	Good	nice clean cut
1/4	56-628	100	18,000	full	full	Good	clean edge
1/4	52-700	100	18,000	full	full	OK	minimal pull out of foam alum good
1/4	57-287	100	18,000	full	full	Poor	some pull out and alum chips in foam
1/4	52-700	150	18,000	full	full	OK	more areas of pull out in foam
1/4	56-628	150	18,000	full	full	OK	few burrs along aluminum
1/4	56-628	150	24,000	full	full	Good	nice clean cut
1/4	65-026	150	18,000	full	full	Poor	pull out in foam
1/4	57-287	150	18,000	full	full	Poor	heavy burr on aluminum
1/4	56-628	200	24,000	full	full	Good	nice clean cut
1/4	57-287	200	18,000	full	full	Poor	rough edge in aluminum pull out in foam
1/4	56-628	200	18,000	full	full	Good	minimal pull out in foam alum good
1/4	52-700	200	18,000	full	full	Poor	worse pull out in foam
1/4	56-628	250	18,000	full	full	Poor	slight burr pull out worse in foam
1/4	56-628	250	24,000	full	full	OK	some pull out in foam
3/8	52-701	100	18,000	full	full	Good	nice clean cut
3/8	60-245	100	18,000	full	full	Poor	pull out in foam heavy burr along edge

3/8	63-627	100	18,000	full	full	Good	clean cut
3/8	56-639	100	18,000	full	full	Good	nice clean cut
3/8	56-320	100	18,000	full	full	Poor	burrs on alum heavy pull out in foam
3/8	65-033	100	18,000	full	full	Good	nice clean cut
3/8	55-325	100	18,000	full	full	Good	nice clean cut
3/8	65-033	150	18,000	full	full	OK	tiny burr on aluminum minimal pull out in foam
3/8	55-325	150	18,000	full	full	Good	same results clean
3/8	63-627	150	18,000	full	full	Good	light burr along edge
3/8	60-245	150	18,000	full	full	Poor	uglier
3/8	56-639	150	18,000	full	full	Good	same results clean cut
3/8	52-701	150	18,000	full	full	Good	same clean cut
3/8	63-627	200	18,000	full	full	Poor	larger burr along edge
3/8	65-033	200	18,000	full	full	OK	same tiny burr
3/8	56-320	200	18,000	full	full	Poor	pull out gets worse
3/8	56-639	200	18,000	full	full	Good	nice clean cut
3/8	55-325	200	18,000	full	full	Good	nice cut
3/8	52-701	200	18,000	full	full	Good	nice clean cut
3/8	63-627	250	18,000	full	full	Poor	burr and pull out in foam
3/8	55-325	250	18,000	full	full	Good	very slight burrs along edge
3/8	56-639	250	18,000	full	full	OK	light burr on alum
3/8	52-701	250	18,000	full	full	OK	light burr along top edge
3/8	65-033	250	18,000	full	full	Poor	burr size increases
3/8	55-325	300	18,000	full	full	Good	same results slight burrs
3/8	52-701	300	18,000	full	full	OK	some pull out in foam
3/8	65-033	300	18,000	full	full	Poor	more burrs along edge
3/8	56-639	300	18,000	full	full	Poor	pull out in foam burr gets larger
3/8	52-701	350	18,000	full	full	Poor	tool lines in aluminum some pull out
3/8	55-325	350	18,000	full	full	OK	burrs increase in size
3/8	55-325	400	18,000	full	full	Poor	burrs become larger tool marks in aluminum

\* Note: Width Cut refers to the amount of material removed per pass. It can range from the cutter width (a "Full" pass) to a pass of .050" to .125" (a "Finishing" pass).

## Conclusion

Tested By: G.B./J.S.