

CASE STUDY

AT's P.B.S.[®] Braze Technology reduced tooling costs by **75%** and eliminated chipping waste.

MARKET

WINDOW AND DOOR MANUFACTURERS USING VINYL/COMPOSITE MATERIALS



CHALLENGE

Today's window and door manufacturers are challenged with minimizing material waste while maximizing tool life. Traditional industry procedure is to cut the extruded material to length using a carbide or PCD tipped saw blade. These saw operations, while being used by most industry manufacturers, cause chipping to the material as the saw teeth get dull. To account for the chipping, the manufacturers allot for excess material on each cut accepting that there will be waste, which negatively impacts the manufacturer in both excess material costs and disposal costs.

Image Source: www.rehau.com

ABRASIVE TECHNOLOGY PRODUCT SOLUTION

P.B.S.[®] Braze Diamond Saws Blades

AT has successfully manufactured custom engineered, precision products to reduce waste and number of set ups, while improving accuracy and making cleaner cuts for the window and door market. The results have been product optimization over time based on manufacturer feedback and real world performance.

Testing with a major window and door manufacturer utilizing AT's P.B.S.[®] braze diamond saw blades has resulted in more than **12X life increase** with the manufacturer increasing from **40,000 cuts** to **+ 550,000 cuts**, with the P.B.S.[®] braze diamond saw blade still running.

"I don't know why these tools aren't already in every machine in all our facilities. – Satisfied Customer"

P.B.S.® BRAZE BOND PROCESS ADVANTAGES

Window and door manufactures may have encountered performance challenges previously with traditional diamond saws due to the bonding characteristics used to produce the saw. The successful product optimization using AT's P.B.S.® braze diamond saw was possible due to the unique ability of the P.B.S.® braze bonding process enabling high cut rates and longer tool life. The abrasives on each P.B.S.® braze diamond saw blade are tailored to the specified door and window composite materials.



P.B.S.® Braze bond detail

P.B.S.® Braze 100X magnification

BENEFITS

The benefits of the P.B.S.® braze diamond saws blades are ideal for industry leaders seeking to implement cutting and shaping best practices. Improved surface finish with reduce chipping results in longer tool life and fewer tool changes and, ultimately, less waste. Additionally, the AT products reduce safety handling concerns compared to sharp, carbide tipped saw. The P.B.S.® braze diamond saws blades do not require cut resistant gloves, which is appreciated by both operators and safety teams.

EASY TURN KEY CONVERSION

Window and door manufacturers can easily convert their existing cutting operations to P.B.S.® braze diamond saw blades as a simple drop-in replacement with no machine modifications required. Further, AT's products are customized to the material and machine being used by the manufacturer.

NEXT UP: FORM WHEEL SUCCESS

Cutting complex forms into frame components in a single pass while maintaining dimensional accuracy and high cut rates poses a production challenge for window and door manufacturers. Traditional multi tool operations lead to problematic tolerance stack-up and produce less precise finishes. AT's P.B.S.® braze diamond form wheels for finishing corner joints and making clean edge joint connections are ideal tools to address these challenges. Our single tool replaces the multi-tool platform used by many window and door manufacturers. The P.B.S.® braze diamond form wheel produces better wear rates with dimensional stability through the life of the tool, leading to superior edge quality and neat joints without ragged edges or chipping.