



# Innovations for abrasion and impact challenges

A specialist USA-based manufacturer of abrasion and impact solutions has found a growing niche in the glass industry for handling tough materials, such as cullet and improving operations and maintenance cycles. Scott Rife outlines the history of JADCO Manufacturing in solving wear challenges and its latest developments.

Just 30 minutes north of the 'steel city' (Pittsburgh), in Harmony, Pennsylvania, JADCO Manufacturing Inc has become the leading provider of solutions for abrasion and impact challenges for a vast array of industries. Founded in 1980, JADCO prides itself on providing unmatched technical expertise, quality and customer service across an unparalleled array of proprietary products.

The company's growing presence in the glass industry has been relatively fast paced but is unsurprising, JADCO being a leading global wear solution provider for almost four decades. Its roots originate in the steel and mining industries, where founder, James Davison began serving these industries from humble beginnings, focusing on wear and downtime issues. His vision was to be the 'go to' company for the toughest of wear challenges, a vision that is still a driver today. "Our move into the glass industry has been a natural progression" says Sam Anderson, JADCO President. "We have continued to look for ways to grow our offerings to existing and new customers. Glass was a logical next step that fit our model seamlessly."

Through JADCO's strategic planning process, the glass industry

was determined as a market to move into to combat and to focus on wear. Such focus areas as cullet handling, mixer system liners and mixer paddles, along with chutes and general fabrication associated with these systems were similar to those dealt with in other industries in which JADCO already provided products. After reviewing the wear solutions that were offered, the company found it had some advantages with its Chromeweld technology. The existing technology had not changed in years and it was a case of educating glassmakers about the products available and the advantages they could deliver, along with addressing standard concerns of the industry, such as nickel content and availability.

### Overlay products

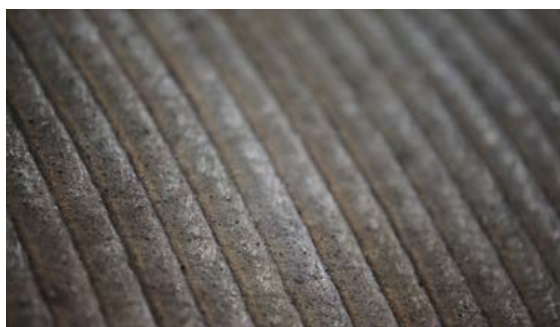
JADCO's Chromeweld overlay has continued to evolve and grow over time. With proprietary chemistries and manufacturing processes, the company has continued to develop different plates, pipes and weld wires with chemistries based on the customer's needs.

"Chromeweld overlays have more than proven themselves in a wide range of applications such as chutes and hoppers for extremely abrasive frac sand transportation in oil and gas" Sam Anderson explained. "Also with high temperature wear protection for steel and coke making situations. Therefore, these overlays have easily found a home in the glass industry in a variety of areas, including transfer chutes, hoppers and vibratory feeder liners, along with mixer liners and mixer paddles."

When evaluating the wear plates that were being offered, JADCO found that the standard Chromeweld 600 plate far exceeds the standard wear characteristics used by the glass industry. "We had a large float glass producer do their own independent testing on our plate, comparing it



OEM parts fabricated by JADCO from Chromeweld plate.



Chromeweld 600 chromium carbide overlay plate offers the lowest nickel content on the market.



The company's 'go to' offerings provide overlay liners for such equipment as chutes, along with the fabrication/equipment.



JADCO's facility consists of over 70,000R<sup>2</sup> of manufacturing space, with state-of-the-art equipment for fabrication.



to those already in use” says Sam Anderson. “They were pleasantly surprised to find that JADCO had significantly better wear resistance, coupled with lower nickel content.” This is a major advantage, especially with float glass operations, where nickel contamination is an important and constant concern.

As JADCO began to listen and understand the lack of wear materials development in the industry, it was straightforward to adapt other Chromeweld overlay solutions for glass. Each grade is developed to meet a specific wear application and is purposeful in development. A ‘one size fits all’ approach is avoided and this is proving to be a welcome change for glass industry customers. JADCO developed such products as Chromeweld Flow, an overlay piping for areas such as pneumatic transfer and dust collection. The company has also found some extreme, fine particle abrasion areas where customers were using standard overlay-type materials. By offering Chromeweld Nb Plus, a niobium carbide overlay, it was able to dramatically improve wear life and equipment availability by up to 50% plus life improvement.

### Extreme heat and abrasion solutions

Other examples of wear solution differentiation that JADCO has brought to the glass industry are options like Chromeweld Ti, a titanium overlay for applications with abrasion coupled with heavy impact and Chromeweld Complex overlay for ultra-demanding complex alloy solutions for extreme heat and abrasion. Also offered are chemistries in wire and electrode forms under the Chromeweld Fusion weld wire brand.

This product family has given the glass industry a

choice of wear solutions that fit the challenge at hand instead of the generic, one chemistry option. “We have advanced the uniformity of our overlay development processes, yet we offer enough customisation to meet the needs of each application head on” Sam Anderson confirms. “We have continued to look for ways to grow in our solution offerings to existing and new customers.”

Another benefit is the ability not only to produce the wear materials but to fabricate them as well. JADCO’s ISO certified fabrication facility consists of over 70,000ft<sup>2</sup> of manufacturing space, with state-of-the-art equipment, including high definition plasma burning machines, heavy forming with up to 2000 ton press capacity, heavy plate rolling, 40 ton overhead crane capacity and multiple digital and manual welding machine (GMAW, SMAW and FAWC) capabilities with certified AWS D1.1 certified welders on staff.

“When we looked at the whole acquisition cycle of wear plate and associated fabrications, we were surprised to see that glass producers were buying wear materials in common sizes such as 48in x 96in plates

from a manufacturer, before having to co-ordinate additional services for third party processors to fabricate the needed items like chutes, hoppers or liner kits” says Sam Anderson. “We immediately recognised this advantage, because not only are we the manufacturer of the wear materials in-house but we have capabilities and a skilled workforce to offer a finished wear solution. We have eliminated multiple sources in the procurement phase, resulting in reduced costs and lead times, while providing a higher quality, finished product. This alone has proved to be a game changer for many glass facilities, as well as engineering firms dealing with glass projects.” ●

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**AMERICAN-MADE**

## OVERLAY FOR ALL APPLICATIONS:

- Industry Leader with Multiple Overlay Chemistries
- In-house Fabrication Available
- Immediate Delivery for Various Sizes and Thicknesses
- Lowest Nickel Content Available in Market
- Leading the Market Since 1980

## APPLICATION FOR AREAS SUCH AS:

Hopper Liners, Shaker Liners, Mixer Paddles, Overlay Pipe, Cullet Chutes, Impact and Abrasion Challenge areas