PRESS RELEASE

Rio-Carb invests in hi-tech machines to boost its hard-facing capability

02 October 2018: *Chromium Carbide (CrC) wear solutions provider Rio-Carb of Alrode has invested in state-of-the-art precision rotating equipment, column-and-boom positioning equipment, and plasma gouging and preparation in order to boost its hard-facing capability.*

Hard-facing, a metal-working process whereby harder or tougher material is applied to a base metal, is integral to wear-engineering solutions. It is critical to assist in eliminating wear. This cannot be prevented in its entirety, as wear itself is a sacrificial process. "When evaluating a project, the first factor to consider is where wear can best be minimised," Rio-Carb Director **Martin Maine** explains.

Rio-Carb is now able to monitor its CrC alloys in accordance with exacting chemical specifications, thereby obtaining the optimal combination of materials. In addition, the use of hi-tech, digitally-controlled wire feeders and depositors mean that critical parameters such as voltage and amperage can be controlled precisely.

"With more stringent metallurgical control, and consistent alloy formation, Rio-Carb is now able to place weld metal via digital control in the correct quantity, and in the correct place, to minimise wear and reduce the total cost of ownership for its clients," Maine elaborates.

Rio-Carb can even analyse the particular type of wear that is occurring, from gouging to sliding or impact wear, for which different kinds of best-practice liners are available. Therefore, equipment needs to be designed for optimal positioning of the sacrificial wear material. In terms of the latter, while CrC allows are slightly costlier than Grade 400 or 500 steels, they have an eight- to ten-year longer lifespan.

This means that project houses need to specify the best liner solution upfront, rather than rely on adjusting the equipment or plant once it is operational so as to be able to determine the wear characteristics. "Technological advances mean we can now predict where the wear is going to take place, the exact kind of wear, and the correct products to use," Maine stresses.

Rio-Carb's senior staff have all completed intensive material-flow analysis courses at the University of the Witwatersrand to ensure they can offer the best possible service to their clients in this regard. "However, despite all this, we still receive incomplete drawings from project houses that specify the wear-liner material as Grade 400 mild steel, with the proviso that the precise nature and extent of wear can only be determined once the plant is operational.

"This is a costly and ineffective process that can be eliminated if Rio-Carb is involved upfront in the design process itself," Maine urges. "We can supply extensive knowledge of the precise usage of CrC materials in critical areas such as sharp ends and hot spots."

Another problem with the traditional approach is that inferior wear liners often have to be removed with acetylene cutting torches. Rio-Carb, on the other hand, supplies its CrC wear liners with hard-faced Rapid Removal bolts that require no cutting, and hence no costly downtime is incurred.

"Therefore, it is best that we become involved with the design stage to ensure all operating conditions and parameters are met," Rio-Carb General Manager **Sias Suurd** adds. This ranges from installing sacrificial surfaces (liners) to replaceable parts (maintenance). Materials range from CrC overlay plate to high-impact plate, 400 and 500 Brinell material and most recently, ceramics. Such

has been the interest expressed in hard-faced pipes in particular that Rio-Carb is now making extensive use of its five-axis plasma pipe-cutting machine.

CrC overlay plate comprises a ductile and weldable backplate, a quality-controlled fusion zone, and a hard chromium carbide overlay. It is an ideal wear-resistant material for chutes, cyclones, skips, feeders, crushers, dozers, haul trucks, excavators, and draglines. Fastening methods range from countersunk bolts with hard-faced bolts to stud welding.

Ends

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Notes to the Editor
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About Rio-Carb
Rio-Carb manufactures wear-resistant Chromium Carbide (CrC) clad liner plates for heavy materials-handling applications in the mining and allied resources industries. With more than 30 years' experience, the company's long-life CrC liners have eight to ten times the wear life of industry-standard 400 and 500 BHN steel materials, which reduces operational costs dramatically due to less downtime and change-outs. Rio-Carb has a deep-rooted history in mining, and is able to respond to customers' needs swiftly in providing cost-effective solutions.

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