



World Pipelines' valve review,
featuring ValvTechnologies.

VALVE review

VALVTECHNOLOGIES



With more than half of the oil in the US and virtually all natural gas transported via pipelines, erosive failure of a pipe is a dangerous possibility facing many facets of the nation. While generally safe compared to many other methods of transportation, pipelines pose threats across the world. Although there are methods to test pipelines for thinning wall sections, repair is costly and time-consuming. ValvTechnologies has a process of lining pipe that has been saving customers time and money for years. The company has recently adapted this process to line

valves in highly erosive and corrosive environments.

ValvTechnologies' Rhinoite® process was developed and patented in 2000 to provide an impenetrable bearing surface, and was later applied to lining elbows, bends and tees in pipelines. It is a metal inert gas welding process by which a multistage weld overlay, typically of the same alloy as the base metal, is applied while simultaneously dispersing cemented metal carbide pellets into the weld. By performing this in a multilayer process, the Rhinoite® matrix has the distinct feature of becoming harder as it wears. This generally results

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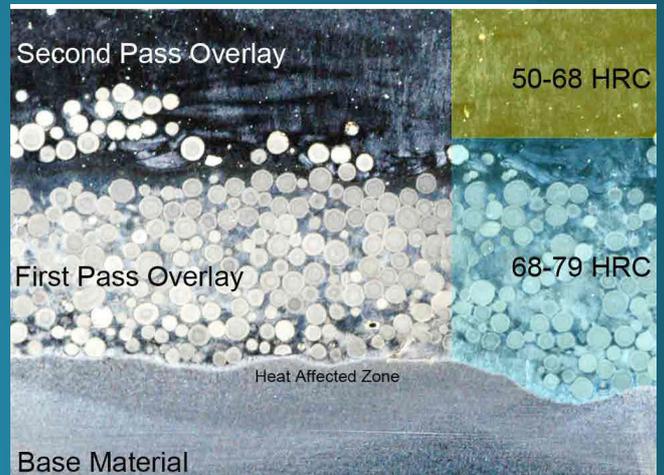
in a wear life of five to seven times that of the original metal.

Since ValvTechnologies' process utilises a matrix like the base metal in composition, it maintains similar corrosion properties as the substrate to which it is applied. The matrix can be worked to achieve precise dimensions using special diamond grinding and cutting processes.

Over the years, the process has been adapted to meet some of the most demanding services in the world, where erosion, corrosion, adhesion and high temperatures (up to 2200°F) must also be considered. It has been a proven solution for hard metal overlay on elbows, t-sections and choke tubes in chemical plants and refineries for years with zero failures. The process overlays can even be completely refurbished after years of service, reducing overall material and maintenance costs.

General advantages of ValvTechnologies' matrix are:

- ▶ Minimised loss of production time by wearing five to seven times longer in service operations than bare metal.
- ▶ Reduced number of shutdowns, with servicing times increasing to years rather than months.
- ▶ Eliminated the need for equipment rentals, insulation replacement and inspection frequency.
- ▶ Reduced man hours for overall maintenance of units.
- ▶ Reduced overall material cost by being able to be completely refurbished after years of service, eliminating the need to purchase new components.



The Rhinoite® matrix of carbides.



Over the years, ValvTechnologies has found a niche providing end users with an effective method of lining pipe transitions to prevent erosion. Rhinoite® has been applied to coating valve balls, seats and flow bores. Other applications in which its process has been utilised include: crusher teeth for mining, stabilisers, bearings, furnace bends, furnace caps, choker nozzles, choker tubes, tees and elbows, valve balls, seats, plugs, discs etc.

As the world continues to invest in the necessary infrastructure for transporting hazardous materials effectively, the risk of catastrophic environmental events will rise. Instead of investing in a product that will require more measurements and costly maintenance, an investment in the future with this matrix should be considered. 



A Rhinoite®-lined 14 in flexi-choker t-section.