

Lighter couplings = safer terminal

The physical exertion involved in the positioning, handling, pressurising and bolting of couplings in a tank terminal or tankship setting can present health and safety issues to terminal staff. Although the option of lifting equipment such as trolleys or cranes is generally available, time restraints and poor weather conditions often mean that this is done manually, either by an individual or small group. In these situations, the weight of the coupling can result in injury of the back and sprains and strains of muscles, further resulting in lost work hours due to staff sickness leave.

In addition to health and safety issues, heavy steel couplings can put excess pressure on marine loading arms in circumstances where the loading arm is used incorrectly for convenience (e.g. when terminal staff wish to avoid connecting the loading arm whilst bridging between ship and shore.) This can eventually result in damage, incurring maintenance

costs and negative environmental impact.

Implementing couplings that are more lightweight is a simple preventative solution, to both health and safety and excess maintenance issues, which can be applied to all marine storage terminals that use loading arms. To achieve a lighter coupling, aluminium is used instead of steel, reducing the weight of the coupling by up to 50%. Although aluminium has low elasticity, therefore making it unsafe for use in a pressurised environment, reducing couplings manufacturer Eurad has developed an aluminium alloy with an elasticity of 10% specifically for this purpose.

In order to guarantee this required level of elasticity, the product cannot be welded and is instead cast using sand-casting methods. Although the process is complex, it allows Eurad to produce a safety assured aluminium reducing coupling that is unique within the industry. The product is also dye-penetrant tested to DIN54152-1, to ensure that it is free from cracks.

In addition to its elasticity, the aluminium alloy is highly resistant to corrosion, making it appropriate and safe for use in a coastal environment. To ensure that the product is safe for application in pressure vessels, it has been certified by TÜV Germany and approved by Dutch Dienst voor

het Stoomwezen (the national controlling organisation for allowing pressure containing parts as components for industrial purposes). Industry approvals such as these are yet to be awarded to any other aluminium coupling, due to the limitations of the material.

Although it is still a relatively under used in the industry, Eurad's product is over 20 years old. It was first developed by the company's founder Arend Mollee, in response to a specific client request for an aluminium alternative to the steel reducing couplings that their facility was using. Mollee co-developed the aluminium alloy that is still used today. Since then, Eurad has extended its range of reducing couplings to a wide variation of flange types, sizes and pressure classes.

Despite achieving this technological breakthrough back in 1991, it was only three years ago that Eurad decided to push its product to the wider industry. With the company's main business unit having always been industrial valves, the company's aluminium couplings business was never given the same level of time and importance. Consequently, very few within the industry knew of the industry certified aluminium alloy reducing coupling's existence. It was only when Mollee's son, Arjen Mollee, took over the company that Eurad began to exploit the full potential of their unique product.

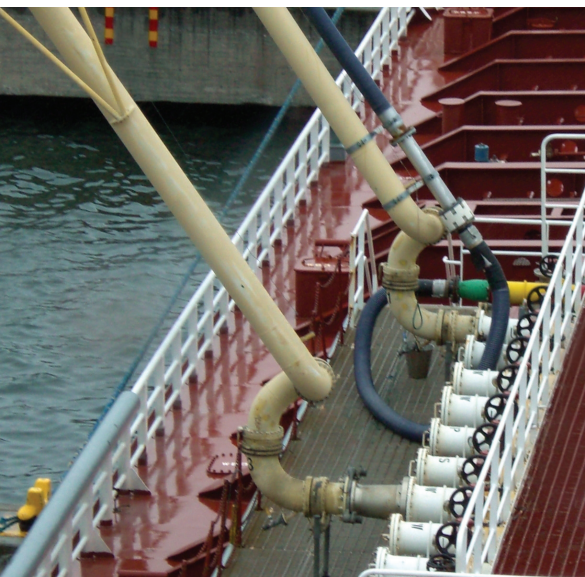
To date, Eurad has supplied couplings to industry leaders such as Shell, Dow, Total, BASF, Lyondellbassell

and other commercial tank terminals. With the company's head offices in the Netherlands and Belgium, the Benelux region has been its primary source of business thus far. However, interest in the couplings continues to increase in Asia, Africa, North and South America.

Marc Francois DC Off-Sites of Total Refinery Antwerp comments: 'We have had Eurad cast aluminium reducing couplings in permanent use for about 10 years and they have been making effective and safe connections between our marine loading arms and many tankships ever since. We have chosen these aluminium couplings for their lighter weight compared to common steel reducing couplings. I am very pleased about these aluminium couplings in our day to day operations as they support our general safety and are far more ideal in handling. I do believe that they also prevent our staff from injuries, simply because they really are lighter, and by experience totally safe.'

Stefan Vrijland, operations leader for SLHC at Dow Terneuzen, agrees: 'The Eurad aluminium reducing couplings have been used by Dow for over 20 years now. The benefit of being lighter compared to steel reducing couplings, has proven to be a great advantage for handling by our staff and as such for the safety in general.'

Providing safer equipment can lessen the risks caused by human error and, in an industry where safety is a primary concern, any extra preventative measures are welcomed. ☺



Aluminium coupling connecting arm and tankship