



Devcon® Putties Repair & Protect Pipe Header from Corrosive Salt Water

Problem:

At a steel plant in Saudi Arabia, a damaged seawater outlet header had a large leak on the side of its DN600 nozzle. It was evident the nozzle damage was too severe to be contained with temporary measures. In addition, the rubber lining within the carbon steel pipe was also damaged.

Given the cooling process was highly corrosive and would continue to negatively affect the carbon steel pipe, especially the flange on top of the return header, a durable corrosion resistant coating was required to provide long-term protection and reduce maintenance repair time.

Solution:

Devcon Plastic Steel® 5 Minute® Putty (SF) and Devcon Flexane General Purpose Putty was used to repair the metal surface, stop the leak, and provide further corrosion protection to the pipe header.

- The surface was cleaned and steel filled, fast setting Devcon Plastic Steel 5 Minute Putty (SF) was applied to rebuild the missing metal. Next, a carbon steel plate was bonded to provide additional reinforcement to the repaired area.
- The repaired surface was then coated with Devcon Flexane General Purpose Putty to mimic the rubber lining and match the needed height of the rubber.
- A composite wrap was used for structural reinforcement, bringing the damaged sea water outlet header up to its original strength following the ISO 24817 code.



Damaged FPF sea water nozzle (DN600)



Close-up of corrosion before repair



FPF sea water nozzle rubber lining with gouge



Project Outcome:

Quick Installation

With the repairs needing to be applied and fully functioning within 8 hours, the Devcon putties were quick, easy, and safely applied within the necessary timeframe.

Lower Repair Costs

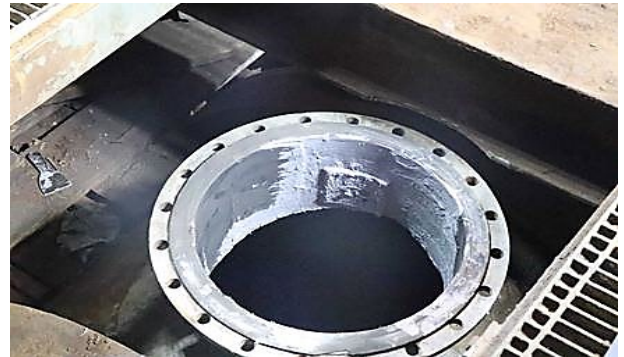
The time it would take to replace and weld the return nozzle's header in addition to the actual part cost would have resulted in high maintenance cost. The Devcon coatings offered a cost-effective solution that reduced both repair time and maintenance cost for the steel plant.

Highly Durable Coatings

Devcon Plastic Steel 5 Minute Putty (SF) and Devcon Flexane General Purpose Putty are proven for their long-term durability. The chemical-resistant epoxy coating reached full functional strength in 1 hour restoring and rebuilding the metal surface while the urethane putty provided the advantage of a seamless surface, avoiding the downfall of rubber linings used around complex geometries.



Devcon Plastic Steel 5 Minute Putty (SF) applied to rebuild the missing metal in header interior



Devcon Plastic Steel 5 Minute Putty (SF) used to bond a reinforcement steel plate over the damaged area



Devcon Flexane General Purpose Putty applied to the repaired surface and on the rubber lining to provide seamless protection



Repaired sea water outlet header back in service

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