



Hastaloy Stack Repair

PROBLEM:

A South-Eastern Utility installed limestone SO₂ scrubber systems on their 280 MW units between 1977 and 1981. The outlet ducts were wallpapered with Hastaloy, to prevent corrosion, from the scrubber outlets to the stack inlet. They found that the stack wall directly opposite the outlet duct was being subject to excessive corrosion/abrasion from impingement of the moist flue gas. The Plant decided to install a partial Hastaloy stack liner at that point. However, they were concerned that the edges of the new Hastaloy would be subject to the same accelerated corrosion rate as they were seeing at the edge where the existing Hastaloy lined outlet duct ended.

SOLUTION:

DUROMAR, INC. was contacted, and we recommended coating a 12" strip of **HPL 4330** around the Hastaloy edge, about 3" onto the Hastaloy and 9" onto the concrete stack surface to prevent the accelerated corrosion being experienced. The product selected was **DUROMAR HPL 4330**, a thick film product which was applied in one coat at about 60-80 mils DFT. This novolac based resin system gave the acid, temperature and abrasion resistance required.

In addition to this area, the **HPL 4330** was used to coat the existing Hastaloy line outlet duct edge to prevent further corrosion.

RESULTS:

After six months of operation, the **HPL 4330** lining was still in perfect condition. More importantly, the Hastaloy was also in perfect condition with no edge corrosion or other effects.

A second inspection after 12 months of service again showed the **HPL 4330** to be in perfect condition, protecting the alloy.

CURRENT STATUS:

After about 18 months of service the uncoated Hastaloy stack liner was found to be severely corroded from the condensing acids in the stack gases. The stack liner was removed and a more chemical resistant alloy was installed.

COMMENTS:

DUROMAR'S HPL 4330 is an excellent lining material for use in highly acidic, high temperature, abrasive applications. It can tolerate pH ranges from 0.5 to 12.5 and temperatures over 400°F. Because of its paste like consistency, during application, it also fills any corrosion pits present. Since Hastaloy tends to "worm hole", this is an excellent benefit.



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