Heat Exchanger Repair

Application by ProCoat Specialities Pvt. Ltd.

ThistleBond

A Division of E. Wood Ltd., U.K.

Industries which are using heat exchanger will often handle various cooling media which mainly contains un-treated water like, sea water, river water, ground water etc., are sources of different corrosive elements, suspended particles, micro-biological organisms. Water with these corrosive elements, when used for cooling purpose in heat exchanger units makes an extensive effect on bodies of casings, tube plates, domes ultimately resulting in corrosion of metal surface.

ProCoat Specialities with ThistleBond ceramic carbide range of products provides an cost effective solution to repair & protect these affected areas and also improve life of the equipment dramatically.

Product : Ceramic Carbide Wearing Compound

'Ceramic Carbide Wearing Compound' is a high performance multipurpose metal repair compound specifically developed for rebuilding metal components in a fluid flow environments damaged by erosion & corrosion.
'Ceramic Carbide Wearing Compound' formulation uses a complex blend of polymer resins and a polyamino-amide curing system reinforced with carbide and ceramic particles to produce a coating with high level of abrasion and erosion resistance combined with optimum physical and mechanical strength.
Superior compressive strength of 1055 kg/cm^2 (15000 psi), tensile shear adhesion of 175 kg/cm^2 (2500 psi) and a flexural strength of 700 kg/cm^2 (10000 psi) makes the rebuilt area extremely tough to withstand abnormalities. Hardness of 100 Rockwell R and abrasion resistance of 0.006 ml loss / 1000 cycles CS17 wheel 1 kg load ensures the repaired area fully protected from further damages caused by handling media even at 200^{o}C.

Product : Abrasion Resistant Ceramic Carbide Fluid

'Abrasion Resistant Ceramic Carbide Fluid' is high performance fluid grade engineering resurfacing compound used for fluid flow environments. Is a formulation of complex blend of polymer resins reinforced with carbide & ceramic particles designed for providing outstanding protection against impingement, entrainment and erosion / corrosion conditions. When coated on grit blasted steel offers excellent adhesion and tensile strength of 195 kg/cm^2 (2800 psi).

Above products are 100% solids with no volatile organic matter making the coating non-shrinkable even at very low temperature.

Surface Preparation

Entire surface has to be thoroughly cleaned with ThistleBond 'Cleaner' for degreasing purpose. Water cleaning to be done to remove the adsorbed salts. Sand blasting to SA 2.5 is highly recommended for surface preparation. In case of sand blasting not possible then more time to be spent with mechanical cleaning to ensure near white metal finish. Surface once again to be cleaned with ThistleBond 'Cleaner'.

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Damage shown in pictures is to be observed that damage is not local but spreaded to all areas of casing. This un-even surface to be rebuilt with 'Ceramic Carbide Wearing Compound' by manual application with spatula or profile applicator after surface preparation. Rebuilding with this product makes surface much better wear resistant base for the component from future corrosion attack. Once the material is applied for re-profiling and surface brought to standard size, the entire casing surface is to be given a uniform, 250 microns DFT coating with 'Abrasion Resistant Ceramic Carbide Fluid' by good bristle brush or spray to enhance protection against corrosion and also to achieve a low friction surface which ultimately leads to the improving efficiency of unit. One can observe the final finish of casing surface in picture.

Tube Sheet Repair

Mechanical cleaning has to be done over tube sheet surface to obtain the final deformities taken place because of bi-metallic corrosion. The deformities have to be filled with 'Ceramic Carbide Wearing Compound' and the original profile is achieved also eliminating chances for further pitting and cavities. A final coating with 'Super Low Friction Efficiency Coating' to be given over entire tube sheet surface as this product is specifically designed with “inert flow enhancing pigments” along with its superior corrosion resistance of 10000 hours of salt fog. It offers an extremely low friction for water flow there by protecting from formation of pittings.

Distributor catering to your needs

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