

Effect of Post Treatment Temperature on Ni-20Cr Wire Arc Spray Coating to Thermal Resistance

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Abstract : Crown enclosure high temperature flares damaged and reduced dimensions crown. Generally crown on EHTF could have a life time up to twenty years. Therefore, this study aims to increase the value of thermal resistance with the effect post treatment on NiCr coated arc spray method. The variation of post treatment temperature, was at 650°C, 750°C, and 850°C. Morphology on the surface and the adhesion strength was analyzed by SEM-EDX, Surface Roughness and Pull - off test. XRD testing was conducted to determine the contained in NiCr coated. Thermal stability of NiCr coated was tested by DSC-TGA. The most optimal results was owned by NiCr coating with post treated at 850°C. It has good thermal stability until 1000°C because of Cr₂O₃ formation in coated specimen. The higher temperature of post treatment coating was showed better result on porosity and roughness surface value.

Keywords : Arc spray process, NiCr wire, post-treatment coating, high temperature-corrosion resistance

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