

Pickling and Passivating of Petroleum Tank in Norway

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A company that got a contract to build a huge tank for GASNOR LNG Plant in Kollsnes, Norway carried out pickling and passivation of large surfaces of partly joined plates before constructing of a tank. The work was not successful as dark spots appeared difficult to remove. The company tried to clean surfaces with different type of preparates but with no success. Professional advices from a specialist called from a French company helped not enough. Then the company asked Ancora to performed pickling on ready construction to get a proper passivation of outside walls.

The work was done in two steps in 2007.

At the beginning two workers went to Kollsnes by air to make tests. They found nearly the whole tank surface covered with spots usually showing a vertical direction (Fig.1). After choosing reference surfaces the Ancora workers tried a few preparates of Avesta Welding Chemicals with brush application (Fig.2).



Fig. 1. Most of the spots on tank surface showed vertical direction



Fig. 2. Field testing of effects after application of varied Avesta pickling preparates

It was stated that surface contaminations could no be removed by chemical means so that it was advised to clean the surface with glass bead blasting. A trial brought data on effectiveness of the applied staffs and allowed to select proper preparates to use after blasting (Fig.3).

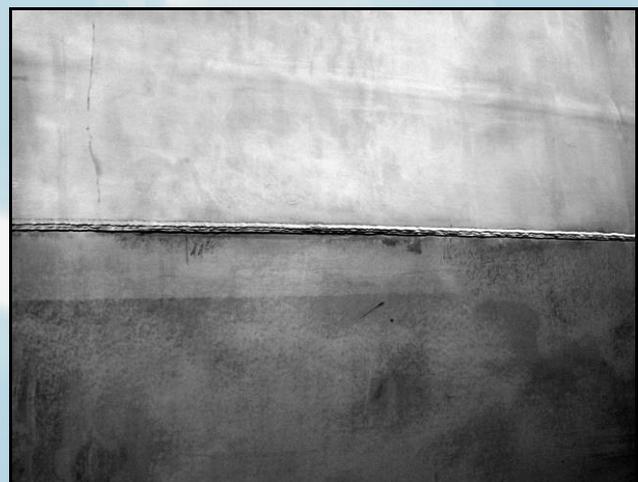


Fig. 3. Differences at treated (top of the picture) and no treated surfaces after brush application of chemicals

To carry out pickling/passivation at the second step a team of four workers went to Norway by car with the equipment and the chemicals. At the beginning of the second step the outer tank surface was carefully washed before Ancora Co. started pickling work (Fig.4). The work was carried out by spraying Avesta chemicals from a lift platform (Fig.5).



Fig. 4. Tank surface was flushed with water and dried before pickling/passivation



Fig. 5. Pickling/passivation of tank outer surface performed by spraying

The weather during the work was not friendly as it was raining very often and strong wind affected spraying and forced to unexpected breaks. It was very short time to finish all the construction work including blasting,

pickling and passivation so that Ancora workers had to work during night shifts as another time was occupied by the construction teams. In 8 days the work was completed, electrochemical potential tests were done (Fig.6) and a final certificate was issued.



Fig. 6. Passivation effects were controlled by electrochemical potential measurements

The work was accepted by the Gasnor representatives who were much satisfied as the tank was finished in time, before the planned prime minister visit (Fig.7).



Fig. 7. Tank ready for exploitation before prime minister visit ¹

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