

Reinforcement of pipes and welding seams

Application:	Reinforcement of pipes and welding Seams.
Place:	Aker Solution, Ølensvåg Norway
Date:	January 2010
Job and report done by:	Vestergaard Marine Service / Wencon Denmark
Wencon products used:	1088, Reinforcement Tape, Perago Disc, Cleaner, app. tools



1. & 2.

In order to get the best possible adhesion of Wencon 1088, the pipes are surface prepared as rough as possible, using Perago Disc.



3.

Mechanical surface preparation with Perago Disc and chemical cleaning with Wencon Cleaner.



4, 5, 6 & 7.

After Perago grinding, the surface is degreased with a chemical cleaner. Wencon 1088 is applied with a brush, and built up layer by layer with Reinforcement Tape.

Following procedure is used: One layer of 1088, then a layer of Reinforcement Tape with double overlap, then another layer of 1088 – etc., until 4 layers of Reinforcement Tape and 5 layers of 1088.



8.

Final repair - close up.

Description of heat preparation, during and after the job:

Before repairing with Wencon, all areas are heated up by electrical heating units. Heating is important before, during and after repair, to insure the metal is dry and to ensure a good curing process after application.

Size of each repair:

Each repair is carried out with minimum 250 m/m coating and reinforcement tape on each side of the pinhole - in total 500 m/m long. Pipe dimension, 2''- 20''. Number of reinforced pipes: 148.



Choose the relevant surface preparation, according to the nature of the job. Seek advice from a Wencon Technician if needed.

Specification for surface preparation for Dry Applications

Defined as applications, where the Wencon product will be applied to a surface at a temperature minimum 3 degrees above dew point. Use the Wencon Products: Wencon Cream, Wencon Rapid, Wencon Coating, Wencon Ceramic Cream, Wencon Ceramic Coating, Wencon Hi-Temp, all requiring a dry surface.

1. Blast the machine part to SA 2 ½ using sharp-edged blasting media, to a roughness of min. 75 microns.
2. Leave the part for sweating out salts in a warm place for at least 12 hours or heat it up to 30 - 40 °C (86-104 °F) using gas torches.
3. Blast again to SA 2 ½ immediately prior to the application.
4. For parts containing lots of water and salt, it may be necessary to repeat 2. and 3. until the surface remains light grey for at least 2 hours after blasting.
5. Always use Wencon Cleaner prior to application.

Specification for surface preparation for Wet/Damp Applications

Defined as applications, where the Wencon product will be applied to a surface at a temperature less than 3 degrees above dew point. Use the products Wencon UW Putty, Wencon UW Cream and Wencon UW Coating for applications on wet or damp surfaces.

1. Water jet the entire surface with water and sand to a standard equal to SA 2½, as described above.

Specification for surface preparation for Emergency/Temporary Applications

Perago Treatment

Perago is a rubber disk with hard steel spikes mounted on the periphery. Perago can be mounted in a normal drilling machine, and gives a surface close to a blasted surface - clean and rough with sharp edges. Perago dishes can be ordered at Wencon and at all Wencon Distributors.

Grinding

Wheel grinding is often an acceptable surface preparation for emergency applications, where shot blasting is not possible. When grinding use a coarse stone or flap. Use the Wencon Cleaner before and after grinding. Grinding with sandpaper or emery cloth is only advisable when, for example, carrying out shaft-repair on a lathe. Often the grinding will not hit the dents.

Needle Gunning

Needle gunning is a method that has almost been forgotten in recent years. Or should we say is mostly used for very rough cleaning or removal of rust. It is possible to do a very nice job using a needle gun, but it takes time and should be closely supervised. It is essential that the marks from the sharp needles cover the whole surface so that none of the original surface remains. It is recommendable to steam clean the surface before needle gunning.

Wire Brushing

Wire brushing can be a good way of removing scales, rust and old paint. However, you will need to grind the surfaces after the wirebrushing to make the surface as rough as possible.