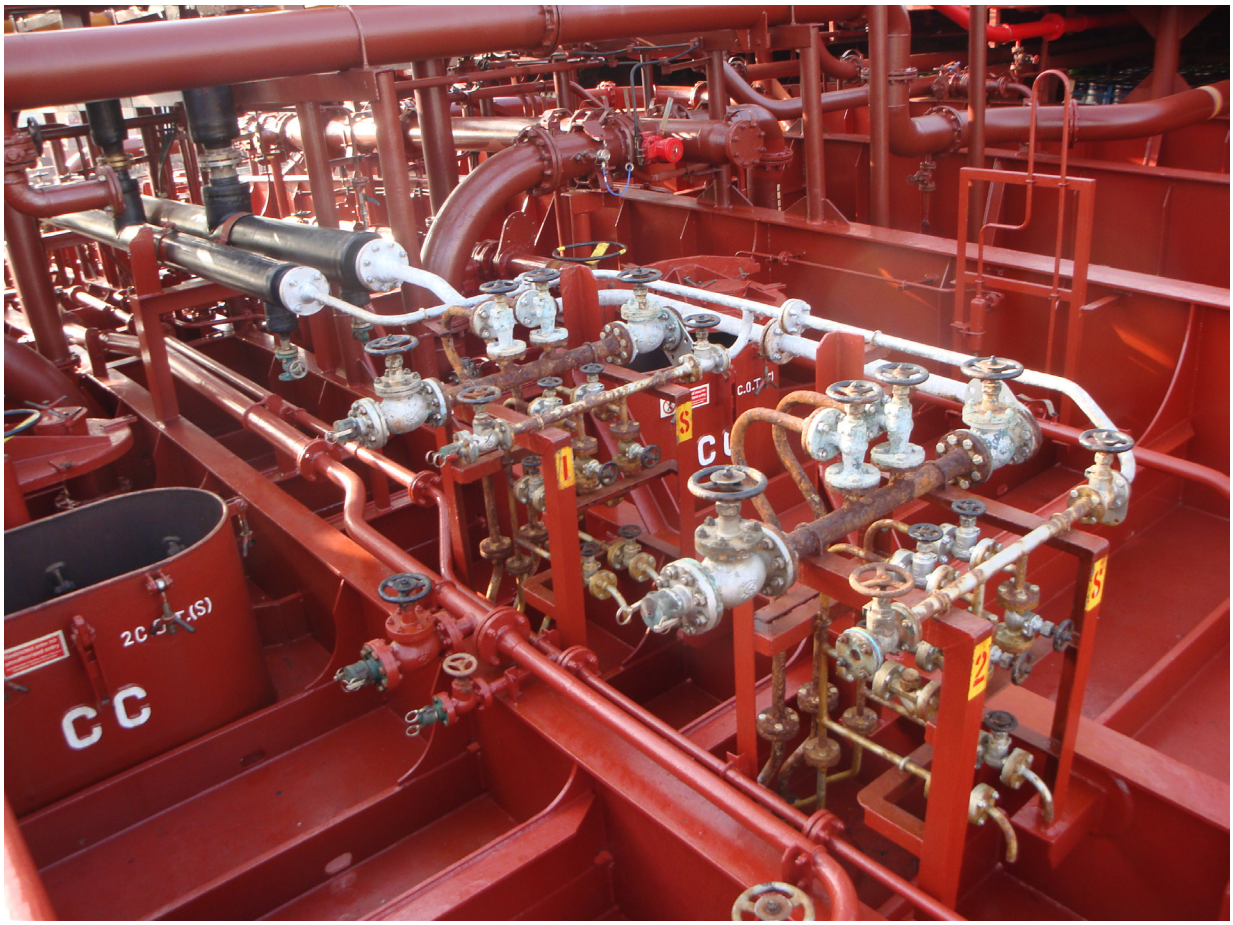
WENCON®
- repair solutions for you

Heating Coils manifold

Application:	Heating Coils manifold suffering from external corrosion.
Place:	Tuzla, Turkey
Date:	November 2014
Job and report done by:	Clients crew
Wencon products used:	1088 light + 1088 dark, Reinforcement Tape, Cleaner, Perago disc, appl. tools



Introduction:

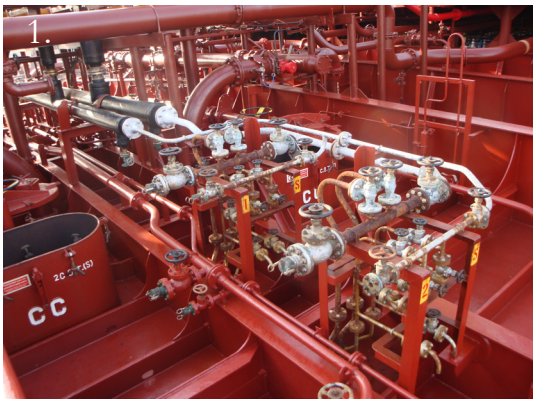
Heating Coils Manifolds suffering from external corrosion problems for several years.
Several initiatives to stop the attacks have been done, using different kind of products, but with limited success.
Task is to find a viable solution to the problem. Besides, to find a solution that makes the crew able to perform the job, without use of special equipment, but with accessible tools, expected to be on board a tanker.

1. Overview: One out of 14 deck Heating Coils manifold.

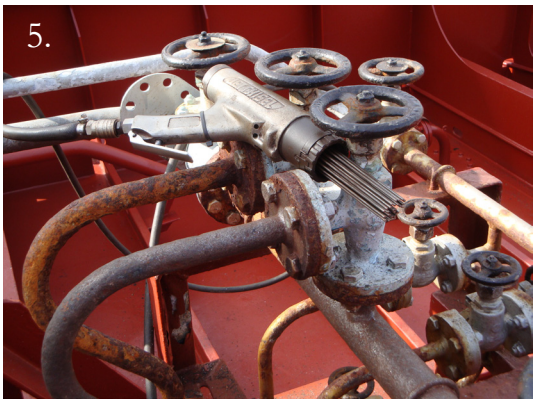
2. Piping is heavy attacked by corrosion. Condition of valves, seems to be a lot better by visual inspection.

3. U-bolts to be removed, in order to lift pipes from bearing. Purpose is to achieve free access to application.

4. Free access to a proper surface penetration and a decent application, without individual openings in the coating by every bearing point on the pipeline.



5. To prepare the surface, a Needle gun is used for chipping the complete surfaces - a very time-consuming task. It is a crucial factor, to ensure the best adhesion possible, under these working conditions.



6. By chipping it is very clear, that piping locally suffers from heavy corrosion.

7. Close up picture during chipping.

It is important, to obtain as rough surface as possible during Chipping, to ensure the best adhesion.

Therefore, do not use wire brush or similar, since this will only polish the surfaces.

8. Wencon Cleaner applied with a brush, to degrease pipings, prior to application.

9. Wencon 1088 Light applied as the first layer, using a brush. To ensure the best adhesion, it is important to rub the Wencon Coating into the dry surface, and hereafter distribute a thick layer of Coating.

10. While 1088 Light is still wet, Wencon Reinforcement Tape is wrapped with 50% overlap. Wencon 1088 Light will penetrate the pores in the tape, and will divide to a smooth surface when using a brush. Afterwards, left for semi curing in approx. 1½ hour before applying second and final layer.

A good advice:

Place a finger in the coating, that leaves a fingerprint **- without sticking to your finger.** You are then ready for second layer.

11. Second and final layer, the Wencon 1088 Dark applied, using a brush. After ended application, please allow minimum 12 hours curing, before opening steam valves from the Engine Room.

12. Final result.

Surface preparation

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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.

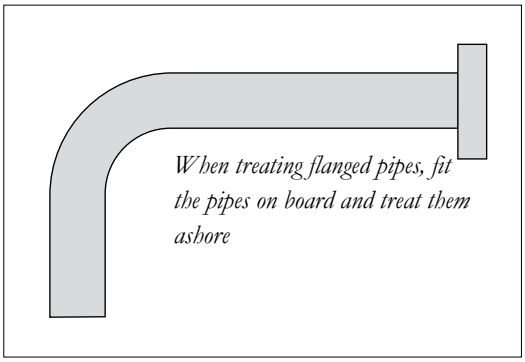
Needle Gunning

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.

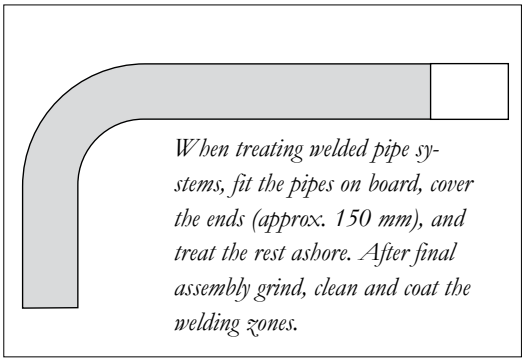
Wire Brushing

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.

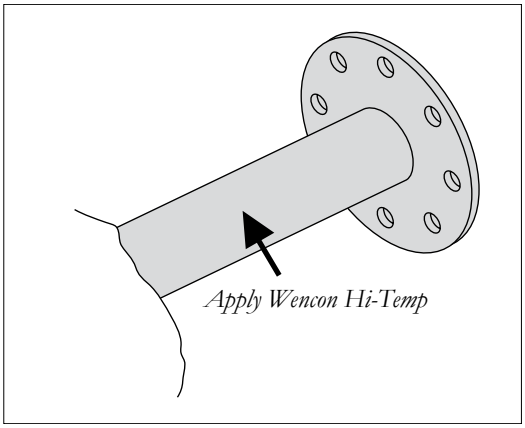
Protection of hot pipes (or cold)



When treating flanged pipes, fit the pipes on board and treat them ashore



When treating welded pipe systems, fit the pipes on board, cover the ends (approx. 150 mm), and treat the rest ashore. After final assembly grind, clean and coat the welding zones.



Apply Wencon Hi-Temp

Hot-water, hot-oil or steam pipes will often be exposed to corrosion on the outer side, due to moisture or water in the insulation. Wencon can eliminate this breakdown with a coat of Wencon Hi-Temp.

Wencon Hi-Temp is a two-component fluid. It can be applied with a paint brush, and quite exceptionally it can be applied at temperatures of over 120°C (248°F).

The cured coating can withstand temperatures up to 160-200°C (320-424°F) depending upon ambient influences.

The coating is very simple to apply and can be made either before or after the pipes have been installed. The most common method, especially with new buildings, is that the pipes are first fitted on board, then removed ashore to be shot-blasted and coated. The only hindrance to making this operation on board is the lack of space.

One of the big advantages with the coating is that damages on the finished coating are easily repaired. The repair is limited to grinding the damaged area and applying a new coat.

Consumption of material. See chapter 1 in the Wencon Repair Manual.

For this application use radiator brushes with half the bristles cut off. This makes the brush well suited to the consistency of Wencon Hi-Temp.

1. Grit blast or grind a belt around the area to be repaired, and clean with Wencon Cleaner.

2. Apply the first layer of Wencon Hi-Temp yellow and let it semicure.

3. While the first layer is still tacky, apply the next layer of Wencon Hi-Temp Green.

4. The repair can be reinforced by using Wencon Reinforcement Tape wrapped tight in the wet Hi-Temp.

5. The finished layer thickness shall be 600-800 microns.

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