

Fibre glass Pipe, leaking

Application:	Repair of leaking fibre glass pipe
Place:	Atlantic Ocean, On-site job
Date:	June 2012
Job and report done by:	Loenen Repairs and Repair Management Nederland B.V.
Wencon products used:	Coating white and blue, Reinforcement Tape, appl. tools



Introduction:

GRP Pipe damaged and starts leaking.

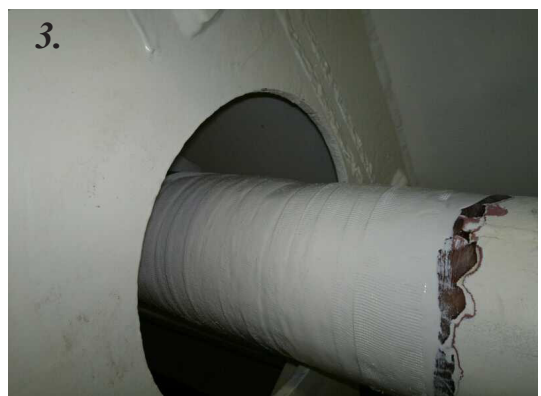
GRP pipes are often not available on “normal” stock and can therefore not be replaced like normal steel pipes. Besides, it requires special training to work with this type of pipes.

1. & 2.

After removing the emergency Pipe Repair Tape and cleaning the surface, a leak was visible. Leak in GRP pipe is caused by burning, due to hot work. Surface cleaned, rough and degreased. Here the burned and damaged parts are very visible.

3. & 4.

First a layer of Wencon Coating White is applied and in wet coating Wencon Reinforcement tape is wrapped around the pipe with an overlap of 50%. A second layer of Wencon Coating is applied over the tape. This process is repeated 2 times. For extra safety the coated and reinforced area is at least 15 cm wider as the damaged area. 2 colours of Wencon Coating visible. Each layer, to ensure that everything is covered.



5. & 6.

Final layer of Wencon Coating blue, and after curing pipe is ready for many years of service.



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.

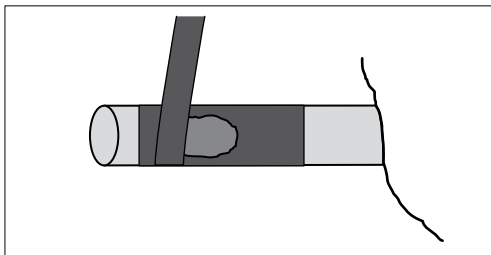
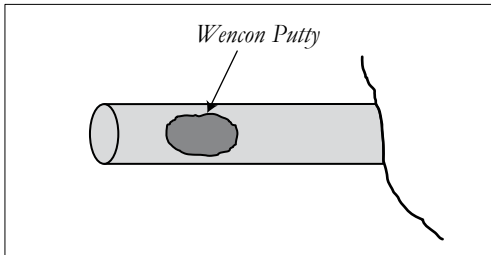
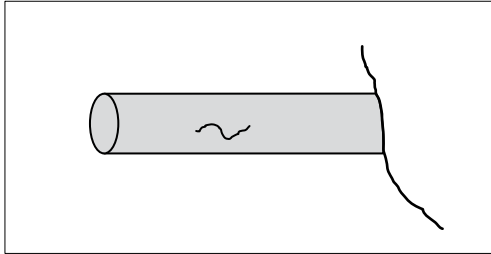
Needle Gunning

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.

Pipe repair - cargo pipe



On all pipe repairs you have to consider - temperature and pressure during operation. This will help you to choose the right Wencon product and the right application datasheet.

In general for normal temperatures use Wencon Cream or Rapid. If you want a top coat use Wencon blue/white coating. For high temperature pipes use Wencon Hi-Temp, which can take temperature up to 160°C (320°F) in corrosive conditions and up to 300°C (570°F) used as a filler. If the surface is wet (ballast pipes) use Wencon UW Cream and Wencon UW Coating as the top coat. Wencon UW Cream and Wencon UW Coating will have a good adhesion on a wet surface - even under water.

1. If possible drain the pipe. Clean and dry the repair area and determine the size of the leak.
2. With an angle grinder, a Perago dish or coarse emery cloth, grind a belt around the pipe over an area 10-15 cm (4-6 inch) wider than the leak. Clean the repair spot thoroughly with Wencon Cleaner.
3. If liquid is still coming out of the leak, mix and apply a suitable amount of Wencon Putty directly into the crack, to stop the leak. Clean again with Wencon Cleaner.
4. Mix an adequate amount of Wencon Cream or Rapid.
5. Apply the first layer of Wencon Cream or Rapid, using a brush or a spatula. (0,3-0,5 mm / 0.01-0.02 inch)
6. Wrap the Wencon Reinforcement Tape tight around the pipe with 50% overlap. Make sure the Reinforcement Tape is fully impregnated with Wencon.
7. Again apply a layer of Wencon, and repeat until you have 3 layers of Wencon Reinforcement Tape and 4 layers of Wencon HiTemp.
8. For repairs that shall last for a longer period, we recommend to apply extra 2 layers of Wencon Coating after same method.

Curing time can be speeded up by heating up - Halogen lamps or like.

To see the theoretical consumption of Wencon material and Wencon Reinforcement Tape, see Chapter 1 in the Wencon Repair Manual.