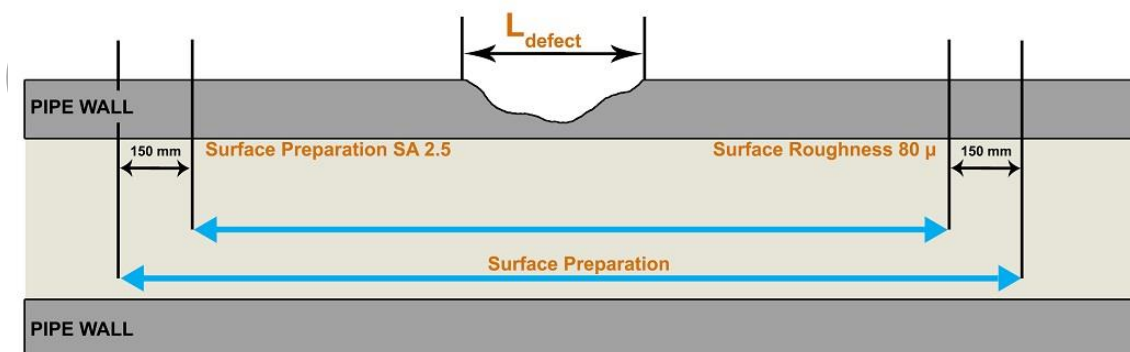


SealXpert Products



Subject :	Method of Statement - Corrosion Repair of Pipes
Client/ End User :	
Project Name :	
Date :	

- 1.0 Carry out site survey to identify and mark the area to be repaired.
- 2.0 Submit Method of Statement, Risk Assessment, product MSDS and cold work permit for approval.
- 3.0 Barricade work area and do not allow entry to unauthorized personnel.
- 4.0 There will be **two persons** working on this repair works and one site supervisor. All personnel should put on appropriate PPE (including safety boots, coveralls, hard hat, safety harness, safety glasses, hand gloves, face mask/ self-breathing apparatus, etc.). Appropriate additional safety measures including PE endorsed proper shoring, emergency escape access, forced ventilation, area and personnel gas meters (for LEL, CO and O₂), lightings, etc. shall be put in place and approved by site safety supervisor.
- 5.0 Before work commencement, shut off or reduce the pipeline pressure and operating temperature as much as possible.
- 6.0 Commence surface preparation – use grit blasting to clean affected pipe surface to SA 2.5 standard. At locations which cannot be performed to the above requirements, these locations shall be cleaned with appropriate non-spark tools (e.g. needle scalers, scabblers, descenders, etc.). While performing surface preparation, the surface of the pipe must remain dry throughout the repair application. All circumferential surfaces within corroded area plus **300mm** extension on all sides of the affected area (i.e. total area of **900mm**) shall be cleaned. Prepare surface roughness to approximately 60 to 80 microns. Use a surface roughness tester to confirm the prepared surface roughness has been achieved.



- 7.0 Commence repair procedure – repair should commence within 4 hours after the surface preparation has been completed. Put on the latex gloves and pour the entire bottle of Wrap Seal PLUS™ hardener into resin tin can. Mix and stir the activated resin mixture for at least **five** minutes until they are well-mixed. Using a roller or paint brush, apply the activated resin

EXPERTS IN PIPELINE PRODUCTS

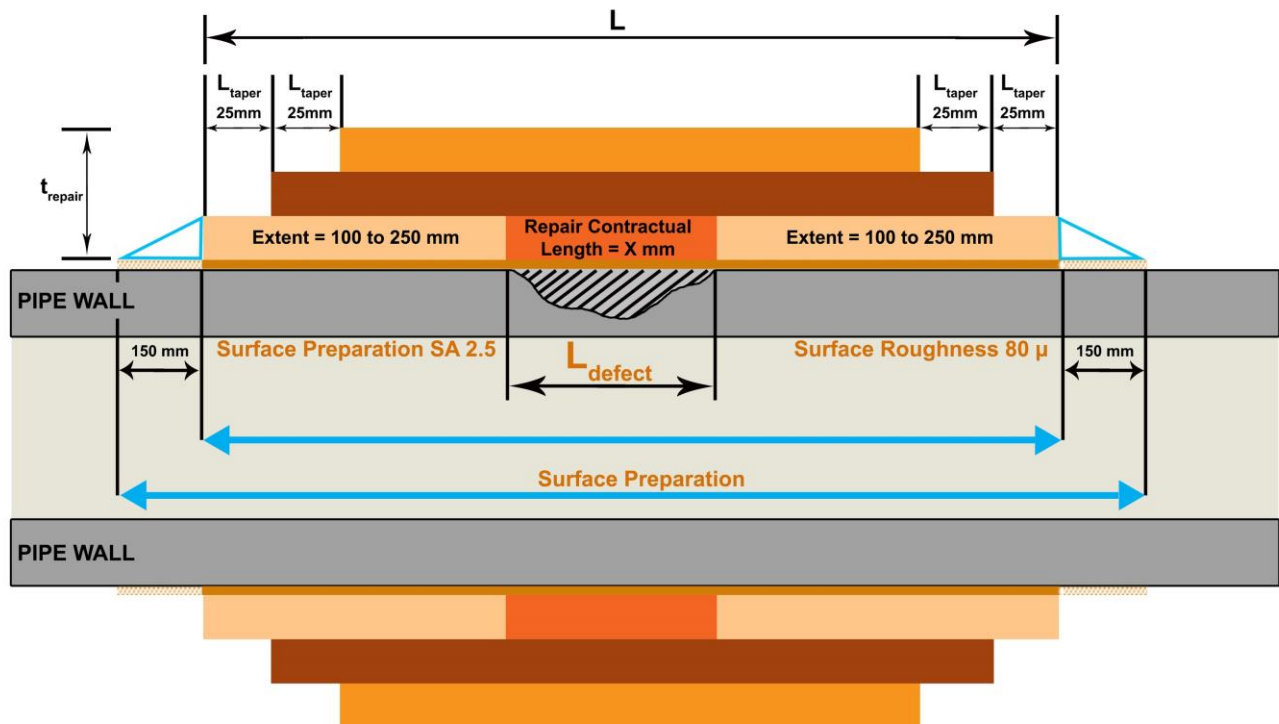
promptly and evenly over the area to be repaired quickly and immediately (as the working time of the activated resin is 10 minutes). The coating of Wrap Seal PLUS™ activated resin should be approximately 2.0mm to 3.0mm thick and cover the entire prepared area plus 150mm. There should be a minimum of 2 layers of coating of Wrap Seal PLUS™ resin and activator onto the pipe surface.

Do not reuse any left-over activated resin in a mixed container or pour new sets of resin & activator into used tin cans. When mixing several sets of Wrap Seal PLUS™ resin & hardener into a mixing container, ensure that all resin and hardener from each container are drained out completely.

Allow coated Wrap Seal PLUS activated resin to be cured for **3 hours**. Use a barcol hardness tester to confirm the cured resin has a hardness greater than **90 (Shore A) or 60 (Shore D)**. Use a holiday detector and set the voltage at 5kV, sweep the detector along the coated pipe surface to check for coating porosity.

- 8.0 Put on the latex gloves and tear open the **2" x 12'** Wrap Seal PLUS™ fiberglass repair tape and immerse it in water for 10 seconds; squeeze the roll while immersing it in water. Remove the fiberglass tape from the water and start wrapping the Wrap Seal PLUS™ fiberglass repair tape. The wrapping of fiberglass tape should start at least **100mm to 200mm** before the leak area. Wrap the pipe as tightly and evenly as possible, pulling slightly after each round of wrapping. Apply the entire roll over the pipe surface with at least 50% overlap for the entire pipe repair length. Total length of wrapping should be at least **600mm**. Repeat the wrapping for at least **8 layers** of Wrap Seal Plus™ fiberglass repair tape (i.e. total thickness of **13.5mm**) and finally tapering off with approximately 25mm over each wrapping layer. The wrapping direction should be done in one direction (clockwise or counter-clockwise) and working time is approximately 20 to 30 seconds for each roll of fiberglass tape (at pipe surface temperature of 30°C).

After using one roll of **2" x 12'** Wrap Seal PLUS™ fiberglass repair tape, immediately open another roll of Wrap Seal PLUS™ fiberglass repair tape, immerse into water and continue the wrapping process by overlapping the end of the previous fiberglass tape with at least **100mm** of the continuing fiberglass tape.



- 9.0 While wrapping the fiberglass tape onto the pipe, consistently pour water onto the fiberglass tape. Wet latex gloves in water and compress the bubbling resins back into the fiberglass wrap by rapidly and firmly stroking the surface with a back and forth motion. After wrapping of the fiberglass tape is completed, continue to pour water onto the repaired pipe section, rapidly and firmly stroke the surface with a back and forth motion until the product is cured.
- 10.0 Allow the repaired area to be cured for at least 5 hours. Check and confirmed that the Barcol hardness measurement shows a Shore D hardness reading of 35 or above.
- 11.0 Repair job is completed and the repaired system can be operated back to normal operating conditions.