CSNRI®

INSTALLATION GUIDE AND CHECKLIST

SNAP WRAP™

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REPAIR INFORMATION

General Data

Date: _____

Repair ID #: _____

Snap Wrap Serial #: _____

Adhesive Lot #: _____

Activator Batch #: _____

(Blue)

Expiry Date: _____

Filler Lot #: _____

Activator Batch #: _____

(Salmon)

Expiry Date: _____

Pipe Temperature: _____

Ambient Temperature: _____

Pipeline Data

Location: _____

Pipe Diameter: _____

Wall Thickness: _____

Pipe Grade: _____

Pipe Type: _____

(ERW, DSAW, EFW, Seamless, Etc.)

Operating Pressure: _____

Installation Pressure: _____

Coating Type: _____

Defect Data

Defect Type: _____

Defect Dimensions: _____

(Length, Width, Depth)

INSPECTION CHECKLIST

The following items should be verified by pipeline inspectors not participating in the Snap Wrap installation, to confirm that key aspects are being completed.

Pre-Installation Inspection

- ☐ Repair Information is recorded correctly on the form provided in the Installation Guide.
- ☐ Adhesive and filler are within expiry dates.
- ☐ Surface preparation of the repair area meets NACE #3 standards or equivalent.
- ☐ Ambient and pipe surface temperature are recorded correctly.
- ☐ Installation guidance marks are made to ensure a 2-inch (50 mm) margin beyond either side of the defect.
- ☐ Pipe condensation is removed as needed using acetone and contact spray at the defect location.

INSPECTION CHECKLIST

Installation Inspection

- ☐ Appropriate amount of activator is mixed with adhesive and filler materials.
- ☐ Filler layer in defect area and along longitudinal seam is adequate. (Filler should extend at least 2 inches [50 mm] above and below longitudinal seam, the entire distance between installation guidance marks.)
- ☐ Sufficient adhesive coverage is applied to the entire surface and filler layer.
- ☐ Installers continuously confirm adequate adhesive application on the bottom quadrant of the pipe.
- ☐ Installers continuously confirm good Snap Wrap sleeve fit to the pipe at the 6 o'clock position.
- ☐ Adequate adhesive coverage is applied to installed sleeves as wrapping progresses.

INSPECTION CHECKLIST (CONT.)

Sleeve Tightening

- ☐ Hose clamps/ratchet straps are in good condition.
- ☐ Steady pressure is applied throughout tightening with hose clamps or ratchet straps.

Completion Inspection

- ☐ Installers remove extruded filler and adhesive from both edges of the Snap Wrap.
- ☐ Installers should verify there are no gaps or voids between sleeves or between pipe and first sleeve.
- ☐ After adhesive has cured, verify hardness with either durometer (40 Shore A) or thumbnail print.
- ☐ Metallic marker bands are placed upstream and downstream of the repair area, if desired.
- ☐ Repair is coated as a standard repair. Opaque coating is used for aboveground piping.

SNAP WRAP CONTENTS

1. Composite Sleeves
   (Each layer will be marked; ¾ to 6 inches [19 to 127 mm] are blue, 8 to 56 inches [20 to 142 cm] are yellow.)
2. Accessory Kit
   (Includes 5 hose clamps for tightening sleeves, or 2 ratchet straps for diameters above 18 inches [46 cm].)
3. Adhesive
4. Adhesive Activator (Blue)
5. Filler
6. Filler Activator (Orange)

MINIMUM PPE

The following list is the recommended minimum PPE while installing Snap Wrap. It is not intended to supersede installer or site requirements.

1. Safety Glasses
2. Hard Hat
3. Steel-toed Boots
4. Rubber Gloves
5. Disposable VOC Mask (optional)
6. TYVEK Suit (optional)

PREPARE PIPE SURFACE

1. In the event of adverse weather conditions cover the repair area, if necessary.

   For severe weather conditions or if condensation persists on the pipe surface, refer to the Clock Spring Training Manual or contact Clock Spring Company, L.P., for assistance.

2. Remove pipe coating, corrosion residue, primer, and adhesive by sandblasting or grit blasting from an area extending 4 to 6 inches (102 to 152 mm) from either side of the area to be repaired.

3. If the area cannot be sandblasted, use a hand grinder with a 24 to 80 grit disk. Wire brushing is not recommended. Confirm pipe surface meets NACE #3 standards or equivalent.

PREPARE PIPE SURFACE (CONT.)

4. Wipe repair surface with MEK or Acetone. Do not use any other type of solvent during these repairs.

   Handle these highly flammable liquids with care, per their material safety data sheets.

5. Dry-apply the first level of Snap Wrap sleeves around the pipe, ensuring that the sleeves are centered over the intended application area with at least 2 inches (50 mm) on either side of the defect. Mark the sleeve edges for future reference and remove the sleeve(s).

   If girth weld exists and conflicts with the Snap Wrap corrosion barrier application, follow the Girth Weld Bead Application Procedure in the Girth Weld installation manual.

INSTALL SNAP WRAP SLEEVES

NOTE: For deformation defects or extensive cluster corrosion, refer to the Clock Spring Training Manual for single wrap mold instructions.

1. Knead filler packet and both activator packets with thumbs to soften.
2. Determine the correct amount of activator to use for the filler and adhesive, based on the chart found on the filler packet, the adhesive quantity chart below, and the higher temperature measured (ambient or pipe surface).

Installation Temperature		Adhesive Quantity (grams)					Approximate	
		650	1200	1700	2400	3000	Working Time (minutes)	Cure Time (hours)
˚C	˚F	Activator Quantity (grams)						
0	32	80	150	215	300	380	45	2.5 – 3
10	50	65	120	175	245	310	45	2.5 – 3
21	70	50	95	135	190	240	45	2.5 – 3
27	80	40	75	105	145	180	45	2.5 – 3
32	90	35	70	95	135	170	35	2 – 2.5
38	100	35	60	90	120	150	23	1.5 – 2
43	110	35	60	85	120	150	22	1.5 – 2
49	120	35	60	85	120	150	21	1.5 - 2

INSTALL SNAP WRAP SLEEVES (CONT.)

3. On a flat surface, such as cardboard scrap, squeeze out the tube of filler and mix with the orange activator until uniform in color, with no streaks (approximately 2 to 3 minutes).

4. Premix the adhesive, then mix with the blue activator until uniform in color, with no streaks, following the guideline below.

5. If pipe coating in the area contains zinc or coal tar, apply a small sample of the adhesive to verify the repair surface is adequately cleaned. If the adhesive changes from blue to green, the area needs to be cleaned again, or adhesive will not cure properly.

   Working time begins once activator is mixed. For more detailed mixing instructions and cleanup, disposal, and storage requirements for these materials, see the Clock Spring Training Manual.

INSTALL SNAP WRAP SLEEVES (CONT.)

6. Use the putty knife to generously apply and compress filler into all voids, along both edges of the longitudinal weld, and to the edge of the starter pad.

7. Confirm that filler extends at least 2 inches (50mm) above and below the longitudinal seam.

TRAINER TIP:

You can never use too much filler.

INSTALL SNAP WRAP SLEEVES (CONT.)

8. Pour adhesive mixture into the application tray.

9. Use the roller to apply adhesive to the entire pipe surface to be repaired.

   At the same time, a second worker should use a paint brush to touch up any spots the roller misses. The film should be light enough that the pipe surface can be seen through the adhesive.

TRAINER TIP:

Always roll adhesive in a downward direction.

INSTALL SNAP WRAP SLEEVES (CONT.)

10. Apply the first Snap Wrap sleeve over the filler and adhesive, with the longitudinal seam at the 3 o'clock position.
11. Gently squeeze the first layer sleeve to ensure full surface contact with the pipe surface.
12. Apply filler between the seam of the first layer.

INSTALL SNAP WRAP SLEEVES (CONT.)

13. Apply adhesive uniformly to the outer surface of the first-layer sleeve.

INSTALL SNAP WRAP SLEEVES (CONT.)

14. Position the second-layer sleeve over the first-layer sleeve with the longitudinal seam at 90-degree offset from first-layer sleeve. Each subsequent layer, rotate seam another 90 degrees.

TRAINER TIP:

It's best to never place seams over the defect or over each other.

15. Gently squeeze the second-layer sleeve to ensure full surface contact with the first-layer sleeve.

INSTALL SNAP WRAP SLEEVES (CONT.)

16. Apply adhesive uniformly to the outer surface of the second-layer sleeve.

17. Apply remaining layers as above.

18. Align the edges of all the sleeves within the marked reference lines. Use wooden alignment blocks as needed.

TIGHTEN SNAP WRAP SLEEVES

1. Secure the assembled Snap Wrap sleeves using the metal hose clamps or ratchet straps.
2. Tighten clamps, beginning in the middle of the sleeve and working outward in both directions.

TIGHTEN SNAP WRAP SLEEVES (CONT.)

3. Sequentially tighten clamps with the same pattern (from the center outward) until adhesive stops extruding from the longitudinal seams and ends of the sleeve layers.

   NOTE: Clamps should be firmly tightened, but should not twist off the clamp-tightening nut.

COMPLETE INSTALLATION

1. Remove extruded filler and adhesive from both edges of the sleeves and the longitudinal seam using the putty knife.

2. Visually inspect the installation to ensure sleeves are tight and fit snugly around the entire pipe circumference, with no voids or spaces between sleeves, or between sleeve and pipe.

COMPLETE INSTALLATION (CONT.)

3. Wait approximately 2 hours for adhesive to cure.

4. Check for a minimum hardness of 40 on the Shore A scale. Snap Wrap must be removed if adhesive is not hard enough. If a hardness tester is not available, it's adequate to verify that a thumbnail does not leave an indentation.

5. Treat the repaired area with external coating, just like a standard pipe repair. Snap Wrap is UV sensitive; coating applied to aboveground pipe repairs must be opaque.

TRAINER TIP:

No special coating is needed on the coil.

NOTES

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