

TP **Telepak Industries** *Splice & Seal*TM

SHEATH REPAIR SYSTEM

Non-Pressurized Sheath Repair

The Splice & Seal Sheath Repair System can be used on any size or type PIC Cable, Filled or Air Core, not under continuous or static air pressure.

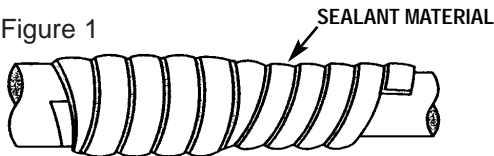
Materials Needed:

- | | |
|------------|-------------------|
| TPISS-1012 | SEALANT STRIPS |
| TPI-7XXX | SLEEVING MATERIAL |
| TPICT-XXW | CABLE TIE WIDE |
| TPIET-XX | END TAPE |

Size and amount of material required will vary with cable diameters and length of damage.

Installation Procedures:

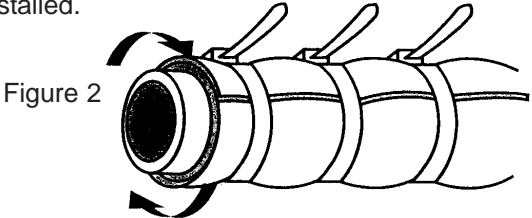
1. Clean sheath 8 inches each side of the damage using an approved cleaner or wipe.
2. Starting and ending 3 inches beyond sheath damage, wrap a single layer of half-lapped TPISS-1012 Sealant Strip.



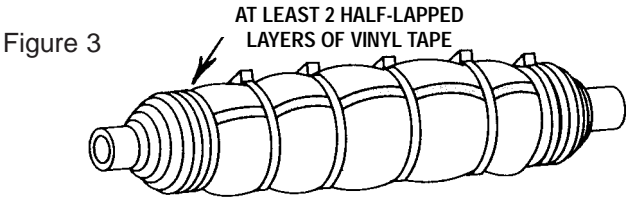
3. Select a piece of Sleeving Material meeting edges of Sealant Strip and over lapping itself at least 1 1/2 inches. Multiple pieces of Sleeving may be used as long as 1 1/2 inch overlap is adhered to.

4. Keeping under tension, install Sleeving while forming smoothly around repair wrap.

5. Place heavy duty cable ties over Sleeving and hand tighten securely. Space ties approximately 2 inches apart to match circular marks on Sleeving Material. Wrap ties in same direction as the Sleeving was installed.



6. A cable tie-tightening tool can be used, but take caution not to compress Sleeving over 1/8 inch. Trim off all cable ties. Ends can be finished by placing two 1/2 lapped layers of vinyl tape, 2 inches up on Sleeving down on to bare cable sheath.



Pressurized Sheath Repair - Minor

The Splice & Seal Pressurized Sheath Repair System can be used on all PIC, Paper or Pulp Insulated Air Core cable, Lead or Poly Sheaths (Stalpeth, PASP, ASP or Alpeth) on any cable diameter. The system was designed for repair of continuous or statically pressurized cable including extreme damages where there is conductor damage or the loss of sheath integrity where re-bonding is required.

Materials Required:

TPISS-1012
TPI-7XXX
TPICT-XXW
TPIVT-1
TPIDR-T
TPIPT-97
TPIET-XX

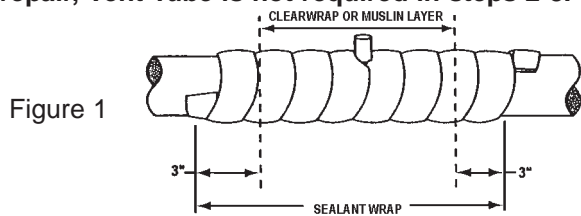
SEALANT STRIPS
SLEEVING MATERIAL
CABLE TIES HEAVY DUTY WIDE
VENT TUBE
DR TAPE
PRESSURE TAPE
END TAPE

Size and amount of materials required will vary with cable diameters and length of damage.

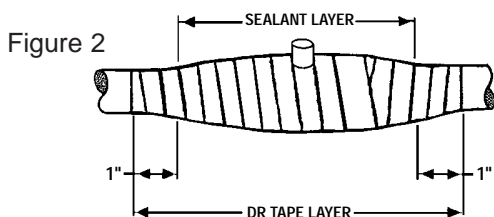
Installation Procedures Minor Repairs:

- 1) Clean sheath 12 inches each side of damage using an approved cleaner or Wipe.
 - a) **DO NOT card or scuff plastic sheath. Lead sheath can be carded or shaved clean.**
 - b) If cable pressure cannot be bled down, a TPIVT-1 Vent Tube must be installed.
 - c) Center the Vent Tube directly over damage.

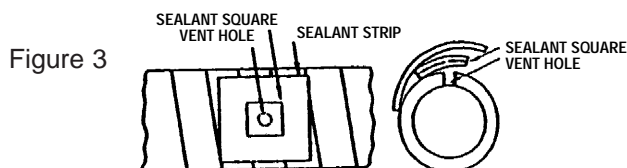
NOTE: If air pressure can be safely bled off during the repair, Vent Tube is not required in steps 2-8.



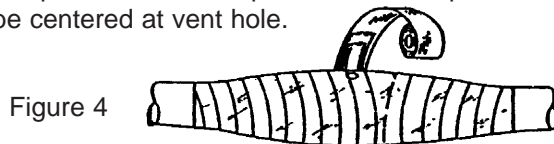
- 2) Starting and ending three inches beyond sheath damage, wrap a single layer of half-lapped TPISS-1012 Sealant Strip.
 - a) When Vent Tube has been reached, pinch sealant up on the tube.
 - b) **DO NOT stretch the Sealant.**
- 3) Install two half-lapped layers of DR Tape, under continuous tension.
 - a) Starting and ending 1 inch left of center extending three inches beyond each end of Sealant, wrap a half-lap layer of 2-inch DR Tape in a Z fashion.
 - b) When Vent Tube is reached, pinch the DR Tape up around it and complete the DR application.



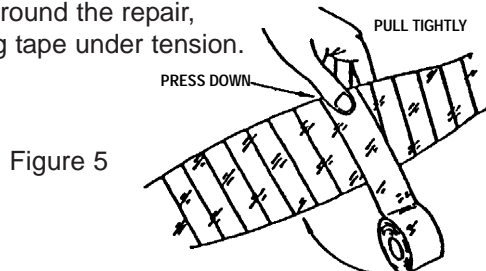
- 4) Over the DR Tape, place two half-lapped layers of TPIPT-97 Pressure Tape under continuous tension, starting and finishing just outside the DR Tape.
 - a) When reaching Vent Tube, pinch Pressure Tape up onto Vent Tube.
- 5) Pull out and discard Vent Tube (pliers may be necessary; twist and lift up).
- 6) Form a Sealant square 1/2 inch x 1/2 inch x 1/4 inch thick. Tuck sealant square on the back edge of vent hole. (See Figure 3.)
 - a) Cut a piece of Sealant Strip to a length equal to diameter of repair; place it above the Sealant square and tuck it in.
 - b) **DO NOT block the vent hole.**



- 7) Wrap the Pressure Tape around the repair so it will be centered at vent hole.



- 8) Hold the roll of Pressure Tape in one hand and pull the tape over the Sealant Strip. With the thumb of the other hand press the sealant square down into the vent hole.
 - a) Wrap around the repair, keeping tape under tension.



- 9) Continue wrapping Pressure Tape around vent hole area for a minimum of three inches on both sides of vent hole.
 - a) Tape side to side forming three layers of tightly wrapped Pressure Tape over vent area.
- 10) Install Moisture/Vapor Barrier. Wrap one 1/4 inch - 1/2 inch lapped layer of aluminum tape or aluminum sheeting over entire wrap of pressure tape. Smooth aluminum along splice bundle using hammer handle or equivalent over entire barrier.

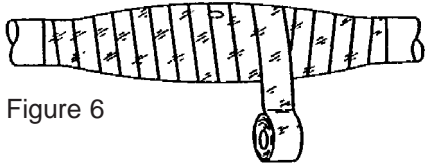


Figure 6

- 11) Just outside wrapped Pressure Tape, place two layers of Sealant Strip forming a collar. Continue up repair 4 inches with a single layer of Sealant Material.

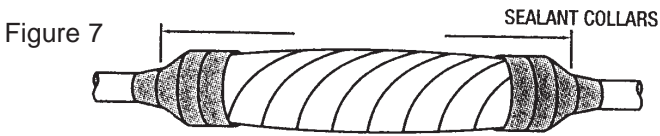


Figure 7

- 12) Select a piece of Sleeving Material to extend three inches beyond Sealant Collars overlapping itself at least 1-1/2 inches. Use additional piece if needed for a larger sized repair.

- 13) Keeping under tension, install Sleeving while forming smoothly around repair wrap.
- 14) Over Sleeving, place and hand tighten securely, Wide Cable Ties spaced to match circular marks on Sleeving or approximately 2 inches apart. Wrap ties in the same direction as the Sleeving was installed.

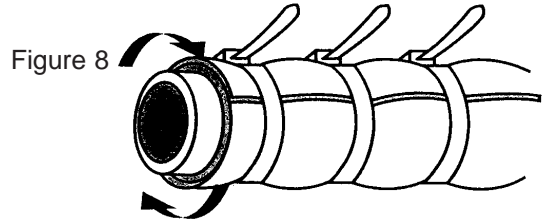


Figure 8

- 15) A cable-tie tightening tool could also be used but take caution not to compress Sleeving over 1/8 inch. Trim off cable tie tails.
- 16) Tape ends of Sleeving tightly with End Tape (ET) out onto cable sheath.

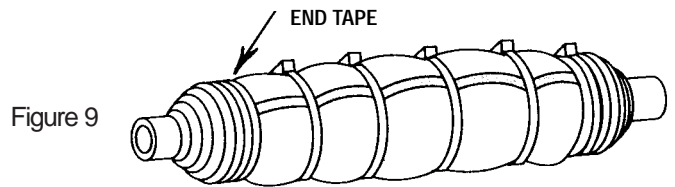


Figure 9

NOTE: The above installation procedures should be followed when installing or repairing auxiliary wraps, insulated joints and sheath dams.

Pressurized Sheath Repair-Extreme Damage or Double Sheath Cable (PASP)

Materials Needed:

TPISS-1012	SEALANT STRIPS
TPI-7XXX	SLEEVING MATERIAL
TPICT-XXW	CABLE TIES HEAVY DUTY WIDE
TPIVT-1	VENT TUBE
TPIDR-T	DR TAPE
TPIPT-97	PRESSURE TAPE
TPIET-XX	END TAPE
TPICW-30	CLEAR WRAP
TPIBC-2	BOND CLAMPS
TPIMW-24	MULSIN WRAP

Size and amount of materials required will vary with cable diameters, bundle and length of damage.

Installation Procedures Extreme Repairs:

- 1) Remove inner and outer sheath, including tern plate and core wrap to the required length governed by extent of damage. Cut outer sheath and tern plate 4 inches back from the edges of the inner sheath opening.

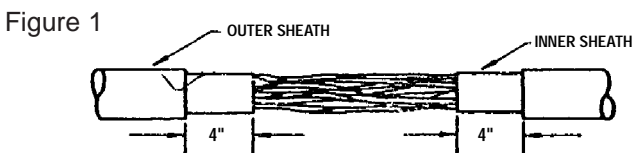


Figure 1

- 2) Thoroughly remove all dirt and grease from 12 inches of outer sheath and all exposed inner sheath. DO NOT scuff or card. Use only greaseless approved wipe.
- 3) Install approved bond clamps in the outer sheath.
- 4) Place a single half-lapped layer of TPISS-1012 Sealant Strip around inner sheath, leaving 1 inch exposed sheath near opening.

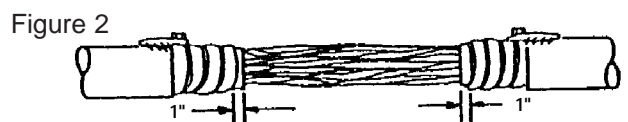
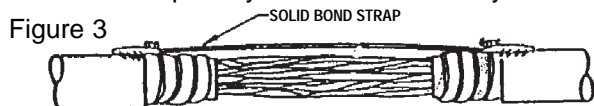


Figure 2

5) Install a solid flat bond strap (i.e. bond ribbon) across opening. Clean strap with approved cleaner or Wipe.

6) Press bond strap firmly into the Sealant Layer.

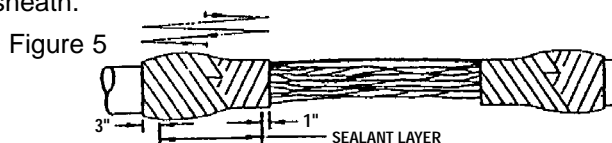


7) Cut bond clamp studs off flush and file smooth.

8) Start 3 inches beyond the bond clamp and ending 1 inch from the sheath opening. Wrap a single layer of half-lapped TPISS-1012 Sealant Strip over the outer sheath inner sheath junction on both sides. DO NOT stretch Sealant.



9) Starting at the center of each sealant layer, half lap 2-inch DR Tape in a Z fashion on both sides as shown in Figure 14. Wrap the tape under continuous tension, overlapping the sealant 3 inches onto the outer sheath and 1 inch on the inner sheath.

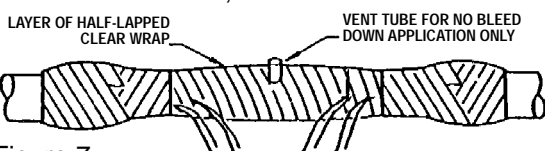


10) Make any necessary conductor repairs and lift the ends up and out of the opening. (See Figure 15.)

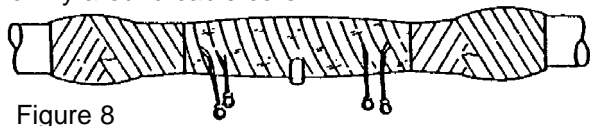


11) If the cable is bled down and no pressure valve is required, wrap the entire length of the opening with a layer of half-lapped Clear Wrap, Muslin if cable is pulp. DO NOT cover damaged pairs.

12) If cable is not bled down, install a Vent Tube.

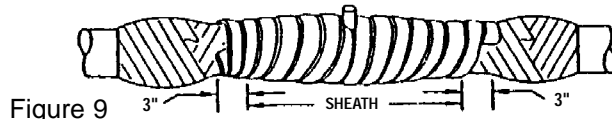


13) Fold damaged conductors and stagger them uniformly around cable core.

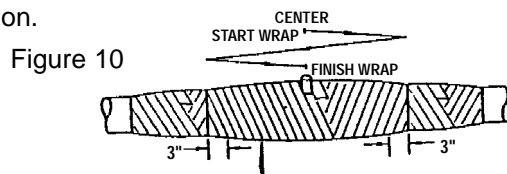


14) Wrap a single half-lapped layer of TPISS Sealant Strip across the sheath opening to build up the core area with isolations on each end. Cover connectors, if any. When Vent Tube has been reached, pinch sealant up on the tube.

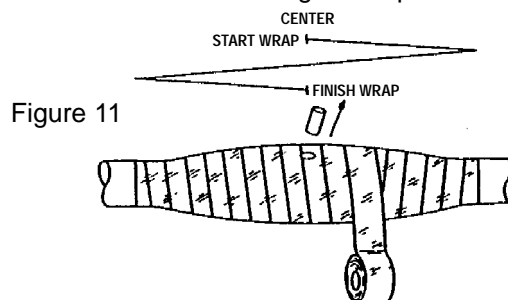
15) Starting and ending 3 inches beyond the sheath opening, wrap a second layer of half-lapped Sealant, building up sheath opening to match diameter of outer wrap. DO NOT stretch Sealant.



16) Starting and ending at 3 inches beyond the Sealant Layer, half-lap 2-inch DR Tape in a Z fashion as shown in Figure 19. Apply tape under continuous tension.

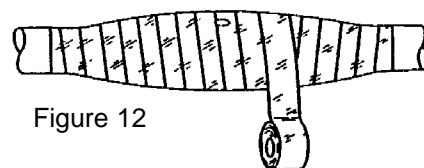


17) Starting and ending at the center of the DR Tape layer, half-lap 2 layers of TPIPT-87 Pressure Tape in a Z fashion over entire length of repair.



NOTE: Repeat steps 5-8 (Minor Sheath Repair Practice) for tube removal.

18) Install Moisture/Vapor Barrier. Wrap one 1/4 inch - 1/2 inch lapped layer of aluminum tape or aluminum sheeting over entire wrap of pressure tape. Smooth aluminum along splice bundle using hammer handle or equivalent over entire barrier.



NOTE: Aluminum Sheeting is recommended for ease of installation.

19) Now, repeat steps 11-16 (Minor Sheath Repair Practice) to complete repair.

NOTES:

Remember!
There is no job so important
that we cannot take the time
to perform our work
SAFELY!

WARRANTY: Telepak Industries (TPI) sells its products knowing the user will evaluate and determine the suitability for the intended application. You assume all risks and liability associated with such use. All Telepak Industries cable products are warranted to be free from all defects in material and workmanship at the time of sale. Our obligation under this warranty is limited to, at our option, to replace or reimburse for any product proved defective within 2 years from the date of delivery. Proof of purchase is required.

Limited Liability and Exclusions: TPI MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TPI WILL NOT BE LIABLE FOR ANY LOSS OR DAMAGE FROM USE OF THESE PRODUCTS WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL REGARDLESS OF LEGAL THEORY ASSERTED.



1505 Northwest 30th Street
Faribault, Minnesota 55021
(PH) 800-324-3314 • (Fax) 507-334-5895