





Soft Patches are applied to allow for restoration of damaged piping systems with small holes or cracks and is the most versatile temporary pipe patch available. Because of its versatility the soft patch can be applied to any type of piping damage and contour on low pressure systems of up to 150 psig.

Soft Patch	
	
Step 1. Isolate the system.	Step 2. Remove lagging if applicable.
	
Step 3. Cut off any protruding edges with a hack saw or hammer them flush.	Step 4. Insert wedges or plugs to completely fill in the crack or hole (hand tight). The hatchet maybe needed to shape the wedges or plugs (the fewer the better).



Step 5. Mark a line on the wedges or plugs along the pipe and then remove from crack or hole.



Step 6. Cut wedges or plugs approx. one-half inch below the marked line (so fluid within the pipe is not impeded upon) and wrap the cut ends of the wedges or plugs with cloth or oakum.



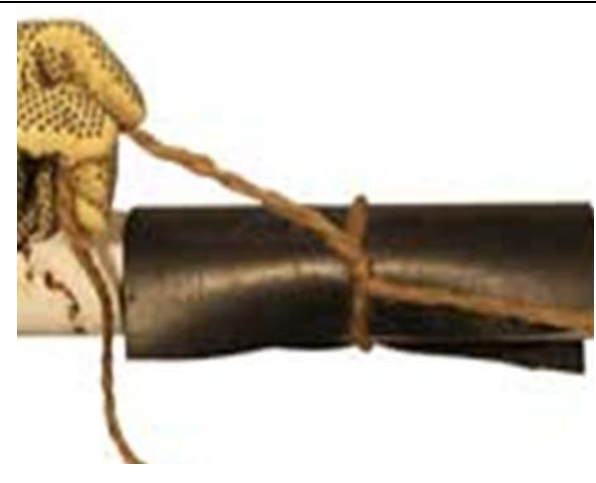
Step 7. Insert wrapped wedges or plugs into pipe. Utilizing the hammer firmly seat the wedges and plugs.



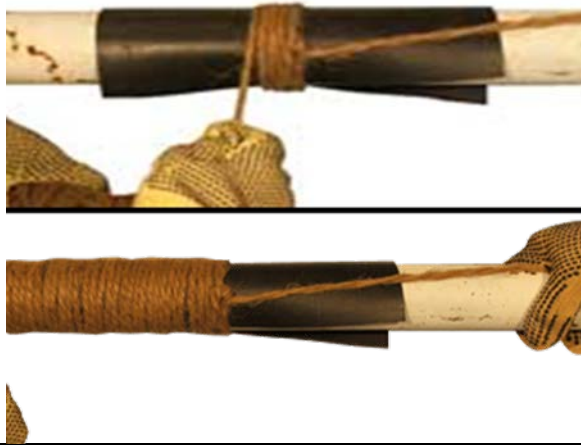
Step 8. Trim the wedges or plugs flush with the outside of the pipe utilizing the hacksaw.



Step 9. Measure and cut a piece of sheet rubber so that it extends two inches on either side of the damaged area and will wrap around the pipe, leaving a one-quarter-inch gap between ends.



Step 10. Center the sheet rubber over the damaged area and secure by applying one wrap of marlin in the center of the rubber sheet with a square knot, leave an 8 to 12 inch bitter end and hold it out of the way.



Step 11. Begin wrapping the marlin around the pipe as tight and close together as possible working from the center towards either the left or right side of the sheet rubber and extend the marlin at least $\frac{1}{2}$ inch past the edge of the rubber sheet.



Step 12. Reverse the wrap direction so the marlin forms a second layer over itself and keep the second layer of marlin wrapped tightly against the first layer.



Step 13. Continue to wrap the marlin from the center to at least $\frac{1}{2}$ inch past the rubber's edge on the opposite end of the patch. Ensure the bitter end of marlin from the starting point continues to hang free or held out of the way for later use.



Step 14. Reverse the wrap direction and tightly wrap the marlin back towards the center of the patch.



Step 15. Tie off the marlin wrapping to the bitter end of the marlin from the start of the wrap and cut off the unused roll of marlin.



Step 16. Re-pressurize system slowly and check for leaks.

ADDITIONAL TIPS:

1. Soft Patch is best applied with two personnel.
2. Soft Patch can be applied to any contour of piping to include elbows and flanges.
3. Soft Patch can be applied to Firemain, Seawater, Electronic Cooling water, Potable water, Steam, LP air, Drain lines, etc.
4. If the piping wall is thin or brittle DO NOT attempt to insert plugs or wedges into holes or crack further piping damage may result. A different patch may be better suited.
5. Trim the wedges or plugs by allowing the hacksaw blade to follow the piping and use smooth even strokes to prevent loosening the wedges or plugs when cutting.
6. If additional marlin is needed during the wrap, re-wrap the marlin core handle with marlin from the large coil of marlin stowed within the Damage Control Repair Station.
7. The end goal is to restore system capability in a short period of time with minimal risk. The patch may leak some but should be manageable.