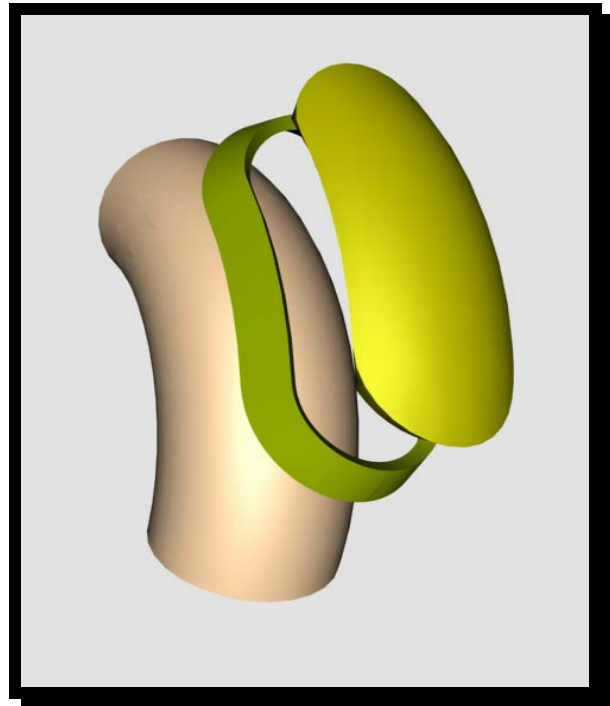
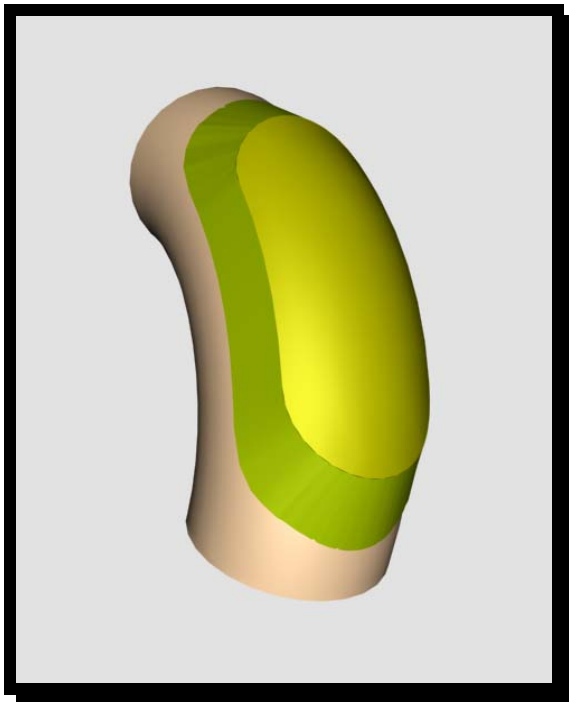


PMCap-Elbow^(Patented)

Pressure Boundary Repair Component for Pipe Elbows

- Pipe elbows are subject to internal metal loss and wall thinning due to flow accelerated corrosion (FAC).
- The **PMCap-Elbow** provides users with a quick and cost effective alternative to replacement of pipe elbows that have internally eroded and thinned.
- The **PMCap-Elbow** is welded to the outside surface (extrados) of an elbow using a full penetration weld and replaces the encapsulated pressure boundary.
- Additionally, a SIF (Stress Intensification Factor) Reduction Collar can be welded around the periphery of the **PMCap-Elbow** to reduce localized stresses where fatigue and cyclic loading are a concern.
- Code compliance is restored without requiring elbow or degraded area removal. Cutting of pressure boundary, foreign matter intrusion, and exposure of pipe internals to the environment, is eliminated.
- The **PMCap-Elbow** includes a corrosion allowance, or can be constructed of corrosion resistant material or with a corrosion resistant liner.
- **PMCap-Elbows** are designed and constructed to ASME Code rules and can be supplied Code stamped. For Section III piping they are supplied as ASME code-stamped "N" components. The complete package includes hardware, partial data reports, shop fabrication drawings, material test reports, and certified calculations.
- Total hardware and installation costs of repairs using the **PMCap-Elbow** are significantly less than those associated with traditional elbow replacement.



For more information on the "**PMCap**" repair method refer to www.pmcengineering.com



PMCap-Elbow Advantages

The **PMCap-Elbow** has several advantages over traditional component replacement and alleviates many negative aspects. Advantages of repairs using the **PMCap-Elbow** include but are not limited to:

1. **does not require removal of existing elbow or cutting out local degraded material areas**
2. **requires minimal preparation of pressure retaining material.** In contrast, replacement may require significant weld preparation.
3. **less welding than replacement.** Component replacement welds must match surrounding material thickness. *PMCap-Elbows* may be attached to sound material with welds of any thickness that meets code requirements.
4. **eliminates exposure of personnel to lethal or hazardous fluid contents** such as chemical, gas, or radioactive fluid contents of a pressure retaining item.
5. **eliminates potential intrusion of foreign materials** into the internals
6. **simplifies any required hydrostatic or pneumatic testing** of piping system since pressure boundary is not breached
7. **is not limited to a specific geometrical shape** and may be constructed to most any regular or irregular shape including but not limited to round, obround, square, or any combination of the these shapes. May be split to encapsulate nozzles.
8. generally **only requires surface examination of attachment welds,** however, full volumetric examination of welds is possible
9. **satisfies all ASME Code criteria, National Boiler Inspection Code, API-510 Pressure Vessel Inspection Code, and has been accepted by State Jurisdictional Authorities and major insurance carriers**

For more information on the **PMCap** Repair Method refer to www.pmcengineering.com or contact:
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