



ASME NUCLEAR CODE CASE 589 APPROVED

ASME POST MAINTENANCE CONSTRUCTION - DOT COMPLIANT

### **Diamond Wrap™ - A pipe around a pipe - An Engineering Design Solution**

**REFINERY-** Each plant situation is carefully evaluated upon completion of a Diamond Wrap Engineering Assessment - identifying pipe schedule, temperature, operating pressures, and concentration of line chemistry. Diamond Wrap is a pure carbon/epoxy composite system. It is a structural wrap design complete with design calculations to handle specific operating conditions and line configurations of the operating system.

- Prevent emergency downtime - Restore structural integrity to deteriorated weld seams
- Extend service life of piping system - Improve span support where corrosion has decreased wall strength
- Low to high pressure - Keep a line safely in service until the next turnaround
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**PIPELINE -** Diamond Wrap is considered a permanent composite repair for pipeline applications as defined by the DOT under 49CFR 192 and 195. The DOT does not recommend or endorse commercial products in regulated pipeline systems.

- High Pressure - Rehabilitate pipe with irregular features, elbows, tees, etc.
- High pressure - Low profile - Continuous wrap
- Pure carbon strength - Axial and Hoop stress support - 100 year expected life
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**PETROCHEMICAL -** Petrochemical operations support a large variety of line chemistry production. In addition to replacing wall loss, the wrap design takes into consideration the type of flow within the line. Diamond Wrap Epoxy Systems are designed to provide containment in the event of total wall loss. A Diamond Wrap Engineering Assessment assures an effective solution.

- Low to high pressure - Restore structural integrity to corroded tanks
- Special Epoxy systems - Increase strength of pipe due to wall loss
- Improve pressure vessel rating through structural support of the Diamond Wrap
- Replace strength of pipe loss due to corrosion wrapped pipes
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**POWER -** Concrete circulating water lines are constantly attacked by external corrosion. Wall loss can be repaired and wrapped to prevent further deterioration and improve structure. In-plant steel circulating lines can be wrapped, providing structural support to handle hoop and axial stress.

- Stop corrosion before it starts - Control internal and external erosion - Rehabilitation of piping system without shutdown
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**MUNICIPAL -** Large steel pipelines can be repaired eliminating further corrosion — even if there is a hole in the pipe. Large concrete joints can also be repaired. The Diamond Wrap Carbon/Epoxy joint is a strong and lasting repair in contrast to cementitious materials frequently used that granulate and loose strength. Large clarifier tanks that cannot be taken out of service can be wrapped to provide additional strength and stop external corrosion and popping of concrete.

- High chemical resistance - Wrap sanitary sewer mains — improvement over cementitious diaper
- Wrap large joints - Control internal and external erosion in clarifier tanks - Long term durability
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