



CUI CP SHIELD



TRIPLE LAYERED CUI PROTECTION

USING

GALVANIC CATHODIC PROTECTION

AND

BARRIER PROTECTION



LONG TERM AND COST EFFECTIVE SOLUTION

CUI CP Shield

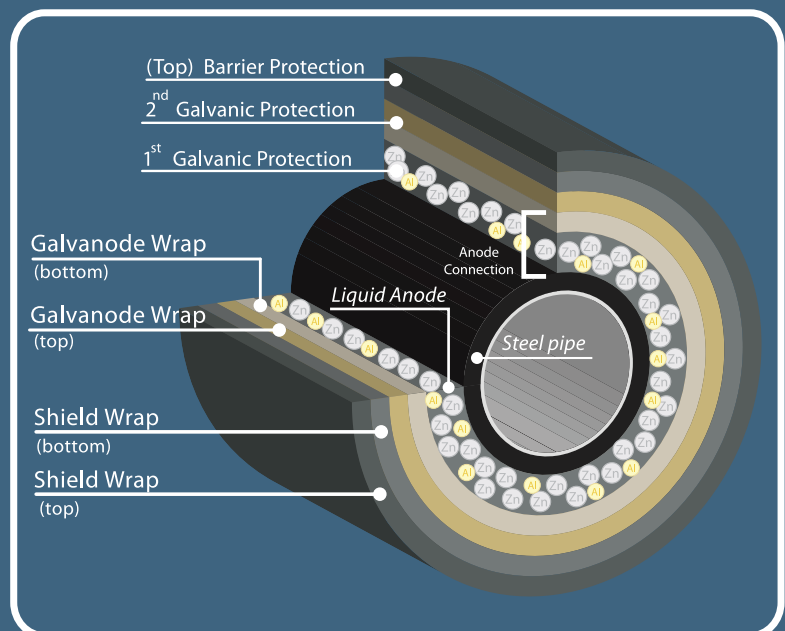
Cost-Effective Solution for CUI

Features and Benefits

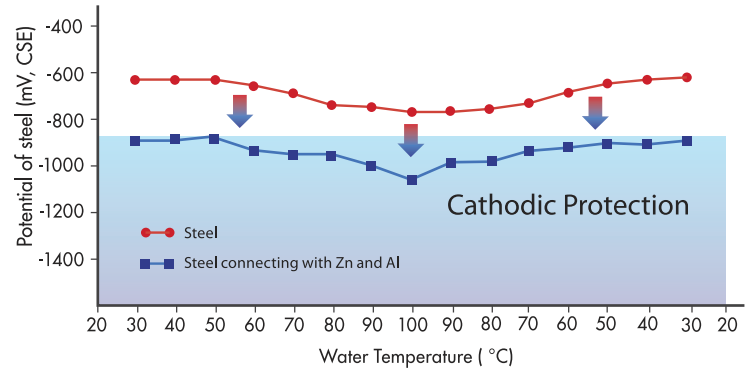
- Triple layered protection by combining two layers of galvanic cathodic protection and one layer of barrier protection
- Service Temperature: -60°C to 300°C
- Protection continues from galvanic system even when shielding is damaged.
- Cost-effective
- Long service life (adjustable by thickness of galvanic anode layers)
- Easy installation
- Minimum steel surface preparation (only wire brush; SP-2 or 3)
- Environmentally friendly
- Low maintenance cost

CUI CP SHIELD A highly cost-effective CUI protection is achieved by combining both galvanic zinc and aluminum anode cathodic protection and corrosion resistance aluminum barrier to steel piping, vessels and equipment under insulation

“Corrosion protection is achieved not only by shielding water from piping but also using any water inside the shield to protect the piping by cathodic protection.”



Polarization of Steel by Both Galvanic Zinc and Aluminum in Cyclic Temperature

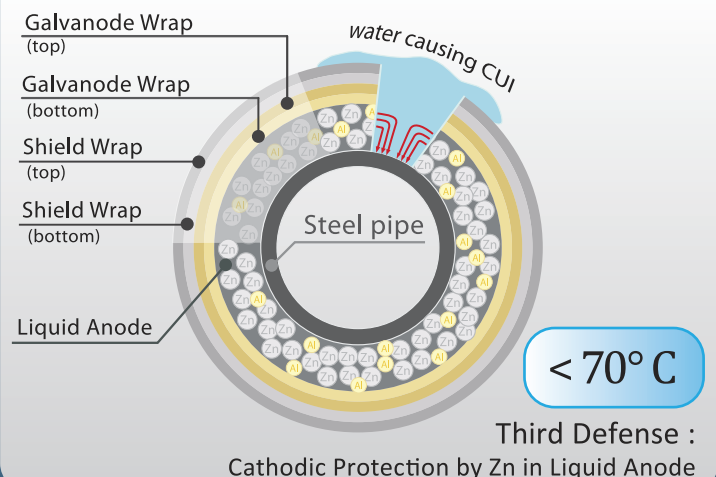
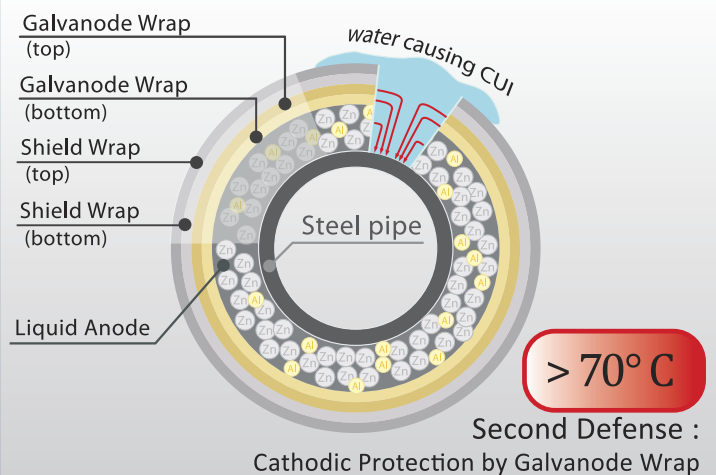
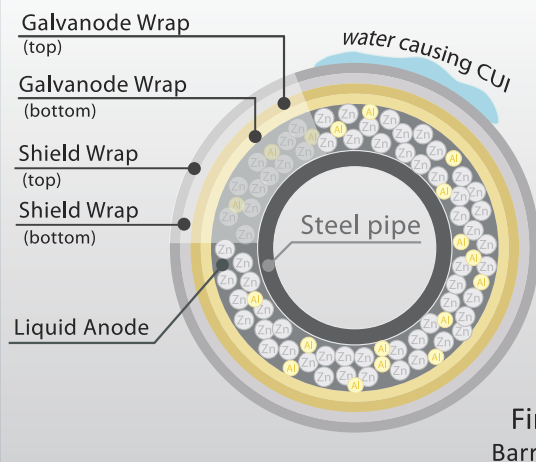


“Liquid Anode” is active in any temperature to provide CP to the exposed steel substrate. Surface preparation of SSPC SP-2 and SP-3 using wire brushes is sufficient for application to provide protection because the CP current flows where water exists.

“Galvanode Wrap” Protects the exposed steel when the shield wrap or barrier protection layer is damaged, or if water penetrates the first protection layer. Galvanode wrap becomes an active anode when exposed to temperatures above 70°C and provides CP to the exposed steel. In addition, the lower negative potential of Galvanode Wrap to Liquid Anode at higher temperatures provides CP to the zinc particles in the Liquid Anode, prolonging the service life.

“Shield Wrap” is made of highly corrosion resistance aluminum and provides the barrier corrosion protection to the Galvanode Wrap and Liquid Anode from the highly corrosive water that is trapped in the insulation.

Corrosion Protection Mechanism



Installation Procedure

Step 1: Surface Preparation

SSPC-SP2 Hand Tool Cleaning

Remove all paint, loose mill scale, loose rust, and other loose detrimental foreign matter by hand chipping, scraping, sanding, and wire brushing.

SSPC-SP3 Power Tool Cleaning

Remove all paint, loose mill scale, loose rust, and other loose detrimental foreign matter by power tool wire brushing, power sanding, and power gridding, power tool chipping and power tool descaling.

Note: Remove of all visible oil, grease by acetone if exists. Wash the surface by fresh water and wipe with clean cloth or paper.



Step 2: Application of Liquid Anode

Mixing Liquid Anode

Follow the instructions for mixing. Stir slowly for 3 minutes before application.

Applying Liquid Anode

Before application, thoroughly stir the liquid anode. Two coats are required for all steel surface. Before the first coat is dry, apply the second coat. The total wet thickness is 100 microns (4 mils). The maximum application temperature of the steel surface is 60° C.



Step 3: Applications of Galvanode and Shield Wrap

GalvanodeWrap

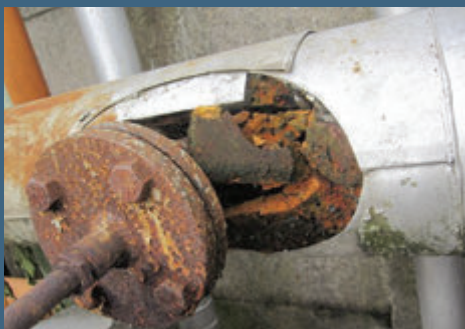
Tightly apply Galvanode Wrap after Liquid Anode is applied. Install the electrical continuity of the Galvanode Wrap to the steel substrate following manufacturer's instructions. Test the electrical continuity between Galvanode Wrap and the piping.

Shield Wrap

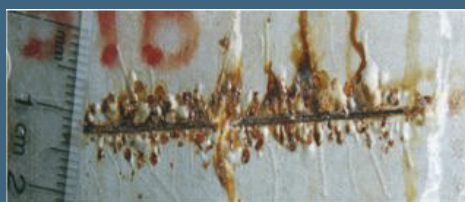
Tightly apply Shield Wrap over Galvanode Wrap. Make sure that there are no openings between the tape seams by rubbing the tape down firmly by hand or rubber rollers. If there are still openings, apply proper sealers following manufacture's instruction.



Damaged Insulation Cladding/Jacket



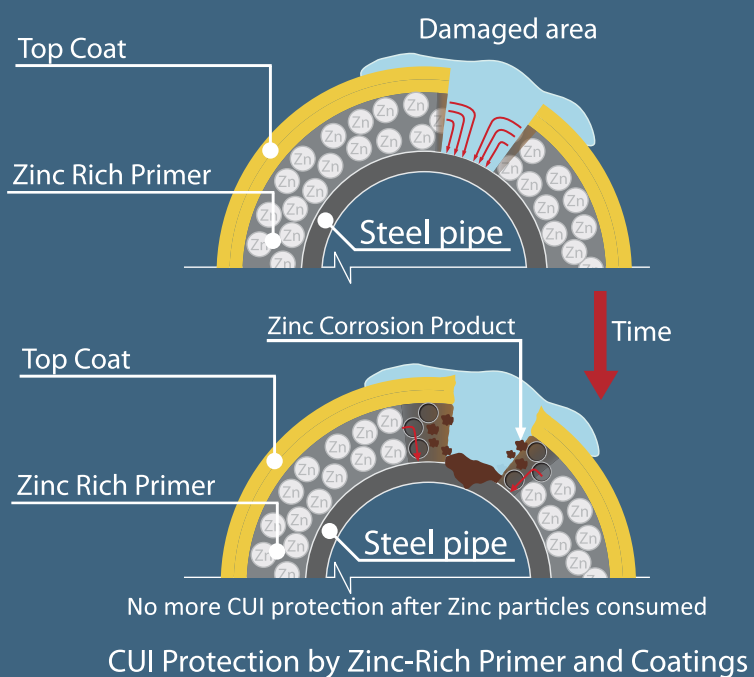
Conventional Coating Problems



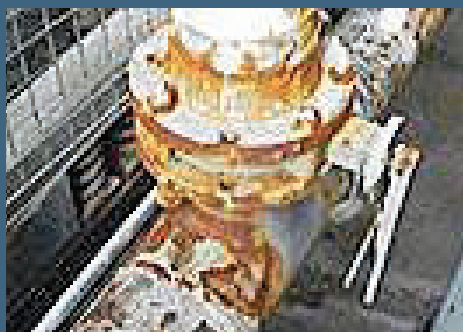
Corrosion at damaged coating area



Corrosion Pits at Coating Holidays



Failure of Coating by High Temperature Water



SPECIFICATION

Liquid Anode :

Liquid Anode ST (< 150° C)

Liquid Anode HT (150° C ~240° C)

Liquid Anode PT (240 ° C~ 300 ° C)

Galvanode Wrap :

Galvanode Tape: T1000 - 50 (straight section)

Galvanode Tape: T1000 - 150 (straight section)

Galvanode Tape: T0500-50 (bends and other shapes)

Shield Wrap :

Shield Wrap 50S (straight section)

Shield Wrap 100S (straight section)

Shield Wrap 50B (bends)

Shield Wrap 100B (bends)

Flex Wrap 50 (complex shapes)

MUI ...your cost-effective solution.



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