



PROCESS
INDUSTRY
PRACTICES

EDITORIAL REVISION
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Coatings

**PIP CTSU1000
Application of Underground Coatings**

PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

This Practice is subject to revision at any time.

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PRINTING HISTORY

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APPENDIX A-Plant Qualifications

APPENDIX B-Shipping, Handling and Storage

APPENDIX C-Inspection Checklist

Data Forms

CTSU1000-D001 – Documentation Requirements Sheet

The following data forms shall be part of this Practice only if indicated on the purchaser's completed Documentation Requirements Sheet.

CTSU1000-D002 – Underground Coatings Selection Criteria Sheet

CTSU1000-D010 – Underground Coatings System Data Sheet - User-Defined

CTSU1000-D011 – Underground Coatings System Data Sheet - Fusion-Bonded Epoxy (FBE) One-Coat System

CTSU1000-D012 – Underground Coatings System Data Sheet – Fusion-Bonded Epoxy (FBE) One-Coat System for High Temperature

CTSU1000-D013 – Underground Coatings System Data Sheet – Fusion-Bonded Epoxy (FBE) One-Coat System with ARO

CTSU1000-D014 – Underground Coatings System Data Sheet - Fusion-Bonded

Epoxy (FBE) One-Coat System with ARO
for High Temperature

CTSU100-D015 – Underground Coatings
System Data Sheet – Three Layer
Polyolefin (MDPE or HDPE)

CTSU1000-D016 – Underground Coatings
System Data Sheet – Three Layer
Polyolefin (PP)

CTSU1000-D017 – Underground Coatings
System Data Sheet – Liquid Epoxy

CTSU1000-D018 – Underground Coatings
System Data Sheet - Liquid Epoxy for
High Temperature

CTSU1000-D019 – Underground Coatings
System Data Sheet - Fusion-Bonded
Epoxy (FBE) One-Coat System for Field
Welds and Components

CTSU1000-D020 – Underground Coatings
System Data Sheet - Heat Shrink Sleeves

CTSU1000-D021 – Underground Coatings
System Data Sheet - Viscoelastic Tape
System

CTSU1000-D022 – Underground Coatings
System Data Sheet - Petrolatum Tape
System

CTSU1000-D023 – Underground Coatings
System Data Sheet - Petrolatum Tape
Wrap System

CTSU1000-F – Daily Inspection Report

1. Scope

This Practice provides minimum requirements for surface preparation and the application and inspection of shop-applied and field-applied protective coatings on pipe, vessels, equipment, fittings, flanges, field joints, valves, and special fabrications intended for underground/buried service.

This Practice does not cover external coatings for moderate or severe environments or internal linings for tanks and vessels.

This Practice does not cover in situ continuous coating of pipelines.

2. References

Applicable parts of the following industry codes and standards shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles will be used where applicable.

Industry Codes & Standards

- American Society for Testing and Materials (ASTM)
 - ASTM D4285 - *Standard Test Method for Indicating Oil or Water in Compressed Air*
 - ASTM D4417 - *Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel*
 - ASTM F21 - *Standard Test Method for Hydrophobic Surface Films by the Atomizer Test*
- American Water Works Association (AWWA)
 - C203 - *Coal-Tar Protective Coatings & Linings for Steel Water Pipelines - Enamel & Tape - Hot Applied*
 - C209 - *Cold-Applied Tape Coating for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines*
 - C210 - *Liquid Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines*
 - C213 - *Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines*
 - C215 - *Extruded Polyolefin Coatings for the Exterior of Steel Water Pipelines*
 - C216 - *Heat-Shrinkable Cross-Linked Polyolefin Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines*
 - C217 - *Petrolatum and Petroleum Wax Tape Coatings for the Exterior of Connections and Fittings for Steel Water Pipelines*
- International Organization For Standardization (ISO)
 - ISO 2178 - *Non-magnetic coatings on magnetic substrates - Measurement of coating thickness - Magnetic method*