


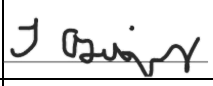


## Coating & Painting Specification

Functional Group	Facilities						
Department	Construction						Total # of Pages: 17
Discipline	Mechanical						Revision No: 1
Document Type	Specification						
Document No.	FAC-CMG-ME-STD-0001-01						
Issued Date	March 14, 2022						
Appendices	A – Definitions						
	B – Abbreviations						
Signatures →							
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Revision	Status	Date	Issued for	Reviewer	Reviewer	Reviewer	Approver

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	Document Number <b>FAC-CMG-ME-STD-0001-01</b>	Date <b>03-14-2022</b>

#### REVISION SUMMARY

<b>Date</b>	<b>Revision</b>	<b>Revision Author</b>	<b>Changes</b>
02/8/2023	1	Dave Mack	Update section 11.2
02/23/2022	0	Frank Raimondi	Changes to incorporate specifics relating to structural steel and piping coating.
01/07/2022	0	Michael Parsons	Review and amalgamate 7G and Arc specs
05/10/2021	0	Dave Mack	Review and amalgamate 7G and Arc specs

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## 1.0 POLICY

To ensure the longevity and safe operation of infrastructure is maintained, through the proper applications and safeguards.

## 2.0 PURPOSE

To identify ARC Resources requirements when designing, preparing, and coating of pressure piping, pressure equipment, pipelines, and all other coated components.

## 3.0 ROLES AND RESPONSIBILITIES

### 3.1 Construction Contractor

To identify ARC Resources requirements when designing, preparing, and coating of pressure piping, pressure equipment, pipelines, and all other coated components.

### 3.2 Construction Contractor Inspector

To identify ARC Resources requirements when designing, preparing, and coating of pressure piping, pressure equipment, pipelines, and all other coated components.

### 3.3 ARC OSS Construction Inspector

The ARC Resources Inspector has the responsibility to ensure, the Construction Contractor applied the coating to industry code and company specifications and standards.

## 4.0 SCOPE

This standard applies to the selection, installation/application, quality assurance, quality control and testing of coatings and linings utilized in ARC Resources facilities and pipelines.

## 5.0 DESIGN

The operating conditions of equipment, environmental and other data will determine applicable coating and liner selections as per **Table 5.3** prior to project kick off. Once the coating or lining system has been selected, the equipment and or piping/pipeline is assessed for design elements and configurations that will facilitate and enable quality application/installation of the coating or lining/liner system.

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**Table 5.3: Fabrication and Design Requirements**

Item	Description
1.0	Welded surface finish shall as a minimum meet Condition A specified in NACE SP0178, for pressure piping and Condition "C" for storage tanks.
2.0	Maximum pipe length after direction change is 500mm on 6" (168.3mm) or larger OD. *Provided all root welds can be accessed for grinding of roots. There shall be no pipe length added after a direction change on piping under 6" OD
3.0	Only one direction change per spool.
4.0	Flat or raised face flanges shall be installed and require a 1/8" (3.2mm) machined radius at the entry bore to remove the sharp 90 degree edge. The use of ring joint flanges for coated piping shall not be allowed without OWNER approval and shall require the use of special sealing gaskets to provide protection at the ring groove. Where RTJ flanges are used on internally coated spools, the ring groove is to be blasted and coated.
5.0	All root beads applied, shall be ground flush and smooth, taking care not to reduce the wall thickness of the piping or fitting. Weld spatter, slag, burrs, sharp edges, high welds, rough welds, etc. shall be repaired during fabrication. Effort shall be made to use MIG process for root application.
6.0	Weld-o-lets shall not be installed.
7.0	If a proprietary coating system is to be applied, the piping design shall reflect the limitations of the coating system itself, as well as the contractor's mechanical limitations.
8.0	Threaded connections shall not be used with internal coated piping systems, except when tapped in a blind flange for thermo-well connections or is an uncoated branch run from a bleed ring or tapped flange.
9.0	The minimum welded pipe size to be internally coated shall be 2" (60.3 mm).
10.0	The maximum overall (inclusive of all fittings) length for all pipe sizes shall be 6250 mm. *Unless pre-approved by selected coating vendor.
11.0	Branch connections in 70.3 mm (2 1/2" nom.) and larger pipe may be made with: <ul style="list-style-type: none"> <li>• Full size tees or laterals</li> <li>• Reducing tees or laterals</li> <li>• Bleed rings (maximum branch size 48.3 mm (1 1/2" nom.)</li> </ul>
12.0	When an eccentric, concentric reducer or reducing elbow provides an increase or decrease in line size, a break flange shall be located directly after the fitting on the largest nominal size of the fitting.
13.0	Barred tees are preferred to have solid <u>round hot rolled bars</u> of sufficient cross-sectional area to withstand the anticipated force of projectile tools (pigs, squeegees, etc.).
14.0	Flat barred tees shall have all sharp edges (including pig bars) removed and shall have a minimum of 3.2 mm (1/8") radius.
15.0	Barred tees shall have break flanges located adjacent to the barred branch and one open branch of the tee. A pup may be installed on the other open branch of the tee.
16.0	Weld caps shall not be used. Lines may be terminated using a flange and blind flange set.
17.0	Care shall be taken to ensure that the normal flexibility of extended lengths of pipe does not exceed the flexibility of the coating system.

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18.0	Tank and vessel internal attachments should be made separately and be removable if possible (Vortex breakers, suction, and down comers, baffles, etc.).
19.0	Nylon washers shall be used on flanges coated externally with products from Tables 10.2 or 10.3.
20.0	Line-backer™, Trojan™ and Pikotek™ gaskets shall be the preferred sealing system to be specified for internally coated components. Stainless Steel Ring Type Gaskets may be used with Ring Type Flanges.
21.0	All fabrication shall be in accordance with applicable codes and standards.
22.0	All internal attachments (pig bars, etc.) shall be seal welded around the full perimeter of the attachment area.
23.0	All external attachments (supports, etc.) shall be welded on the pipe prior to any coating applications.
24.0	All sharp edges shall have a minimum of 3.2 mm (1/8") radius.
25.0	Weld root passes which do not conform with the coatability requirements of this supplement, shall be repaired, or replaced at the Contractor's expense. In cases of conflict, ARC Resources shall make a final and binding decision.
26.0	All blind flanges, tapped flanges, and spec blinds shall be made of carbon steel and internally coated on lines that require internal coating. All bleed rings, threaded nipples, plugs, and root ball valves shall be made of 316SS.
27.0	Flanges must be torqued in accordance with gasket manufacturer's recommended practice with a calibrated torque wrench. Impact guns must not be used to torque flanges.

## 6.0 INSPECTION

### Minimum Required Inspection Hold Points:

- 6.1 All piping will be successfully hydrotested PRIOR to coating applications.
- 6.2 The degree of inspection shall be discussed as part of the project kick off meeting.
- 6.3 The Inspector (a qualified/competent representative of ARC Resources) shall examine the work after completion or at set intervals, and all relevant QC documentation to be satisfied that the requirements have been met.
- 6.4 All repairs found during any inspection shall be repaired and noted on the vendors QC documentation.
- 6.5 It is expected that all coating contractors shall have their own QC done prior to final release of all piping, equipment, etc.
- 6.6 The applicator shall give ARC Resources reasonable notice of the coating schedule. This shall be discussed at the kick-off meeting.
- 6.7 The ARC inspector shall be given reasonable access to the material to be coated during each stage of the coating application.
- 6.8 Single Girth Weld Coating Defect:

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In any single girth weld, total allowable surface area of defects shall be < 33% which includes, but not limited to, DFT repairs, holidays, and or visual repairs (debris, runs, sags, etc.)

>33% Girth weld shall be re-blasted to bare substrate as per specifications and re-coated.

## 7.0 INSPECTION EQUIPMENT

- 7.1 Surface temperature pyrometers shall have current calibration certifications and be contact measurement devices.
- 7.2 Holiday detectors for pipelines shall be verified and tested once every working shift and not less than every 12 hours against a voltmeter that has been calibrated to recognized standards within the previous 6 months as per CSA Z245.30. Contractor shall verify the calibration at the start of the day or before holiday detection begins. Calibration times and results shall be recorded and provided to the Owner upon request. If the holiday detector is defective, it shall be replaced immediately.
- 7.3 All equipment including but not limited to; DFT gauges, holiday detectors, etc. shall be calibrated once within a 12-month period.

## 8.0 SURFACE PREPARATION

- 8.1 Prior to abrasive blasting, all surfaces shall be clean, and free of contaminants as per SSPC-SP-1.
- 8.2 Chloride testing shall be completed on the to be coated by the coating contractor; a result of <2 ppm, or manufacturer's recommendations, whichever is more stringent shall be achieved.
- 8.3 Abrasive blasting shall not be completed if the relative humidity is above 85%, and/or the separation between the substrate temperature and the dew point is less than 3°C.
- 8.4 All blasted surfaces shall be primed prior to the formation of flash rusting on the substrate.
- 8.5 All internal immersion services require an SSPC-SP-5 White Metal Blast prior to coating application.
- 8.6 Manufacturer's PDS for the Coating / Liner to be used, shall be followed in cases other than internal immersion services as listed in section 11.
- 8.7 Recycled medium shall be acceptable for use pending the vendor has a procedure for cleaning recycler system should any contamination occur. Any abrasive blasting that was completed with contaminated abrasive, the items blasted shall be washed in accordance with SSPC-SP-1 and re-blasted to the required specification prior to acceptance. This shall be carried out at the cost of the coating contractor.
- 8.8 All surfaces to be coated shall be cleaned via compressed air or vacuum, and dust free prior to coating application.

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- 8.9 Surface profile shall be measured as per NACE SP0287 and be within manufacturer's recommended range.
- 8.10 A blotter test must be completed prior to each shift and available for review upon request.

## 9.0 COATING / LINER APPLICATION

- 9.1 All coatings shall be applied in accordance with the coating Manufacturer's application guidelines and product data sheets.
- 9.2 Coating/ Liner materials used for all ARC projects shall be previously unopened, contain batch numbers, product identifiers, and expiry dates.
- 9.3 All applications shall be completed with environmental conditions ranging within manufacturer's recommendations with adequate ventilation and heating for a quality result.
- 9.4 During and post coating application, all ambient conditions must be maintained during the drying and curing process of the applied Coating / Liner.
- 9.5 All coatings requiring curing after final application to reach maximum resistance properties shall be completed as per product requirements and documented by the vendor to verify full cure.
- 9.6 Strip coating prior to product application is required in all locations that are difficult to spray, and on welds.
- 9.7 Any coating prior to product application is required in all locations that are difficult to spray, and on welds.
- 9.8 All flat and raised flange faces shall receive full coating thickness in accordance with manufacturer's specifications, be smooth and free of any defects to allow a proper seal with the required gaskets for the project.
- 9.9 Coating / Liner coupons shall be provided to ARC upon request.
- 9.10 Coating material shall be stored as per manufacturer's recommendations and shall not be frozen.
- 9.11 All Coating / Liners shall be applied uniform, smooth, and free of any runs, sags, debris, or visual defects.



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## 10.0 MATERIAL SELECTION TABLES

**Table 10.1 Pressure Vessel and Small Diameter Storage Tanks (less than or equal to 5m diameter)**

Operating Parameters	Coating Material	Manufacturer Supplier
Operating Temperature <90°C	Enviroline 2405	International Paints
	Novacoat 3300	HDIM Protective Coatings
	Tnemec 322	HDIM Protective Coatings
	Devmat 100	International Paint
Operating Temperature 90°C – 120°C	Enviroline 2405	International Paint
	Novacoat 3300	HDIM Protective Coatings

**NOTE:**

1. In field repair cases, when existing coating inside vessel is not listed in the above table, the existing coating shall be used for the repair process.
2. If deviations are required approval from AI and PM is required.

**Table 10.2 Above Ground Piping**

Application	Internal Coating	Operating Parameters	Coating Material	Manufacturer Supplier
Insulated	Internally Coated	Operating Temperature Up to 120°C	Devoe 236	International Paint
			Amercoat 90HS	PPG Canada
			Ceramaxx	Endura Manufacturing
			Hempadur Quattro 17820	Hempel
	Not Internally Coated	Operating Temperature Up to 120°C	Cloverdale 71309 Primer	Cloverdale
			Devthane 349	International Paint
			Hempathane 55610	Hempel
			Endura D2M	Endura Manufacturing

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Application	Internal Coating	Operating Parameters	Coating Material	Manufacturer Supplier
Uninsulated	Internally Coated	Operating Temperature Up to 120°C	Devoe 236	International Paint
			Amercoat 90HS	PPG Canada
			Ceramaxx	Endura Manufacturing
			Hempadur Quattro 17820	Hempel
	Not Internally Coated	Operating Temperature Up to 120°C	Enamel System:	Cloverdale
			Cloverdale 71309 Primer	
			Cloverdale 74 series Topcoat	
			Direct to Metal Urethane System:	
			Devthane 349	International Paint
			Hempathane 55610	Hempel
			Endura D2M	Enduro Paint

**NOTE:**

1. All immersion grade primers applied to insulated piping shall be visually free of voids, defects, and debris prior to acceptance.
2. Grey shall be the preferred finish colour of the primers.
3. **External Above Ground Application**
  - a. All above ground uninsulated piping shall be prepared to SSPC – SP3 standard, primed and painted with 100% coverage including benchmarks and shall be uniformly applied.
  - b. All externally painted, uninsulated piping, shall be primed with an enamel primer and top coated with an enamel topcoat (or superior coating) and colour matched to F34 warm grey.

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**Table 10.3 Storage Tanks**

<b>Operating Parameters</b>	<b>Coating Material</b>	<b>Manufacturer Supplier</b>
Operating Temperature <90°C pH 4-12	Devmat 100 Devchem 253 As a holding primer (If required)	International Paint
	Novaguard 890	PPG Canada
	Enviroline 2405	International Paint
	Tnemec 322 Series	HDIM Protective Coatings
Operating Temperature 90°C - 120°C pH 4 - 12	Novacoat SC-3300 Tnemec 322 Series	HDIM Protective Coatings
	Enviroline 2405	International Paint
	Enviroline 2900 (Up to 37% Hydrochloric Acid) Enviroline 225 (Up to 98% Sulfuric Acid) *Must be force cured	International Paint
Operating Temperature <90°C Improved acid resistance pH: <4	Novacoat SC-3300 (Up to 37% Hydrochloric Acid) Novacoat SC 4500 (Up to 98% Sulfuric Acid) *Must be force cured	HDIM Protective Coatings
Grout Materials	Devmat 142 HDIM 763 (Corcoat) Amercoat 114A	International Paint HDIM Protective Coatings PPG Canada

**NOTE:**

1. In field repair cases, when existing coating inside vessel is not listed in the above table, the existing coating shall be used for the repair process.
2. If deviations are required approval from AI and PM is required.

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**Table 10.4 Internal Coatings**

Operating Parameters	Coating Material	Manufacturer Supplier
Operating Temperatures <90°C	Devchem 256	International Paint
	Scotchkote 134	3M
	Tnemec 61 Series	HDIM Protective Coatings
Operating Temperatures 90°C - 120°C	Devchem 256	International Paint
	Phenguard 965	PPG Canada
	Scotchkote 134	3M
	Highland 74 Series	HDIM Protective Coatings
High Abrasion Service	Highland 74 Series AR	HDIM Protective Coatings
	Devchem 256 AR	International Paint

**NOTE:**

1. Bridles, and pig barrels will not be internally coated unless specifically requested by project engineering.

**Table 10.5 Structural Steel**

Painting of structural steel shall be reviewed on a project-by-project basis. Painting of steel is not required to maintain its integrity in the regions that ARC operates and is mainly for aesthetic purposes. Review of location, cost, and integration with existing installations should be taken into consideration when determining its need.

Operating Parameters	Weld preparation	Coating Material	Manufacturer Supplier
No final Paint is required	None required	None Required	Not Applicable
Final Paint Required	Paint Manufactures procedure	Devthane 349	International Paint
		Hempathane 55610	Hempel
		Endura D2M	Endura Paint

**NOTE:**

1. Equivalent products may be proposed in lieu of these products but are subject to approval prior to application

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## 11.0 PIPELINE COATINGS

- 11.1 The manufacturer's instruction, technical data sheets and the MQAP are to be followed for all coating application work. If multiple versions are available for the same product, the MQAP version current at time when the project was awarded.
- 11.2 All personnel involved in abrasive blasting and pipeline coating works shall be trained and certified for the products they are working with. Coating Logs shall be kept up to date and signed off periodically on each applicator.
- 11.3 If liquid epoxy coating is to be applied to the girth weld and pre-heating the weld joint is required prior to application, all areas to be coated shall be abrasive blasted after the areas have been "sweat out".
- 11.4 During pre-heating, a maximum temperature 200°C shall not be exceeded.
- 11.5 All products listed in tables 12.1 to 12.3 shall be utilized in accordance with CSA Z245.30 "*Field applied external coatings for steel pipeline systems*". (The latest revision to be referenced)
- 11.6 Areas to have shrink sleeves installed shall be free of dirt, dust, grease, moisture, and other contaminants. Surface preparation shall be in accordance with the manufacturer's specification.
- 11.7 The shrink sleeve shall be centered over the girth weld and manufacturer's instructions followed for the application. Installed sleeves shall be free of burns, punctures, dimples, air bubbles and holidays.
- 11.8 Sleeves shall be adequately cooled prior to subjecting to holiday detection and prior to lowering in and backfilling.
- 11.9 For piping that is to be coated in field environment and found to be sweating, dehumidification processes shall be required prior to the abrasive blasting and coating application.
- 11.10 CSA Z245.30 and manufacturer's MQAP's shall be followed for all pipeline coating application unless otherwise specified.
- 11.11 Coated surfaces shall be checked using a suitable electronic holiday detector prior to installing weights, lowering in or in the case of tie-ins, just prior to backfill. The entire field coated surface shall be inspected with a holiday detector having a rolling spring electrode. The electrode shall not remain stationary while it is energized. For irregular surfaces or where the rolling spring electrode lift off the pipe – a brass bristle electrode attachment shall be used. When inspecting pipe, the rolling spring electrode shall be used with enough tension to ensure 100% contact with the pipe perimeter and travel at a rate of 0.75m per second. Electrode shall be clean of mud, rust, mastic, and dirt. Pipe shall be free of mud, tape, frost, and moisture.

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- 11.12 The voltages to be used for holiday detection of plant applied extruded polyethylene and heat shrink materials shall be:
- YJ2K or Yellow Jacket (YJ)Maximum Inspection Voltage: 10 V/  $\mu\text{m}$  or 250V/mil (To a maximum of 15000V) Recommended Detector: SPY Model 785 / 790 (or equal) Fusion Bond Epoxy (FBE), Dual-Layer, Abrasion Resistant Overcoat (ARO)Maximum inspection voltage: 5V/  $\mu\text{m}$  or 125 V/mil (To a maximum of 5000V)
  - Example: 14 mil coating thickness:  $14 \times 125 = 1,750$  Volts
  - Recommended maximum for frost and/or wet conditions: 100 Volts per mil of coating thickness.
  - Example: 14 mil coating thickness (wet):  $14 \times 100 = 1,400$  Volts
  - Recommended Detector: SPY Model 780 / 785 (or equal) High Performance Powder Coating (HPPC)Maximum Inspection Voltage: 10 V/ $\mu\text{m}$  or 250V/mil (To a maximum of 15000V)
  - Recommended Detector: SPY Model 785 / 790 (or equal) \*\*Voltage shall not exceed 15,000v on thicker coatings.
- 11.13 One person on the coating crew in a supervisory/management role shall be a minimum of NACE CIP Level 1 certified.
- 11.14 Proper grounding techniques for the use of the holiday detector shall be employed. If it has been determined that incorrect grounding was used on a portion of pipeline previously inspected – the Contractor shall re-inspect that portion at its expense.
- 11.15 Adhesion testing (Peel tests) shall be performed at a frequency of once a day or 1 in every 50 sleeves applied per applicator. A peel test consists of one test on the substrate (cutback area) and one on the existing coating (overlap area). Peel tests shall be executed with a substrate and coating temperature range of 20°C +/- 3°C.
- 11.16 Acceptance criteria for sleeves shall be in accordance with CSA Z245.30.
- 11.17 If a test fails either on the overlap or the bare substrate or both, the sleeve shall be removed and replaced with a new one.
- 11.18 Where a sleeve has failed and requires removal, peel tests shall be performed on the sleeve completed prior to the failed sleeve until a sleeve that passes both peel tests is reached.
- 11.19 Repaired areas shall be re-inspected with holiday detection equipment when the repair is adequately cured and cooled.
- 11.20 Any damage to existing plant applied coatings during preheating or from welding shall be removed prior to sleeve or girth weld coating application.
- 11.21 All below ground flanges shall be protected using Denso paste, profiling mastic (if required), and LT tape and applied as per MQAP. All personnel shall be trained and hold valid certifications for material to be applied. Mastic shall be used to fill in all voids and provide a slope off sharp angles to make installing the tape more user friendly.

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- 11.22 Coating repairs on Drag sections shall consist of either CRPO patches with epoxy on all edges or TBK Sleeves cut accordingly with epoxy on all edges. No melt stick repairs shall be used on any piping which will be installed in a drag section.
- 11.23 Pipe which consists of melt stick repairs from factory and are installed in a drag section (HDD) must be removed and repaired as per this specification.
- 11.24 Any above ground piping which consists of shop applied internal coatings shall also utilize shop applied external epoxy coatings.
- 11.25 Any risers using shrink sleeves for external coating will be shingled (bottom to top). Sleeves are to be shrunk at a 10 & 2 position on the top side of the riser to alleviate axial load on the sleeve overlap due to pressure once backfill is complete.

## 12.0 GIRTH WELD COATING TABLES

**Table 12.1 Brush Applied Coating up to 90 ° C**

Operating Parameters	Number of Coats	Coating Material <sup>1</sup>	CSA system	MFG MQAP
Operating Temperatures <90°C	1 – 2	SPC - 2888 RG	FC 1 / FC 3	SP - 2888 Rev 1
	1 – 2	Denso 7200	FC 1 / FC 3	Denso Rev 1

**Table 12.2 Spray Applied Coating up to 90 ° C**

Operating Parameters	Number of Coats	Coating Material <sup>1</sup>	CSA System	MFG MQAP
Operating Temperatures <90°C	1 – 2	SPC - 2888 RS	FC1 / FC3	SP - 2888 Rev 1
	1 – 2	Denso 7200	FC1 / FC3	Denso Rev 1

**Table 12.3 Spray/Brush Applied up to 130 ° C**

Operating Parameters	Number of Coats	Coating Material <sup>1</sup>	CSA System	MFG MQAP

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Operating Temperatures up to 130°C	1 – 2	SPC - 8888	FC1, FC2, FC3	SP 8888 Rev O
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## 13.0 TURNOVER DOCUMENTATION REQUIREMENTS

- 13.1 For turnover documentation minimum requirements please see “Quality Document Control (FAC-CMG-TR-PRC-0001-01)”.
- 13.2 Records shall be maintained of all required examinations and tests as the work progresses. The records shall be available for review by the inspector when requested and be a part of the final turnover documentation package.
- 13.3 All quality inspection documentation prepared throughout the project shall be compiled in a digital format and be presented to the ARC team and the mechanical contractor’s quality representative assigned to the project.
  - 13.3.1 All digital submittals shall be in PDF format.
  - 13.3.2 All documents must be high resolution.
  - 13.3.3 All documentation shall be submitted to the parties required no later than 21 days after final inspection from the ARC inspector.

## APPENDIX A – DEFINITIONS

**Coating** - is a material (normally in liquid form) applied to the external surface of a tank, vessel, pipe, pipeline or other element of a process or pipeline system.

**Contractor** - is the vendor(s) that is responsible for the coating or lining project. Where coating, lining or liners are subcontracted, the primary contractor to ARC retains the primary responsibility for the quality and compliance of the subcontracted work unless otherwise agreed to in the ARC contract.

**Immersion** - service may apply to internal or external surfaces of tanks, vessels, pipe, pipelines, or other elements that are periodically or continuously exposed to a corrosive atmosphere, normally a liquid.

**Installation** - is the act of installing an item, part, or component, normally in a solid / mechanical state – such as a liner.

**Liner** - is a material (normally in a solid form) installed on the inside of a tank, vessel, pipe, pipeline or other element of a process system or pipeline system.



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**Lining** - is a material (normally in liquid form) applied to the internal surface of a tank, vessel, pipe, pipeline or other element of a process or pipeline system.

**Quality** - is the degree to which a product (in this case the coating, lining or liner) meets the requirements of the intended service, including fitness for purpose, freedom of defects, compliance with regulatory, environmental, safety and other requirements, completeness of documentation, workmanship, timeliness (meeting schedule) etc.

**Quality Assurance (QA)** - normally applies to the activities and actions of the owner (ARC) to ensure processes and measures are in place and work is overseen and monitored to a degree that ensures the quality of the finished coatings, linings, and liners.

**Quality Control (QC)** - normally applies to the activities of the contractor (applicator or installer) of the coating, lining or liner to control, examine and test the work to a degree that ensures the quality of the finished coating, lining or liner.

## APPENDIX B – ABBREVIATIONS

<b>Abbreviation</b>	<b>Definition</b>
ABSA	Alberta Boilers Safety Association
CCEP	Contractor Construction Execution Plan
CMT	Construction Management Team
CWP	Construction Work Package
CSU	Commissioning and Start-up
HSE	Health, Safety and Environmental
EWP	Engineering Work Package
ITP	Inspection and Test Plan
JHA	Job Hazard Assessment
MC	Mechanical Completion
MOC	Management Of Change
MTO	Material Take-Off
MTR	Material Test Report
N/A	Not Applicable
QA	Quality Assurance
RFI	Request for Information
SOW	Scope of Work
ARC	Arc Resources Ltd.