|  |  |
| --- | --- |
| **Primary Contact** |  |
| Name: |  | |
| Title: |  | |
| Telephone: |  | |
| Email: |  | |

|  |  |
| --- | --- |
| **Management** |  |
| QC Manager: |  | |
| Plant Manager: |  | |

**Section 1: Inspection Personnel**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Identification of the personnel approved to run quality control inspections at the plant | | | | | | |
| **Certified Weld Inspector (CWI):** Holds a CWI certificate for weld inspection.  **Coil/Sheet Inspection:** Evaluation of coated coils (thickness, origin, size, etc.) upon receipt.  **Production Inspection:** Line checks and inspections performed during production which may include workmanship, profile geometry, coatings, pipe length, pipe diameter, lockseams, welded seams, etc. | | | | | |  |
|  | Name | | CWI Certified | Coil/Sheet Inspection | Product Inspection |  |
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|  | | |  |  |  | |
| **Comments:** | | **None** | | | | |

**Section 2: Corrugated Pipe Identification Markings**

*Insert a picture(s) and/or diagram(s) of the plant’s unique pipe identification markings.*

**Section 3: Size and Type of Pipe Produced:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **A) Indicate all applicable pipe Coating Type used/produced at this location:** | | | | |
| Key: **M 36** = Metallic-Coated **M 190** = Bituminous-Coated **M 196** = Aluminum **M 245** = Polymer Precoated | | | | |
| **Coating Type**  **(ref. Table 1)** | In-House | Out Sourced | Not Furnished | |
| **Metallic - M 36** | | | | |
| **Zinc** |  |  |  | |
| **Aluminum-coated Type 1** |  |  |  | |
| **Aluminum-coated Type 2** |  |  |  | |
| **55 Al-Zn alloy** |  |  |  | |
| **Zn-5 Al-MM alloy – Class A** |  |  |  | |
| **Zn-5 Al-MM alloy – Class B** |  |  |  | |
| **Bituminous - M 190** | | | | |
| **Coating Type**  **(ref. Table 1)** | In-House | Out Sourced | Not Furnished | |
| **Type A** |  |  |  | |
| **Type B** |  |  |  | |
| **Type C** |  |  |  | |
| **Type D** |  |  |  | |
| **Comments:** | **None** | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **B) Indicate all applicable pipe Types (by specification) used/ produced at this location:** | | | |
| Key: **M 36** = Metallic-Coated **M 196** = Aluminum **M 245** = Polymer Precoated | | | |
|  | **AASHTO Specification** | | |
| **Pipe Type**  **(ref. Table 1)** | **M 36** | **M 196** | **M 245** |
| **Type I** |  |  |  |
| **Type IA** |  |  |  |
| **Type IR** |  |  |  |
| **Type II** |  |  |  |
| **Type IIA** |  |  |  |
| **Type IIR** |  |  |  |
| **Type III** |  |  |  |
| **Type IIIA** |  |  |  |
| **Comments:** | **None** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **C) Indicate all applicable pipe Diameters (by specification) produced at this location:** | | | | |
| Key: **M 36** = Metallic-Coated **M 190** = Bituminous-Coated **M 196** = Aluminum **M 245** = Polymer Precoated | | | | |
| **Pipe Diameter** | **AASHTO Specification** | | | |
| inches [mm] | M 36 | M 190 | M 196 | M 245 |
| **4 [100]** |  |  |  |  |
| **6 [150]** |  |  |  |  |
| **8 [200]** |  |  |  |  |
| **10 [250]** |  |  |  |  |
| **12 [300]** |  |  |  |  |
| **15 [375]** |  |  |  |  |
| **18 [450]** |  |  |  |  |
| **21 [525]** |  |  |  |  |
| **24 [600]** |  |  |  |  |
| **27 [675]** |  |  |  |  |
| **30 [750]** |  |  |  |  |
| **33 [825]** |  |  |  |  |
| **36 [900]** |  |  |  |  |
| **42 [1050]** |  |  |  |  |
| **48 [1200]** |  |  |  |  |
| **54 [1350]** |  |  |  |  |
| **60 [1500]** |  |  |  |  |
| **64 [1600]** |  |  |  |  |
| **66 [1650]** |  |  |  |  |
| **72 [1800]** |  |  |  |  |
| **78 [1950]** |  |  |  |  |
| **84 [2100]** |  |  |  |  |
| **90 [2250]** |  |  |  |  |
| **96 [2400]** |  |  |  |  |
| **102 [2550]** |  |  |  |  |
| **108 [2700]** |  |  |  |  |
| **114 [2850]** |  |  |  |  |
| **120 [3000]** |  |  |  |  |
| **126 [3150]** |  |  |  |  |
| **132 [3300]** |  |  |  |  |
| **138 [3450]** |  |  |  |  |
| **144 [3600]** |  |  |  |  |
| **Comments:** | **None** | | | |

|  |  |
| --- | --- |
| **D) Indicate all applicable pipe Corrugations and Perforations used/produced at this location:** | |
| **Corrugations (Type)** | |
| **Annular** |  |
| **Helical** |  |
| **Corrugations (Size)** | |
| **1 ½ by ¼ in Corrugation** |  |
| **2 2/3 by ½ in. Corrugation** |  |
| **3 by 1 in. Corrugation** |  |
| **5 by 1 in. Corrugation** |  |
| **¾ by ¾ by 7 ½ in. Corrugation** |  |
| **¾ by 1 by 11 ½ in. Corrugation** |  |
| **¾ by 1 by 8 ½ in. Corrugation** |  |
| **Perforations** | |
| **Class 1** |  |
| **Class 2** |  |
| **Class 3** |  |
| **Class 4** |  |
| **Comments:** | **None** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **E) Indicate all applicable pipe Joining Systems used/produced at this location:** | | | | | |
| **Standard Joints** | | **Standard System** | | **Gasketed Systems** | |
| **Corrugated Bands** | |  | |  | |
| **Partially Corrugated Bands** | |  | |  | |
| **Bands with Projections** | |  | |  | |
| **Channel Bands** | |  | |  | |
| **Flat Bands** | |  | |  | |
| **Special Joints** | | **Standard System** | | **Gasketed Systems** | |
| **Sleeve Couplers** | |  | |  | |
| **Bell and Spigot** | |  | |  | |
| **Special Design** | |  | |  | |
| **Comments:** | | **None** | | | |
| **F) Indicate all applicable pipe Hardware furnished by this location:** | | | | | | |
| **Hardware Item** | **Specification** | | **Source** | | **Documentation** | |
| **Steel Pipe** | | | | | | |
| Coupling Bands | **Same as sheet** | |  | |  | |
| Rivets | **Same base metal as sheet** | |  | |  | |
| Bolts for pipe | **F568M, Class 8.8** | |  | |  | |
| Nuts for pipe | **A563M, Class 12** | |  | |  | |
| Bolts for bands | **F568M, Class 4.6** | |  | |  | |
| Nuts for bands | **A563M, Class 5** | |  | |  | |
| Gaskets: | **D1056 or C443** | |  | |  | |
| expanded rubber | **D1056 - “RE”** | |  | |  | |
| O-rings | **C443** | |  | |  | |
| **Aluminum Pipe** | | | | | | |
| Coupling Bands | **M 197** | |  | |  | |
| Rivets | **B316/B316M for alloy 6053-T4** | |  | |  | |
| Bolts for pipe | **F568M, Class 8.8** | |  | |  | |
| Nuts for pipe | **A563M, Class 12** | |  | |  | |
| Bolts for bands | **F568M, Class 4.6** | |  | |  | |
| Nuts for bands | **A563M, Class 5** | |  | |  | |
| Gaskets: | **D1056 or C443** | |  | |  | |
| expanded rubber | **D1056 - “RE”** | |  | |  | |
| O-rings | **C990** | |  | |  | |
| **Polymer- Precoated Pipe** | | | | | | |
| Coupling Bands | **M 246** | |  | |  | |
| Rivets | **Same base metal as sheet** | |  | |  | |
| Bolts for pipe | **F568M, Class 8.8** | |  | |  | |
| Nuts for pipe | **A563M, Class 12** | |  | |  | |
| Bolts for bands | **F568M, Class 4.6** | |  | |  | |
| Nuts for bands | **A563M, Class 5** | |  | |  | |
| Gaskets: | **D1056 or C443** | |  | |  | |
| expanded rubber | **D1056 - “RE”** | |  | |  | |
| O-rings | **C990** | |  | |  | |
| **Comments:** | **None** | | | | | |

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| **G) Indicate all applicable pipe Coatings furnished by this location:** | | |
| Please indicate below the coatings provided by your facility. For “Source” please indicate if the component is coated In-House, Outsourced, or Not Applicable (N/A). | | |
| **Galvanizing** | **Source** | **Identification Used to Track Coated Item** |
| Coiled Steel |  |  |
| Sheet Steel |  |  |
| Coupling Bands |  |  |
| Bolts and Nuts |  |  |
| **Bituminous** | **Source** | **Identification Used to Track Coated Item** |
| Pipe |  |  |
| Coupling Bands |  |  |
| **Polymer** | **Source** | **Identification Used to Track Coated Item** |
| Coiled Steel |  |  |
| Sheet Steel |  |  |
| Coupling Bands |  |  |
| **Comments:** | **None** | |

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| --- | --- | --- |
| **Table 1 – Definitions for Types of Coatings and Pipe** | | |
|  | | |
| **Types of Metallic Coating:** | | * **zinc** — zinc-coated sheet conforming to M 218 * **aluminum-coated Type 2** — aluminum-coated sheet conforming to M 274 * **aluminum-coated Type 1** —aluminum-coated sheet conforming to ASTM A929/A929M * **55 Al-Zn alloy** — 55 percent aluminum-zinc alloy-coated sheet conforming to M 289 * **Zn-5 Al-MM alloy** — zinc-5 percent aluminum-mischmetal alloy-coated sheet conforming to ASTM A929/A929M of either:   + **Class** **A** — Minimized coating structure {Base metal nominal thickness—2.67 mm (0.105 in.)}, or   + **Class B** — Regular coating structure (Base metal nominal thickness—3.43 mm (0.135 in.)} |
| **Types of Bituminous Coating:** | | * **Type A** — uniformly coated, inside and outside, to a minimum thickness of 1.3 mm measured on the crest of the corrugations or, in the case of Type 1A pipe, over the inner surface of the pipe. This coating is also used for Type 1A pipe. * **Type B**— uniformly coated for approximately one-half the circumference of the pipe (bottom of the pipe installed), inside and outside to a minimum thickness of 1.3 mm and, in addition, the bituminous material shall be applied in such a manner that one or more smooth pavements will be formed in the invert (inside bottom of the pipe when installed), filling the corrugations for at least 25 percent of the circumference of a pipe and 40 percent of the circumference of a pipe-arch. The pavement shall have a minimum thickness of 3.2 mm above the crest of the corrugations, except where the upper edges intersect the corrugations. * **Type C** — fully coated as required for Type A and, in addition, a smooth pavement shall be provided as required for Type B. * **Type D** — fully coated as required for Type A and, in addition, a smooth lining of asphalt shall be centrifugally spun inside the pipe. The lining shall have a minimum thickness of 3.2 mm above the crest of the corrugations. |
| **Types of Pipe:** | | * **Type I** — full circular cross section, with a single thickness of corrugated sheet, fabricated with annular (circumferential) or helical corrugations * **Type IA** — full circular cross section, with an outer shell of corrugated sheet and an inner liner of smooth (uncorrugated) sheet, fabricated with helical corrugations and lock seams * **Type IR** — full circular cross section with a single thickness of smooth sheet, fabricated with helical ribs projecting outwardly * **Type II** — Type I pipe that has been reformed into a pipe-arch having an approximately flat bottom * **Type IIA** — Type IA pipe that has been reformed into a pipe-arch having an approximately flat bottom * **Type IIR** — Type IR pipe that has been reformed into a pipe-arch having an approximately flat bottom * **Type III** —Type I pipe that has been perforated to permit the inflow or outflow of water * **Type IIIA**—semicircular cross section having a smooth (uncorrugated) bottom with a corrugated top shield |
| **Comments:** | **None** | |

**Section 4: Quality Control Inspection Matrix**

|  |  |  |
| --- | --- | --- |
| **Matrix of Quality Control Inspections, Facilities, and Intervals** | | |
| Please indicate for the QC tests shown below if your facility conducts the inspection in-house or indicate the name of the outside facility used (Second or Third Party). Additionally, indicate the frequency of record inspections. Please indicate contact information for second/third party facilities below. | | |
| **Second and/or third party facilities used** | | |
|  | |  |
| |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | TEST NAME | Inspection Performed: | | | Inspection Interval: | | | | | | In-House | By a Second Party Facility | By a  Third Party Facility | | M 36 | M 196 | | M 245 | | | **Coil Inspections:** |  | | | | | | | | | | *Coating Thickness* |  |  |  | |  |  |  | | | | *Lot Tracking* |  |  |  | |  |  |  | | | | **Pipe Inspections:** |  | | | | | | | | | | *Wall Thickness* |  |  |  | |  |  | | | | | *Corrugations:* |  |  |  | |  |  |  | | | | Profile Pitch |  |  |  | |  |  |  | | | | Profile Depth |  |  |  | |  |  |  | | | | *Inside Diameter* |  |  |  | |  |  |  | | | | *Pipe Length* |  |  |  | |  |  |  | | | | *Perforation Locations* |  |  |  | |  |  |  | | | | *Perforation Dimensions* |  |  |  | |  |  |  | | | | *Welded Seam Strength* |  |  |  | |  |  |  | | | | *Lockseam Strength* |  |  |  | |  |  |  | | | | | |
| **Comments:** | **None** | |

**Sample Reports for Coil and Pipe Testing**

\*Please provide sample reports representing the following quality control testing:

M36 Specification

Coil – Coating Thickness/weight, steel grade

Pipe – Lockseam, Diameter, Profile

M218 Specification:

Coil – Coating Thickness/weight, steel grade

M245 Specification

Coil – Coating Thickness/weight, steel grade

M246 Specification

Coil – Coating Thickness/weight, steel grade

Pipe – Lockseam, Diameter, Profile

M274 Specification

Coil/Coating – Coating Thickness/weight, steel grade

**Section 5: Signature**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Signature: | |  | | | | Date: |  | | |
| ***I certify that all responses are truthful and accurate.*** | | | | | | | | | |
| Name: |  | | | | Title: | | |  | |
|  | | | | | | | | | |
| Plant Name: | | |  | Location (City, State): | | | | |  |