

Spiral Rib CSP has over 30 years of in-ground performance. With a wide range of diameters, longer lengths, and custom fittings to meet your site conditions, CSP storm sewer systems will be able to save a substantial amount of both time and money to owners and taxpayers.

Product Comparison

Attribute	Spiral Rib CSP	Polypropylene (PP) Pipe
History	Over 30-Years of proven in-ground performance	Newer product with only a few years of history
Hydraulics	Smooth interior with external ribs capable of a Manning's "n" of 0.012.	Thin inner wall corrugates under load
AASHTO Maximum Height of Cover (Class II Backfill with 90% Compaction with 750mm Diameter)	20M cover	5M cover
Joints	Semi-Corrugated (Hugger) and Fully Corrugated	Stab joint
Pipe Lengths	9M standard lengths (custom lengths available)	6M standard lengths
Pipe Stiffness	Steel not affected by heat of the sun	Gray color absorbs heat and loses stiffness
Long-Term Strength (75-YR. Yield Strength)	33,000 psi yield	1,000 psi yield
Available Shapes	Round and Pipe Arch	Round
Diameters	up to 2400mm	up to 1500mm
Coefficient of Thermal Expansion and Contraction	Polypropylene has 10 times the thermal expansion of steel	
Manhole Junctions	Internal manhole risers reduce cost	Concrete manholes add additional cost

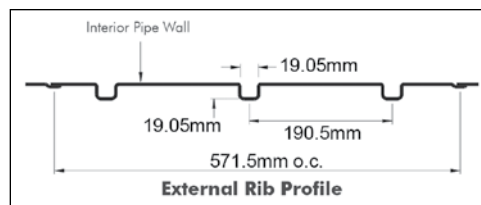


SPIRAL RIB CSP, MANNING'S "n" 0.012

600MM PP INTERIOR BEFORE DEAD-LOAD APPLIED

600MM PP INTERIOR AFTER DEAD-LOAD APPLIED

Please consider this a formal request for your review and approval of Aluminized Type 2 (ALT2) and Polymer Laminated Spiral Rib Pipe for storm sewer application and inclusion into this project. CSPI proposes to furnish this pipe as an alternate to the project specified material.



Aluminized Type 2 & Polymer Laminated Spiral Rib Pipe:

1. Significant material cost savings
2. Fast lead times
3. Installation advantages offered by lightweight pipe in long lengths
 - a. 2.0mm, 1200mm spiral rib pipe is 71.5kg/m, coupled with 9m lengths means maximum production value (custom lengths also available)
 - b. Utilize lightweight equipment
 - c. All junctions, fittings, manholes, grate inlets, etc. can be handled “in-line” as a fabricated fitting - “Feels like another piece of pipe...”

1.0 General

This specification covers the furnishing, installation, and design considerations for Aluminized Type 2 & Polymer Laminated, Spiral Rib Pipe and Pipe-Arch for culverts and storm sewers for the types, sizes, and designations as shown on the plans.

2.0 Material

The pipe shall be fabricated from an ALUMINIZED Type 2 coil, conforming to the requirements of AASHTO M-274 or ASTM A-929 or from Polymer Laminated coil to the requirements of ASTM A742.

3.0 Pipe

The pipe and pipe-arch shall be manufactured to conform to CSA G401. The pipe shall have a helical corrugation pattern, and shall have the sectional properties per Table 6 in CSA G401.

4.0 Coupling Bands

Coupling bands for the pipe and pipe-arch shall be made of the same base metal and coatings as the pipe and pipe-arch. Hugger bands and fully corrugated bands for round or pipe-arch shall be a minimum of 1.3mm gauge, 300mm wide bands with annular corrugations that are spaced to properly index with re-rolled corrugations of the pipe.

5.0 Installation

The pipe shall be installed in accordance with AASHTO Section 26, Division II or ASTM A-798.

6.0 Hydraulics

Values of Coefficient of Roughness (Manning’s “n”) will not exceed 0.012 or that recognized by other materials.

7.0 Structural

Material thickness will be determined based on AASHTO Section 12 and specific loading conditions. For highway loading, minimum Height of Covers are 300mm for up to and including 1200mm diameter, 600mm for 2400mm diameter pipes, respectively. Further consideration can be made for pipes exceeding 2400mm diameter.

8.0 Durability

Aluminized Type 2 and Polymer Laminated pipe provides a minimum service life of 75 years in the appropriate environment. ($3.0 \leq \text{pH} \leq 12.0$, $r > 750 \text{ ohm-cm}$) Considering the application for use is pavement surface runoff with select backfill, it is anticipated that a minimum service life of 75 years will be achieved. See CSPI Technical Bulletin #1.