
Standard Specification for Steel Sheet, Aluminum-Coated (Type 2), for Corrugated Steel Pipe

AASHTO Designation: M 274-87 (2021)

Technically Revised: 1987

Reviewed but Not Updated: 2021

Technical Subcommittee: 4b, Flexible and Metallic Pipe



**American Association of State Highway and Transportation Officials
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1. SCOPE

- 1.1. This specification covers steel sheet used in the fabrication of corrugated steel pipe (CSP) used for drainage pipe and underdrains. The steel sheet is coated with commercially pure aluminum (referred to as Type 2) on continuous lines by the hot-dip process, and is produced in one coating mass only. The material is furnished flat in coils and cut lengths, and corrugated in cut lengths.
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2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standard:*
- T 213M/T 213, Mass [Weight] of Coating on Aluminum-Coated Iron or Steel Articles
- 2.2. *ASTM Standards:*
- A463/A463M, Standard Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process
 - A754/A754M, Standard Test Method for Coating Weight (Mass) of Metallic Coatings on Steel by X-Ray Fluorescence
 - E376, Standard Practice for Measuring Coating Thickness by Magnetic-Field or Eddy-Current (Electromagnetic) Testing Methods
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3. TERMINOLOGY

- 3.1. In this specification, *manufacturer* refers to the producer of the sheet, *fabricator* refers to the producer of the pipe, and *purchaser* refers to the purchaser of the finished pipe.
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4. ORDERING INFORMATION

- 4.1. All sheet covered by this specification shall be ordered only to the specified thicknesses listed in Table 5.
- 4.2. Unless otherwise specified in the purchase order, all material furnished to this specification will be chemically treated, dry or oiled.
- 4.3. *Orders for material to this specification shall include the following information, as necessary, to adequately describe the desired product:*
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- 4.3.1. Name of material (aluminum-coated steel sheet for CSP);
- 4.3.2. AASHTO designation number and date of issue;
- 4.3.3. Corrugation size, if corrugated (Section 8.3);
- 4.3.4. Dimensions (thickness; width, either flat or overall corrugated; and length, if cut length);
- 4.3.5. Coil size requirements (specify maximum outside diameter (OD), acceptable inside diameter (ID), and maximum mass);
- 4.3.6. Certification, if required (Section 11.1); and
- 4.3.7. Special Requirements.
- Note 1**—Typical ordering descriptions are as follows:
- Aluminum-coated steel sheet for CSP conforming to M 274-____, 68-by-13-mm corrugations, 1.63 by 648 by 1500 m.
 - Aluminum-coated steel sheet for CSP conforming to M 274-____, 2.01-by-699-mm coil, 1200-mm OD, 600-mm ID, 9000 kg max mass certified with test report.

5. GENERAL REQUIREMENTS

- 5.1. Steel sheet material supplied under this specification shall meet the applicable requirements of ASTM A463/A463M unless otherwise specified herein. ASTM A463/A463M applies to aluminum-coated sheet; however, tolerances, sampling, sample preparation, and methods of testing (except for mass of coating) all are applicable to aluminum-coated sheet.

6. CHEMICAL COMPOSITION

- 6.1. The base metal composition shall conform to the requirements of Table 1.

Table 1—Base Metal Chemical Composition by Cast Analysis

	Composition, %	Tolerance over the Max Limit by Product Analysis, %
Sulfur, max	0.05	+0.01
Sum of carbon, manganese, phosphorus, silicon, and sulfur, max	0.70	+0.04

- 6.2. *Aluminum Bath Analysis*—The bath shall be produced from commercially pure aluminum and the bath analysis shall conform to the limits given in Table 2.

Table 2—Aluminum Bath Analysis

	Composition, %
Iron, max	3.0
Silicon, max	0.35
Magnesium, max	0.50
Other—each max	0.05
Other—total max	0.20