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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Carbon Steel Crane Rails¹

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1. Scope

1.1 This specification covers carbon steel crane rails of special designs only, and nominal weights of 104 lb/yd (51.6 kg/m) through 175 lb/yd (86.8 kg/m) for crane runway use.

1.2 When standard tee rail sections are desired, they shall be ordered in accordance with Specification A 1.

1.3 Supplementary Requirements S1 through S5 of an optional nature are provided. They shall apply only when specified by the purchaser in the order.

1.4 The values stated in inch-pound units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards:*

A 1 Specification for Carbon Steel Tee Rails²

2.2 Design details for the special crane rails are indicated in the crane rail catalogs of individual manufacturers, and referred to in the following documents:

American Institute of Steel Construction, Inc. (AISC), Manual of Steel Construction, Seventh Edition, pp. 1-136 and 1-137³

Association of Iron and Steel Engineers (AISE), Standard No. 6, May 1, 1969, pp. MD-22 through MD-25⁴

Crane Manufacturers Association, Inc. (CMAA), Specification No. 70, 1971, pp. 20 and 34⁵

2.3 *Military Standards:*

MIL-STD-129 Marking for Shipment and Storage⁶

MIL-STD-163 Steel Mill Products, Preparation for Shipment and Storage⁶

2.4 *Federal Standards*

Federal Standard No. 123 Marking for Shipment (Civil Agencies)⁶

3. Ordering Information

3.1 Orders for crane rails under this specification shall include the following information as appropriate:

3.1.1 Quantity (tons or pieces),

3.1.2 ASTM designation and year of issue,

3.1.3 Complete identification of section with dimensional drawing if required (see 2.1 and 2.2),

3.1.4 Length of rails or length of runway as required, (see 6.3 and S1),

3.1.5 Arrangement of drilled bolt holes with dimensional drawing if required,

3.1.6 Supplementary requirements that shall apply (see S1 through S5), and

3.1.7 Certification and Test Report Requirements (see Section 10).

4. Manufacture

4.1 *Melting Practice:*—The steel shall be made by any of the following processes: open-hearth, basic-oxygen or electric-furnace.

4.1.1 The steel may be cast by a continuous process, or in ingots.

4.2 *Discard:*—A sufficient discard shall be made to secure freedom from injurious segregation and piping.

4.3 *Control Cooling:*

4.3.1 Rails shall be control cooled in accordance with the following procedure, except when produced from vacuum-degassed steel or control cooled blooms, in which case the rails may be air cooled and 4.3.2 through 4.3.6 are not applicable.

4.3.2 All rails shall be cooled on hot beds or runways until full transformation is accomplished, and then charge immediately into the containers. In no case should the rail be charged below 725°F (386°C).

4.3.3 The temperature of the rails before charging shall be determined with reliable equipment at the head of the rail at least 12 in. (305 mm) from the end.

4.3.4 The cover shall be placed on the container immediately after completion of the charge and shall remain in place for at least 10 h. After the removal or raising of the lid of the container, no rails shall be removed until the temperature of the top layer of rails has fallen to 300°F (149°C) or lower.

4.3.5 The temperature between an outside rail and the adjacent rail in the bottom tier of the container at a point not less than 12 in. (305 mm), nor more than 36 in. (914 mm), from

¹ This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.01 on Steel Rails and Accessories.

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² *Annual Book of ASTM Standards*, Vol 01.04.

³ Available from the American Institute of Steel Construction, Inc., 8720 Red Oak Blvd., Ste. 201, Charlotte, NC 28217.

⁴ Available from the Association of Iron and Steel Engineers, 3 Gateway Center, Pittsburgh, PA 15222.

⁵ Available from the Crane Manufacturers Association of America, Inc., 8720 Red Oak Blvd., Ste. 201, Charlotte, NC 28217.

⁶ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.