



Designation: A 551/A 551M – 05

Standard Specification for Carbon Steel Tires for Railway and Rapid Transit Applications¹

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1. Scope

1.1 This specification covers seven classes of carbon steel tires for railway and rapid transit use.

1.1.1 *Class A*—For untreated driving tires for locomotives in passenger service.

1.1.2 *Class AHT*—For heat-treated driving tires for locomotives in passenger service.

1.1.3 *Class B*—For untreated driving tires for freight locomotives and tires for locomotive-truck, tender-truck, trailer and car wheels, and miscellaneous service.

1.1.4 *Class BHT*—For heat-treated driving tires for freight locomotives and tires for trailer wheels.

1.1.5 *Class C*—For untreated tires for switching locomotives.

1.1.6 *Class CHT*—For heat-treated driving tires and switching locomotives and tires for locomotive-trucks, tender-trucks, trailer and car wheels, and miscellaneous service.

1.1.7 *Class DHT*—For heat-treated driving tires for locomotives with light braking conditions, heavily loaded trailer tires, and rapid transit wheels where off-tread brakes are employed.

1.2 Supplementary requirements, including those in the general requirements of Specification A 788, are provided for use when additional testing or inspection is desired. These shall apply only when specified individually by the purchaser in the order.

1.3 The values stated in either inch-pound or SI (metric) units are to be regarded separately as standards. Within the text and tables the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore each system must be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.

1.4 Unless the order specifies the applicable “M” specification designation, the tires shall be furnished to the inch-pound units.

2. Referenced Documents

2.1 *ASTM Standards*:²

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products

A 788 Specification for Steel Forgings, General Requirements

3. Ordering Information and General Requirements

3.1 Material supplied to this specification shall conform to the requirements of Specification A 788, which outlines ordering information, manufacturing requirements, testing and retesting methods and procedures, marking, certification, product analysis variations, and additional supplementary requirements.

3.1.1 If the requirements of this specification are in conflict with those of Specification A 788, then the requirements of this specification shall prevail.

3.2 In addition to the ordering requirements from Specification A 788, the following details should be supplied:

3.2.1 Full identification of tread and flange contour with dimensional drawings as required,

3.2.2 Inside diameter to be rough machined or finished,

3.2.3 Intended service, and

3.2.4 Chemical composition requirements, if different from those given in Table 1.

4. Chemical Requirements

4.1 *Chemical Composition*—The steel shall conform to the requirements for chemical composition specified in Table 1, unless otherwise required by the purchaser (see 3.2.4).

4.1.1 The purchaser may use the product analysis provisions of Specification A 788 for tires produced to the requirements of Table 1. By agreement with the manufacturer, these provisions may be used also when the provisions of 3.2.4 apply.

5. Manufacture

5.1 *Discard*—Sufficient discard shall be made from each ingot to assure freedom from piping and undue segregation.

¹ This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A01.06 on Steel Forgings and Billets.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.