

	SURFACE VEHICLE INFORMATION REPORT	
		J2281 MAR2010
	Issued Revised	1997-05 2010-03
Superseding J2281 MAY1997		
Selecting and Specifying Hot-Rolled Steel Bar Products		

RATIONALE

SAE J418: Cancelled by SAE, inserted ASTM E 112 as substitute.
 ASTM A 255: The title of the specification was changed by ASTM.
 ASTM A 108: The title of the specification was changed by ASTM.
 ASTM A 331: Withdrawn by ASTM, replaced by ASTM A 108.
 ASTM A 535: Withdrawn by ASTM, no replacement.
 SAE J416: Cancelled by SAE, ASTM E 8 is already listed in this spec.
 4.1.3: Inserted "globular" before oxides to clarify D-types.
 5.5.1: Removed reference to cancelled SAE spec. J416.
 5.6: Deleted "lamps" and replaced with "laps."
 5.7.1: Corrected spelling to "austenite", deleted SAE J418, corrected "ASTM E 12" to ASTM E 112.
 5.7.1.1 Deleted SAE J418.

1. SCOPE

This SAE Information Report relates to hot-rolled steel bar products. It is intended as a guideline to assist in the selection and specification of hot-rolled steel bar; however, it is not to be interpreted as a material specification in itself.

1.1 Purpose

To provide general information about steel bar products and to provide a guideline for their selection and specification.

1.2 Field of Application

This document may be used as a guideline for the selection, specification, and ordering of steel bar products and as a reference and an educational document. It is intended for use by material, design, and product engineers, purchasing and material-control personnel, and educators.

2. REFERENCES

2.1 Applicable Publications

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

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2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J401	Selection and Use of Steels
SAE J403	Chemical Compositions of SAE Carbon Steels
SAE J404	Chemical Compositions of SAE Alloy Steels
SAE J406	Methods of Determining Hardenability of Steels
SAE J411	Carbon and Alloy Steels
SAE J412	General Characteristics and Heat Treatments of Steels
SAE J413	Mechanical Properties of Heat Treated Wrought Steels
SAE J416	Tensile Test Specimens
SAE J417	Hardness Tests and Hardness Number Conversions
SAE J419	Methods of Measuring Decarburization
SAE J420	Magnetic Particle Inspection
SAE J422	Microscopic Determination of Inclusions in Steels
SAE J423	Methods of Measuring Case Depth
SAE J425	Electromagnetic Testing by Eddy Current Methods
SAE J428	Ultrasonic Inspection
SAE J1081	Potential Standard Steels
SAE J1099	Technical Report on Low Cycle Fatigue Properties Ferrous and Non-Ferrous Materials
SAE J1123	Leaf Springs for Motor Vehicle Suspension—Made to Metric Units
SAE J1268	Hardenability Bands for Carbon and Alloy H Steels
SAE J1397	Estimated Mechanical Properties and Machinability of Steel Bars
SAE J1868	Restricted Hardenability Bands for Selected Alloy Steels
SAE J1975	Case Hardenability of Carburized Steels

2.1.2 ANSI Publication

Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ANSI B 32.4-1980 Preferred Metric Sizes for Round, Square, Rectangle, and Hexagon Metal Products

2.1.3 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM A 29/A 29M	Steel Bar, Carbon and Alloy, Hot-Wrought and Cold-Finished, General Requirements for
ASTM A 255	Methods for Determining Hardenability of Steel
ASTM A 295	High-Carbon Anti-Friction Bearing Steel
ASTM A 321	Steel Bars, Carbon, Quenched and Tempered
ASTM A 370	Test Methods and Definitions for Mechanical Testing of Steel Products
ASTM A 434	Specification for Steel Bars, Alloy, Hot-Wrought or Cold-Finished, Quenched and Tempered
ASTM A 485	High Hardenability Antifriction Bearing Steel
ASTM A 534	Carburizing Steels for Anti-Friction Bearings
ASTM A 675/A 675M	Steel Bars, Carbon, Special Quality, Mechanical Properties
ASTM E 8	Test Methods of Tension Testing of Metallic Materials
ASTM E 12	Definitions of Terms Relating to Density and Specific Gravity of Solids, Liquids, and Gases
ASTM E 112	Standard Test Methods for Determining Average Grain Size
ASTM E 45	Practice for Determining the Inclusion Content of Steel
ASTM E 381	Method of Macroetch Testing, Inspection, and Rating Steel Products, Comprising Bars, Billets, Blooms, and Forgings
ASTM E 399	Test Method for Plane-Strain Fracture Toughness of Metallic Materials

2.1.4 ASM Publication

Available from ASM International, 9639 Kinsman Road, Materials Park, OH 44073-0002, Tel: 440-338-5151, www.asminternational.org.

Metals Handbook, Volume 1 Properties and Selection: Irons, Steels and High-Performance Alloys

2.1.5 Forging Industry Association Publication

Available from Forging Industry Association, 25 West Prospect Avenue, Suite 300, Cleveland, OH 44115, Tel: 216-781-6260, www.forging.org.

FIA/ASM International Forging Handbook