



SURFACE VEHICLE INFORMATION REPORT

J349™

DEC2017

Issued 1968-07
Revised 1991-02
Stabilized 2017-12

Superseding J349 FEB1991

Detection of Surface Imperfections
In Ferrous Rods, Bars, Tubes, and Wires

RATIONALE

The technical report covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

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Foreword—This Document has not changed other than to put it into the new SAE Technical Standards Board Format.

1. Scope—This SAE Information Report provides a summary of several methods that are available for detecting, and in some instances detecting and measuring, surface imperfections in rods, bars, tubes, and wires. References relating to detailed technical information and to specific applications are enumerated in 2.2.

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J420—Magnetic Particle Inspection

SAE J425—Eddy Current Testing by Electromagnetic Methods

SAE J426—Liquid Penetrant Test Methods

SAE J428—Ultrasonic Inspection

2.2 Related Publications—The following publications are provided for information purposes only and are not a required part of this document.

J. M. Mandula and E. S. Monk, "NDT Systems for Steel Billets, Bars, and Tubes." *Materials Evaluation*, Vol. 34 (10), October 1976, pp. 230–236.

W. A. Black, "Evaluation of Surface Defects by Nondestructive Testing - A Progress Report." *Journal of Metals*, October 1965, pp. 1136–1140.

J. M. Mandula, "Billetsan - A New Eddy Current Device for Total Surface Inspection of Square Billets." *Materials Evaluation*, Vol. 30 (3), March 1972, pp. 49–54.

T. W. Judd, "Orbitest for Round Tubes." *Materials Evaluation*, Vol. 28 (1), Jan. 1970, pp. 8–12.

C. E. Betz, "Principles of Penetrants." Second Edition, Magnaflux Corporation, Chicago, IL.

Metals Handbook, Ninth Edition, Vol. 17, Nondestructive Evaluation and Quality Control, 1989, ASM International, Metals Park, OH 44073.

W. J. McGonagle, "Nondestructive Testing." Second Edition, Gordon and Breach, Science Publishers, Inc., New York, 1969.