Specification for Welding of Rotating Elements of Equipment
Key Words — Wrought and cast materials, rotating equipment, welding fabrication, welding inspection, weld modification and repair

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Specification for
Welding of Rotating Elements of Equipment

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Prepared by
AWS D14 Committee on Machinery and Equipment

Under the Direction of
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Approved by
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Abstract

This standard establishes material and workmanship standards for manufacturers, fabricators, repair organizations, purchasers, and owner/operators of rotating equipment which are fabricated or repaired by welding. Included are sections defining process qualifications, operator qualifications, quality control, inspection requirements, and repair requirements.
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1. Scope

This specification establishes minimum acceptable requirements for weld joint detail and fabrication by welding of rotating elements in new equipment. This specification also applies to the modification or repair by welding of rotating elements in existing equipment. Equipment types covered by this specification include, but are not limited to: crushers, fans, gears, crankshafts, flywheels, centrifugal impellers, kilns, air moving devices, and blowers. The intent of this specification is not to include steam or combustion turbine rotors or blading, camshafts, or power transmission shafts. This specification also applies to such products and procedures that are agreed to by the Manufacturer, Fabricator, Repair Organization and the Owner.

Requirements contained herein are not intended to nullify or void the requirements of any law or governmental agency regulation or other codes applied to components. Additional requirements may be invoked by contract documents. The specification establishes the minimum acceptable practice at the time of its publication. It is not intended to restrict new developments or in any way to inhibit advances in the art and science of welding.

This specification is intended to promote the following:
(1) High quality construction and repair of welded rotating elements of equipment,
(2) Adequate initial and sustained performance of welded rotating elements of equipment,
(3) Personnel safety,
(4) Clear, concise fabrication practices that will be readily understood by the Manufacturer, Fabricator, Repair Organization, Fabricator, Owner, and user, and
(5) Conservation of human and material resources in the fabrication of welded rotating elements of equipment.

This specification makes use of both U.S. Customary Units and the International System of Units (SI). These measurements may not be exact equivalents; therefore each system must be used independently of the other without combining in any way. The specification with the designation D14.6 uses U.S. Customary Units. The specification D14.6M uses SI Units. The latter are shown in appropriate columns in tables or within brackets [ ] when used in the text.

Safety and health issues and concerns are beyond the scope of this standard, and therefore are not fully addressed herein. Safety and health information is available from other sources, including, but not limited to ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, and applicable federal and state regulations.

2. Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this AWS Standard. For undated references, the latest edition of the referenced standard shall apply. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply.

AISI Steel Specifications

AISI no longer publishes steel specifications. Information on former AISI grades can be obtained at www.iss.org.

ASTM Standards

(1) ASTM E 94, Guide for Radiographic Testing
(2) ASTM E 164, Recommended Practices for Ultrasonic Contact Examination of Weldments
(3) ASTM E 165, Standard Recommended Practice for the Liquid Penetrant Inspection Method

1. AISI documents can be obtained at www.iss.org.
2. ASTM documents can be obtained from the American Society for Testing and Materials, ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428, www.astm.org.