

AWS D18.3/D18.3M:2005
An American National Standard



Specification for Welding of Tanks, Vessels, and Other Equipment in Sanitary (Hygienic) Applications



American Welding Society



Key Words—Visual examination acceptance criteria, food processing equipment, qualification, sanitary application, stainless steel

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**Approved by
American National Standards Institute
August 25, 2005**

Specification for Welding of Tanks, Vessels, and Other Equipment in Sanitary (Hygienic) Applications

Prepared by
AWS D18 Committee on Welding in Sanitary Applications

Under the Direction of
AWS Technical Activities Committee

Approved by
AWS Board of Directors

Abstract

This specification provides the requirements for welding of tanks, vessels, and other equipment used in food processing plants and other areas where sanitary (hygienic) applications are required. The document addresses qualification, fabrication, extent of visual examination, acceptance criteria, and documentation requirements.



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Specification for Welding of Tanks, Vessels, and Other Equipment in Sanitary (Hygienic) Applications

1. Scope and Responsibilities

1.1 Scope. This specification covers the requirements for welding of carbon steels, stainless steels, and nickel alloys in sheet, plate, bar, and other forms for the fabrication and construction of new tanks, vessels, and other equipment in sanitary (hygienic) applications. The welding of pipe or tubing to a tank, vessel, or other piece of sanitary equipment, for use as a nozzle or other opening, is included in this specification. This specification excludes the welding of tube and pipe for the transportation of sanitary (hygienic) system products and cleaning or sanitizing solutions. Pipe and tube welding for sanitary (hygienic) systems is covered in AWS D18.1, *Specification for Welding of Austenitic Stainless Steel Tube and Pipe Systems in Sanitary (Hygienic) Applications*.

This specification is intended for new construction. However, the requirements may also be applied to maintenance and repair of food processing equipment. When there is a conflict between this specification and a structural design specification to which the equipment is being constructed, the structural code shall govern on issues that apply to structural design or structural integrity. This specification does not address requirements designed to prevent corrosion damage during service. This specification also does not cover the design aspects of components or systems used for sanitary (hygienic) applications.

Sanitary processing systems are intended to include those systems handling products for human and animal consumption, or for cleaning and sanitizing solutions used in these systems. Such products include dairy, meat, poultry, vegetable, beverage, personal care items (such as shampoo, soap, toothpaste, cosmetics), and other products consumed or used by humans and animals.

This specification addresses welding qualification and visual examination requirements for as-welded surfaces as well as finished surfaces.

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 D18.3 uses U.S. Customary Units. The specification D18.3M uses SI Units. The latter are shown in appropriate columns in tables or within brackets [] when used in the text.

Safety and health issues 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 federal, state, and local regulations as well as other safety standards such as ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*.

1.2 Owner's Responsibility. The Owner or their representatives shall provide a complete specification for the equipment that the specification applies and shall identify surface classification zones (product-contact surface zones and nonproduct-contact surface zones) and weld finishes for each classification zone. Owners should use Annex B to designate the required weld finish of each zone.

2. Normative References

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

2.1 AWS Documents¹

- (1) ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*
- (2) AWS A3.0, *Standard Welding Terms and Definitions*
- (3) AWS B2.1, *Specification for Welding Procedure and Performance Qualification*

¹ AWS standards are published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.