



Stainless steel tubes and tube fittings for food processing and hygienic applications

Part 1: Tubes



AS 1528.1:2019

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The following are represented on Committee FT-027:

- Australian Chamber of Commerce and Industry
- Australian Food Engineering Association
- Australian Industry Group
- Australian Stainless Steel Development Association
- Dairy Australia
- Winery Engineering Association

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Preface

This Standard was prepared by the Standards Australia Committee FT-027, Stainless Steel Tubes and Tube Fittings for Food Processing and Hygienic Applications, to supersede AS 1528.1—2001, *Tubes (stainless steel) and tube fittings for the food industry, Part 1: Tubes*.

The objective of this Standard is to specify dimensional, material and hygienic requirements for tubes used in the tube lines for food processing and hygienic applications.

This is Part 1 of a series of Standards for stainless steel tubes and tube fittings for food processing and hygienic applications. The Standards in the series are as follows:

AS 1528.1, *Stainless steel tubes and tube fittings for food processing and hygienic applications, Part 1: Tubes* (this Standard)

AS 1528.2, *Stainless steel tubes and tube fittings for food processing and hygienic applications, Part 2: Screwed tube couplings*

AS 1528.3, *Stainless steel tubes and tube fittings for food processing and hygienic applications, Part 3: Butt weld tube fittings*

AS 1528.4, *Stainless steel tubes and tube fittings for food processing and hygienic applications, Part 4: Clamp tube fittings*

The revision of the AS 1528 series more closely aligns with other national and international Standards applicable to stainless steel tube and tube fittings for hygienic applications, while retaining a number of requirements that were identified in the prefaces to the 2001 editions as lacking in ASTM and ISO Standards.

ISO, European and other national Standards were reviewed and found not suitable for current Australian requirements.

The major changes to this Standard in this revision include the following:

- (a) The title of the Standard was changed to include “hygienic applications” in recognition of a broader application than simply for food processing industry.
- (b) Exclusion of seamless and duplex tube (in practice they are not used for food processing lines).
- (c) Redefining of raw material requirements.
- (d) Common internal surface finish for all parts of the Standard.
- (e) Closer alignment of tolerances with international, European and US-based Standards.
- (f) Expansion of the diameter range and inclusion of wall thicknesses common to various tube diameters.
- (g) Inclusion of weld bead and parent material surface roughness measurement and tolerances.
- (h) Inclusion of weld bead heat tint tolerance.

The term “informative” is used in Standards to define the application of the appendix to which it applies. An “informative” appendix is only for information and guidance.

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Australian Standard®

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Part 1: Tubes

1 Scope

This Standard specifies requirements and tests for welded austenitic stainless steel tubes for use in food processing and other hygienic applications.

These tubes are intended to be used with stainless steel fittings in accordance with AS 1528.2, AS 1528.3 and AS 1528.4.

NOTE Information to be supplied for purchase is given in [Appendix A](#).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

AS 1528.2, *Stainless steel tubes and tube fittings for food processing and hygienic applications, Part 2: Screwed tube couplings*

AS 1528.3, *Stainless steel tubes and tube fittings for food processing and hygienic applications, Part 3: Butt weld tube fittings*

AS 1528.4, *Stainless steel tubes and tube fittings for food processing and hygienic applications, Part 4: Clamp tube fittings*

ISO 4288, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture*

ASTM A240M, *Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications*

ASTM A269M, *Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service*

ASTM A1016M, *Standard Specification for General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel, and Stainless Steel Tubes*

AWS D18.1M, *Specification for Welding of Austenitic Stainless Steel Tube and Pipe Systems in Sanitary (Hygienic) Applications*

EN 10204, *Metallic products—Types of inspection documents*

3 Terms and definitions

No terms and definitions are listed in this document.

4 Working pressure

Non-shock maximum working pressure for a tube shall be 10 bar at temperatures from –20 °C up to 100 °C, subject to the engineering requirements of the specific application.