Australian Standard™

Tubes (stainless steel) and tube fittings for the food industry

Part 2: Screwed couplings

Standards Australia

This Australian Standard was prepared by Committee FT-012, Dairy Factory Equipment. It was approved on behalf of the Council of Standards Australia on 30 December 2000 and published on 13 March 2001.

The following interests are represented on Committee FT-012:

Australian Chamber of Commerce and Industry

Australian Dairy Products Federation

Australian Stainless Steel Development Association

Dairy Food Safety, Victoria

Dairy Industry Association of Australia

Dairy Industry Authority of Western Australia

Dairy Process Engineering Centre

Safe Food Production, N.S.W.

Queensland Dairy Authority

Additional interests participating in the preparation of this Standard:

Stainless Steel Tube Manufacturers

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Tubes (stainless steel) and tube fittings for the food industry

Part 2: Screwed couplings

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PREFACE

This Standard was prepared by the Standards Australia Committee FT-012, Dairy Factory Equipment, to supersede AS 1528.2—1976.

This is Part 2 of a series of Standards for tubes (stainless steel) and tube fittings for the food industry. It applies to ring-joint type and to trapezoidal thread (ISO type) stainless steel screwed couplings for use in the food processing industry. The other Standards in the series are as follows:

AS	
1528	Tubes (stainless steel) and tube fittings for the food industry
1528.1	Part 1: Tubes
1528.3	Part 3: Butt weld tube fittings
1528.4	Part 4: Clamp liners with gaskets

The objective of this revision is to cover fittings designed to meet the requirements of changing process conditions and practices.

The Committee reviewed ISO 2853:1993, *Stainless steel threaded couplings for the food industry*, for adoption.

The screwed couplings used in the food industry equipment are of two broad categories, i.e. recessed ring joint type and the trapezoidal thread type. The scope of the ISO Standard is only for trapezoidal thread type.

As such the ISO Standard does not cover one broad group of couplings that is being used in Australian food industry equipment. Hence, the requirements of recessed ring joint type which include the following safety requirements are not covered by the ISO Standard:

(a) Pressure and temperature requirements.

(b) Requirements of the material.

(c) Requirements for continuous operations.

In addition to the abovementioned limitations of the scope of the ISO Standard, the Standard is impracticable to use in Australia, as the Standard is lacking the following requirements on the trapezoidal type and other coupling unions used in Australia:

(i) Some of the tube dimensions used in the Australian food industry equipment.

(ii) Coupling unions such as flat face union and Australian Crevice free union.

(iii) The dimensions of expanded-type male part, expanded-type liner, welded-type male part lip removed (suitable for flat faced coupling), welded-type male part, welded-type face liner, welded type liner, slotted round nut, hex nut, and blank cap of recessed ring joint screwed couplings.

Therefore, the Committee did not recommend the adoption of ISO Standard as the revision of AS 1528.2—1976.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

Statements expressed in mandatory terms in notes to figures are deemed to be requirements of this Standard.

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SECTION 1 RECESSED RING JOINT TYPE

1.1 SCOPE OF SECTION

This Section applies to screwed couplings of the compressible ring joint type (RJT) for effecting joins in pipelines in food processing plants. It specifies dimensional, material and surface finish requirements for the individual components of the couplings.

NOTE: Information to be supplied by the purchaser is given in Appendix A.

1.2 APPLICATION

The male parts and the liners are intended for use with the stainless steel tubes specified in AS 1528.1.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1528	Tubes (stainless steel) and tube fittings for the food industry
1528.1	Part 1: Tubes
1654	ISO system of limits and fits (series)
ISO	
4288	Geometrical Product Specifications (GPS)—Surface texture: Profile method—Rules and procedures for the assessment of surface texture

1.4 TYPES AND ASSEMBLIES

The screwed couplings are two types, viz the expanded type and the welded type.

NOTE: Recommended procedures for fitting the relevant components to stainless steel tubing are given in Appendices B and C.

For each type, the assembly of the component parts is illustrated in Appendix D.

1.5 MATERIALS

1.5.1 Male parts, liners, nuts and blank caps

Cast or wrought steel from which male parts, liners, nuts and blank caps are made shall be an austenitic or duplex stainless steel and shall comply with a raw material specification appropriate to the material chosen.

1.5.2 Pressure and temperature specification

Fittings described in the Standard shall be capable of withstanding 10 bar pressure at 100°C.