

Stainless steel tubes and fittings for the food industry and other hygienic applications —

Part 3: Specification for clamp type couplings

ICS 67.260; 77.140.75

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Piping Systems Components Standards Policy Committee (PSE/-) to Technical Committee PSE/8, upon which the following bodies were represented:

Adhesive Tape Manufacturers' Association
 British Compressed Air Society
 British Gas plc
 British Malleable Tube Fittings Association
 British Steel Industry
 British Valve and Actuator Manufacturers' Association
 British Welded Steel Tube Association
 Engineering Equipment and Materials Users' Association
 Food and Drink Federation
 Institution of Civil Engineers
 Institution of Gas Engineers
 Institution of Water and Environmental Management
 Large Diameter Steel Tube Association
 Mechanical Handling Engineers' Association
 Stainless Steel Fabricators' Association of Great Britain
 Steel Tube Fittings Manufacturers' Technical Association
 Water Companies Association
 Water Research Centre
 Water Services Association of England and Wales
 Coopted member

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

Brewers Society
 Dairy Trade Federation
 Institution of Production Engineers
 Milking Machine Manufacturers' Association

This British Standard, having been prepared under the direction of the Piping Systems Components Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 31 January 1992

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The following BSI references relate to the work on this standard:
 Committee reference PSE 8
 Drafts for comment 88 72921 DC, 09/30194304 DC
ISBN 978 0 580 65639 2

Amendments issued since publication

Amd. No.	Date	Comments
14041	21 January 2003	Revision of Table 1, Table 2 and Table 3 and correction to reference in Annex G
Amendment No. 2	31 August 2009	See foreword

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Foreword

This Part of BS 4825 has been prepared under the direction of the Piping Systems Components Standards Policy Committee.

BS 4825-3:1991+A2:2009 supersedes BS 4825-3:1991, which is withdrawn.

BS 4825 is published in five Parts:

- *Part 1: Specification for tubes;*
- *Part 2: Specification for bends and tees;*
- *Part 3: Specification for clamp type couplings;*
- *Part 4: Specification for threaded (IDF type) couplings;*
- *Part 5: Specification for recessed ring joint type couplings.*

This Part of BS 4825 has been prepared taking into account ISO 2852 published by the International Organization for Standardization.

Couplings specified in BS 4825 are intended for the following uses:

- *Part 3: where either in-place cleaning or frequent dismantling is necessary;*
- *Part 4: where cleaning in-place techniques are normally practised;*
- *Part 5: where piping systems are frequently dismantled.*

The essential differences between this Part of BS 4825 and BS 4825-3:1976 are as follows.

- a) This edition has been simplified by excluding reference to tube outside diameters not in current use.
- b) Tube sizes of 1.6 mm wall thickness have been introduced for welded type clamp liners for tube outside diameters of 50.8 mm and below.

The start and finish of text introduced or altered by Amendment No. 2 is indicated in the text by tags **A2** **A2**. Amendment No. 1 is not indicated. Minor editorial changes are not tagged.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 15 and back cover.

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1 Scope

This Part of BS 4825 specifies the dimensions, tolerances, surface finish, materials, assembly and hygienic requirements for welded and expanded type clamp liners and seals in tube couplings for the food industry and other hygienic applications. The clamp liners specified are intended to be used with stainless steel tubes specified in BS 4825-1.

The standard does not cover ERW tube.

NOTE 1 Attention is drawn to the fact that this Part of BS 4825 does not cover the design of the clamps themselves. Great care should be taken to ensure that suitable clamps are used and that the accuracy of the pipework installation is adequate for satisfactory joints to be made.

NOTE 2 The titles of the publications referred to in this standard are listed on  page 15 .

2 Information to be supplied by the purchaser

2.1 The purchaser is to provide to the supplier the information given in Appendix A to enable products to be supplied in accordance with this standard.

2.2 A number of options are permitted by this standard as given in Appendix B.

Both the definitive requirements specified throughout this standard and the options selected by the purchaser shall be satisfied by the manufacturer before a claim of compliance with this standard can be made and verified. In the event that the purchaser does not indicate his requirements at the time of enquiry and order the manufacturer shall select the option where appropriate.

3 Definitions

For the purposes of this Part of BS 4825, the following definitions apply.

3.1

clamp tube coupling

coupling with two liners intended for joining tube ends together by means of a clamp

NOTE An assembly drawing of a clamp type coupling is shown in Figure 1.

3.2

clamp liner

flanged tube coupling part, with one conical face to provide means for connecting mating liners

3.3

welded type clamp liner

clamp liner to be joined to a tube end by a butt weld

3.4

expanded type clamp liner

clamp liner to be attached to a tube end by expansion

3.5

seal

ring shaped tube coupling part intended to make a hygienic liquid-tight joint between the flanges of two clamp liners

3.6

clamp

ring shaped tube coupling part with taper sided channel section

4 Symbols

For the purposes of this Part of BS 4825, the following symbols apply.

C_1	outside diameter of neck of expanded type liner
C_2	groove diameter and seal bulge diameter
C_4	inside diameter of seal
C_5	inside diameter of expanded type liner
C_6	inside diameter of welded type liner
C_7	flange diameter
C_{10}	outside diameter of neck of welded type liner
E	inside diameter of seal lip
F_2	total length of welded type liner
F_3	total length of expanded type liner
K	groove depth
L_1	flange thickness
P_1	flange edge radius
P_2	groove edge radius
R_2	flange fillet radius
R_3	groove bottom radius
R_4	seal bulge radius
R_5	seal fillet radius
S	outside diameter of seal (without lip)
T_1	seal web thickness
T_2	seal lip length
T_4	seal lip thickness
U	seal bulge thickness
V	seal compression thickness
X_1	lock ring groove diameter
X_2	lock ring outside diameter
Y	radial clearance between clamp and flange
Z	radial clearance between clamp and neck of expanded type liner
α	flange angle
β	groove angle