INTERNATIONAL STANDARD

IEC 60874-19-1

Second edition
2003-01

Connectors for optical fibres and cables –

Part 19-1:
Fibre optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode fibre type A1a, A1b – Detail specification

Connecteurs pour fibres optiques et câbles –

Partie 19-1:
Connecteur pour câble de liaison de type SC-PC (duplex flottant) normalisé, terminé sur une fibre multimodale de types A1a, A1b –
Spécification particulière

Reference number
IEC 60874-19-1:2003(E)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR OPTICAL FIBRES AND CABLES –

Part 19-1: Fibre optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode fibre type A1a, A1b – Detail specification

FOREWORD

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3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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International Standard IEC 60874-19-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition published in 1999. It constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Report on voting
86B/1775/FDIS	86B/1826/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has not been drafted in complete accordance with the ISO/IEC Directives, Part 2.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

The references to clauses or subclauses of IEC 60874-1 indicated in this part apply to the fourth edition of IEC 60874-1.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

The contents of the corrigendum of April 2004 have been included in this copy.

CONNECTORS FOR OPTICAL FIBRES AND CABLES –

Part 19-1: Fibre optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode fibre type A1a, A1b – Detail specification

NATIONAL STANDARDS ORGANIZATION:	**.....** **Date .....**

DETAIL SPECIFICATION IEC QC 910004XX0001

FIBRE OPTIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH

- GENERIC SPECIFICATION: QC 910000 (IEC 60874-1)
- BLANK DETAIL SPECIFICATION: QC 910004 (IEC 60874-1-1)

CONNECTOR SET FOR OPTICAL FIBRES AND CABLES

CLASSIFICATION:

Type: Name: SC (floating duplex)

For use in datacom applications as specified in ISO/IEC International Standard 11801:

Generic cabling for customer premises

and as defined in category C of IEC 61753-1:

Fibre optic interconnecting devices performance standard – Part 1 General and Guidance

Configuration: plug-adaptor-plug

Coupling: push-pull

Control dimensions:

– Plug: see figures 1, 2 and 3

– Adaptor: See IEC 60874-19-3

Arrangement: patchcord arrangement

Style: Fibre retention: as required

Cable retention: as required

Optical coupling: butting

Alignment: resilient sleeve alignment

Variants: see page 9

Climatic category: 10/60/4

Environmental category: 4 (category C of IEC 61753-1)

Assessment level: A

QUALIFICATION PROCEDURE: Fixed sample procedure

SAFETY WARNING: Take care when handling small diameter optical fibre to prevent puncturing the skin, especially in the eye area. Direct viewing of the end of an optical fibre when it is propagating energy is not recommended unless prior assurance is obtained as to the safe energy output level.

Applicable fibre cable information:	
Core diameter	in accordance with IEC 60793-2
Cladding diameter	in accordance with IEC 60793-2
Buffer diameter	(250 ± 15) µm, (500 ± 30) µm, (900 ± 50) µm
Tension member	Aramid strength member
Jacket outer diameter	As required per variant

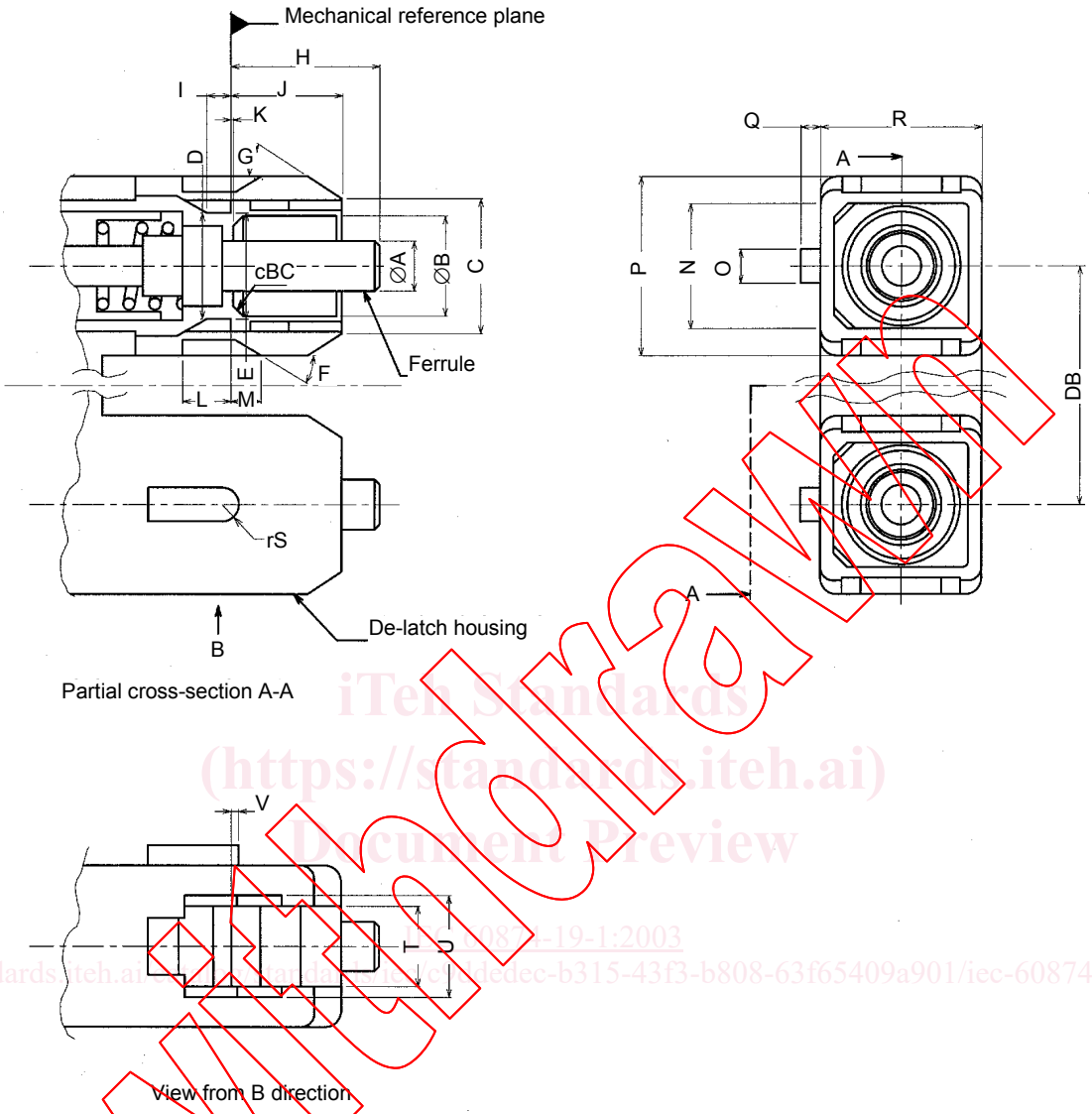


Figure 1 – Plug mating face dimensions

Reference	Dimensions mm		Notes
	Minimum	Maximum	
A	2,497	2,500	Diameter
B	4,80	4,90	Diameter
C	6,80	7,40	
D	4,90	5,30	
E	6,70	6,80	
F	19°	23°	
G	25°	35°	
H	7,15	7,50	1, 2
I	0,80	1,20	
J	5,30	5,50	
K	–0,10	0,05	3

L	2,11	2,50	
M	2,00	2,80	
N	6,60	6,80	
O	1,60	1,80	
P	8,89	8,99	
Q	0,80	1,00	
R	7,29	7,39	
rS	0,80	0,90	Radius
T	4,05	4,15	
U	5,40	5,60	
V	0	0,50	
BC	0	0,50	Chamfer
DB	12,25	13,15	7

NOTE 1 Ferrule compression force shall be from 7,8 N to 11,8 N, when the ferrule is compressed to a point where H is 7 mm ± 0,1 mm.

NOTE 2 This value shows the dimension after the ferrule is polished and in the unmated condition.

NOTE 3 The negative dimension refers to the fact that the position of the inside bottom plane is left-direction relative to the plane defined as mechanical reference plane.

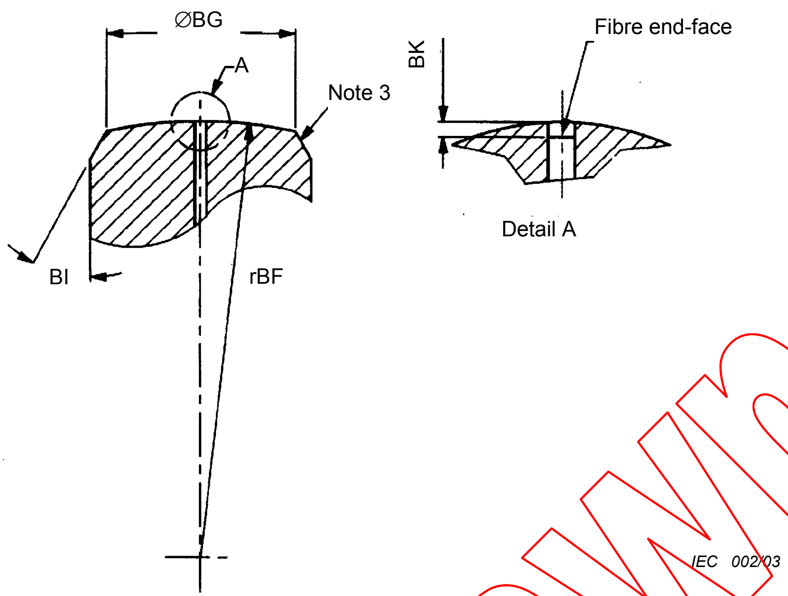
NOTE 4 Where a tolerance of form is not specified, the limits of the dimensions for a feature control the form as well as the size.

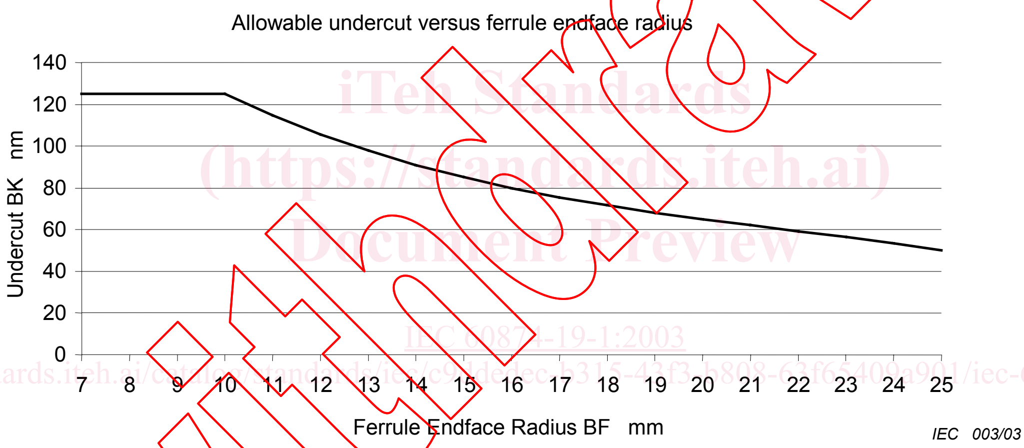
NOTE 5 Where interrelated features of size (features shown with a common axis or centre plane) have no geometric tolerance of location or run-out specified, the limits of the dimensions for a feature control the location tolerance as well as the size.

NOTE 6 Where perpendicular features (features shown at right angles) have no geometric tolerance of orientation or run-out specified, the limits of the dimensions for a feature control the orientation tolerance as well as the size.

NOTE 7 Plugs shall be capable of floating between the DB maximum and DB minimum.

Figure 1 – Plug mating face dimensions *(concluded)*





The value of the undercut, BK, is BK = – 0,02BF^3 + 1,3BF^2 – 31BF + 325 from 10 mm ≤ BF ≤ 25 mm.
For 7 ≤ BF ≤ 10 the value of under cut is 125 nm.

Reference	Dimensions mm		Notes
	Minimum	**Maximum**	
rBF	7,00	25,00	1, radius
BG	1,90	2,26	Diameter 2
BI	25°	35°	
BK	–0,0001	See graph	4, see curve

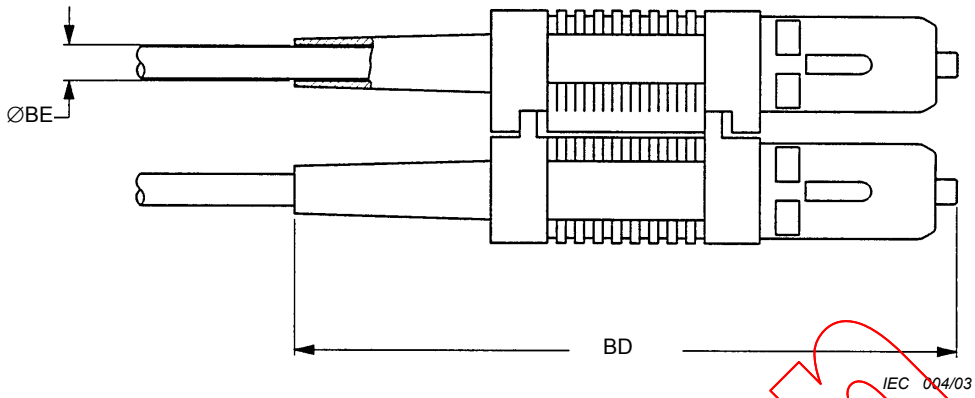
NOTE 1 Eccentricity of a spherical polished ferrule end face is less than 50 µm.

NOTE 2 This value is applicable for variants as per variant table in Figure 3.

NOTE 3 Break edge.

NOTE 4 The negative dimension refers to the fibre protrusion. Dimension BK shall be measured according to IEC 61300-3-23.

Figure 2 – Ferrule end face geometry after termination



Reference	Dimensions mm		Notes
	Minimum	Maximum	
BD		60	
BE	2,20		1
BE	2,60		2
BE	2,90		3
BE	3,20		4

NOTE 1 This value is applicable to the variant number –1001.
NOTE 2 This value is applicable to the variant number –1002.
NOTE 3 This value is applicable to the variant number –1003.
NOTE 4 This value is applicable to the variant number –1004.

Figure 3 – Plug dimension