



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: Sira 02ATEX3093X

4 Equipment: E1WF-S, E1WF-C-S, E1XF-S & E1ZF-S Ranges of Cable Glands

5 Applicant: Pirelli Cables Ltd  
Components Unit (trading as BICON)

6 Address: Hall Lane  
Prescot  
Merseyside  
L34 5UR  
UK

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number R51A8796A.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 50014:1997 (amendments 1 and 2)  
EN 50018:2000  
EN 50019:2000  
EN 50281-1-1:1998

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2GD  
EEx e II and EEx d IIC

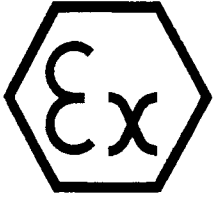
Project Number 51A8796  
Date 7 August 2002  
C. Index 07

M D Shearman  
Certification Manager

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## SCHEDULE

### EC TYPE-EXAMINATION CERTIFICATE

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#### 13 DESCRIPTION OF EQUIPMENT

The E1WF-S, E1WF-C-S, E1XF-S & E1ZF-S ranges of compression seal cable glands are manufactured from brass to BS 2874:1986 grades CZ121 or 122 or better. The glands are intended to terminate circular cables into flameproof and increased safety enclosures without compromising the explosion protection provided by the enclosures in accordance with relevant codes of practice. They are used with the following cable forms:

- E1WF-S - either steel wire armoured or aluminium wire armoured cables
- E1WF-C-S - continental wire/strip armoured cables
- E1XF-S - wire braided cables
- E1ZF-S - steel tape armoured cables

The glands consist of a male-threaded front entry component, designated the gland body, which is intended to screw into an entry point of its associated enclosure. The gland body contains a polychloroprene seal onto the cable inner sheath and an additional polychloroprene outer 'O' ring on the mating thread. In the case of non-threaded entry points, the glands are fitted with the use of a locking nut. The gland barrel threads onto the gland body and houses an armour-clamping ring and cone. The armour ring effects clamping of the cable armour or braid onto the armour cone when the gland barrel is tightened onto the gland body. An outer seal gland nut, fitted with a polychloroprene seal and a fibre skid washer, screws onto the gland barrel effecting environmental sealing onto the outer sheath of the cable.

Design options:

Alternative metallic materials of manufacture	Mild steel to BS 970 Part 1:1991 Stainless steel to BS 970 Part 4:1987 Aluminium to BS 1471:1972 or better Aluminium to BS 1472:1987 or better
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Alternative skid washer materials of manufacture	Nylon 6 The same material as the gland
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All metallic materials may additionally be surface coated to limit any electrolytic reaction between dissimilar materials.

Alternative entry threadforms that are within its dimensional parameters and that maintain compliance with the requirements of clause 5.3 of EN 50018:2000.

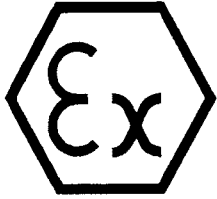
Alternative profiles of construction of the gland nut, gland barrel and gland body components with the minimum wall sections, the number of threads engaged and the thread engagement length maintained.

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#### E1WF-S range for either steel wire armoured or aluminium wire armoured cables

Gland Title	Gland Size	ISO Entry Thread	Under Armour Diameter (mm)		Outer Sheath Diameter (mm)		Armour Range (mm)	
			Min	Max	Min	Max	Min	Max
E1WF-S	16	M16	3.81	8.74	7.0	13.2	0.9	-
E1WF-S	20ss	M20	3.81	8.74	7.0	13.2	0.9	-
E1WF-S	20s	M20	8.0	11.79	8.0	15.8	0.9	1.4
E1WF-S	20R	M20	10.19	14.15	11.7	20.8	0.6	1.4
E1WF-S	20	M20	11.79	14.15	11.7	20.8	0.9	1.4
E1WF-S	25	M25	14.0	20.12	17.0	27.2	1.25	1.6
E1WF-S	32	M32	19.7	26.55	19.0	33.5	1.6	2.0
E1WF-S	40	M40	26.55	32.42	26.5	39.9	1.6	2.0
E1WF-S	50s	M50	32.42	38.39	38.0	46.3	2.0	2.5
E1WF-S	50	M50	38.39	44.33	36.0	52.6	2.0	2.5
E1WF-S	63s	M63	44.33	50.27	50.0	58.9	2.5	-
E1WF-S	63	M63	50.27	56.24	46.5	65.3	2.5	-
E1WF-S	75s	M75	56.24	62.18	62.0	71.6	2.5	-
E1WF-S	75	M75	62.18	68.13	58.0	78.0	2.5	-
E1WF-S	85	M85	68.0	74.0	68.0	88.0	3.15	-

#### E1WF-C-S range for continental armoured wire/strip cables

Gland Title	Gland Size	ISO Entry Thread	Under Armour Diameter (mm)		Outer Sheath Diameter (mm)		Armour Range (mm)	
			Min	Max	Min	Max	Min	Max
E1WF-C-S	16	M16	3.81	8.74	7.0	13.2	0.6	0.8
E1WF-C-S	20ss	M20	3.81	8.74	7.0	13.2	0.6	0.8
E1WF-C-S	20s	M20	8.0	11.79	8.0	15.8	0.6	0.8
E1WF-C-S	20R	M20	10.19	14.15	11.7	20.8	0.6	0.8
E1WF-C-S	20	M20	11.79	14.15	11.7	20.8	0.6	0.8
E1WF-C-S	25	M25	14.0	20.12	17.0	27.2	0.6	0.8
E1WF-C-S	32	M32	19.7	26.55	19.0	33.5	0.6	0.8
E1WF-C-S	40	M40	26.55	32.42	26.5	39.9	0.6	0.8
E1WF-C-S	50s	M50	32.42	38.39	38.0	46.3	0.6	0.8
E1WF-C-S	50	M50	38.39	44.33	36.0	52.6	0.6	0.8
E1WF-C-S	63s	M63	44.33	50.27	50.0	58.9	0.6	0.8
E1WF-C-S	63	M63	50.27	56.24	46.5	65.3	0.6	0.8
E1WF-C-S	75s	M75	56.24	62.18	62.0	71.6	0.6	0.8
E1WF-C-S	75	M75	62.18	68.13	58.0	78.0	0.6	0.8
E1WF-C-S	85	M85	68.0	74.0	68.0	88.0	0.6	0.8

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## SCHEDULE

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#### E1XF-S ranges for wire braided cable

Gland Title	Gland Size	ISO Entry Thread	Under Armour Diameter (mm)		Outer Sheath Diameter (mm)		Braid Range (mm)	
			Min	Max	Min	Max	Min	Max
E1XF-S	16	M16	3.81	8.74	7.0	13.2	0.2	0.3
E1XF-S	20ss	M20	3.81	8.74	7.0	13.2	0.2	0.3
E1XF-S	20s	M20	8.0	11.79	8.0	15.8	0.2	0.3
E1XF-S	20R	M20	10.19	14.15	11.7	20.8	0.2	0.3
E1XF-S	20	M20	11.79	14.15	11.7	20.8	0.2	0.3
E1XF-S	25	M25	14.0	20.12	17.0	27.2	0.2	0.45
E1XF-S	32	M32	19.7	26.55	19.0	33.5	0.3	0.45
E1XF-S	40	M40	26.55	32.42	26.5	39.9	0.3	0.45
E1XF-S	50s	M50	32.42	38.39	38.0	46.3	0.3	0.45
E1XF-S	50	M50	38.39	44.33	36.0	52.6	0.3	0.45
E1XF-S	63s	M63	44.33	50.27	50.0	58.9	0.3	0.45
E1XF-S	63	M63	50.27	56.24	46.5	65.3	0.3	0.45
E1XF-S	75s	M75	56.24	62.18	62.0	71.6	0.3	0.45
E1XF-S	75	M75	62.18	68.13	58.0	78.0	0.3	0.45
E1XF-S	85	M85	68.0	74.0	68.0	88.0	0.3	0.45

#### E1ZF-S ranges for steel tape armoured cables

Gland Title	Gland Size	ISO Entry Thread	Under Armour Diameter (mm)		Outer Sheath Diameter (mm)		Steel Tape Range (mm)	
			Min	Max	Min	Max	Min	Max
E1ZF-S	16	M16	3.81	8.74	7.0	13.2	0.15	0.35
E1ZF-S	20ss	M20	3.81	8.74	7.0	13.2	0.15	0.35
E1ZF-S	20s	M20	8.0	11.79	8.0	15.8	0.15	0.35
E1ZF-S	20R	M20	10.19	14.15	11.7	20.8	0.15	0.5
E1ZF-S	20	M20	11.79	14.15	11.7	20.8	0.15	0.5
E1ZF-S	25	M25	14.0	20.12	17.0	27.2	0.15	0.5
E1ZF-S	32	M32	19.7	26.55	19.0	33.5	0.15	0.55
E1ZF-S	40	M40	26.55	32.42	26.5	39.9	0.2	0.6
E1ZF-S	50s	M50	32.42	38.39	38.0	46.3	0.5	0.8
E1ZF-S	50	M50	38.39	44.33	36.0	52.6	0.5	0.8
E1ZF-S	63s	M63	44.33	50.27	50.0	58.9	0.5	0.8
E1ZF-S	63	M63	50.27	56.24	46.5	65.3	0.5	0.8
E1ZF-S	75s	M75	56.24	62.18	62.0	71.6	0.5	0.8
E1ZF-S	75	M75	62.18	68.13	58.0	78.0	0.5	0.8
E1ZF-S	85	M85	68.0	74.0	67.5	88.0	0.5	0.8

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14 **DESCRIPTIVE DOCUMENTS**

14.1	Drawing	Sheet	Rev	Date	Title
	SIRA0005	1 of 1	1	15 Apr 02	ATEX CERTIFIED E TYPE IP68 CABLE GLANDS
	SIRA41315ES	1 of 1	1	15 Apr 02	E TYPE IP68 ARMOUR CONE S.T.A./BRAID
	SIRA41401ES	1 of 1	1	15 Apr 02	E TYPE IP68 ARMOUR RINGS FOR S.W.A./A.W.A.
	SIRA41408ES	1 of 1	1	15 Apr 02	E TYPE IP68 ARMOUR RINGS FOR CONTINENTAL WIRE
	SIRA41413ES	1 of 1	1	15 Apr 02	E TYPE IP68 GLAND ARMOUR RINGS FOR STEEL TAPE
	SIRA41414ES	1 of 1	1	15 Apr 02	E TYPE IP68 GLAND ARMOUR RINGS FOR WIRE BRAID
	SIRA41523	1 of 1	1	15 Apr 02	E TYPE IP68 GLAND BARREL
	SIRA41605ES	1 of 1	1	15 Apr 02	E TYPE IP68 GLAND OUTER SEALS
	SIRA41701ES	1 of 1	1	15 Apr 02	E TYPE IP68 GLAND SKID WASHERS
	SIRA41806ES	1 of 1	1	15 Apr 02	E TYPE IP68 GLAND NUT
	SIRA43017	1 of 1	1	15 Apr 02	IP68 TYPE E GLAND BODIES
	SIRA41103ES	1 of 1	1	15 Apr 02	E TYPE IP68 INNER SEALS
	SIRA41301ES	1 of 1	1	15 Apr 02	E TYPE IP68 ARMOUR CONE SWA/AWA

14.2 Report No. R51A8796A

15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)

15.1 The cable glands shall only be used where the temperature at the point of mounting is within the range -20°C TO +90°C.

15.2 The cable glands shall not be used with flameproof enclosures of Group IIC with a volume greater than 2000 cm<sup>3</sup>.

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in Report No. R51A8796A.

17 **CONDITIONS OF CERTIFICATION**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of SCS Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

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