



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 04ATEX1080X** Issue: **4**

4 Equipment: **Barr-* Ranges of Cable Glands**

5 Applicant: **Prysmian Cables & Systems Limited**

6 Address: **Oak road
Wrexham Industrial Estate
Wrexham
LL13 9PH
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 the confidential reports listed in Section 14.2.

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 60079-0:2006
EN 60079-7:2007

EN 60079-1:2007

EN 61241-0:2006
EN 61241-1:2004

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 2 GD
Ex d IIC/Ex e II
Ex tD A21 IP66

C Ellaby
Deputy Certification Manager

Project Number 24796
C. Index 07

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13 DESCRIPTION OF EQUIPMENT

Barr-A Range of Cable Glands

The Barr-A Range of Cable Glands are metallic in construction. They are intended to terminate circular unarmoured cables into flameproof or increased safety enclosures without compromising the explosion protection provided by the enclosures, in accordance with relevant codes of practice.

Each gland consists of a male-threaded front entry component that is intended to mount into an entry point of its associated enclosure, this is designated the gland body and is fitted with a ferrule such that a spigot joint is formed. The ferrule contains a filling compound that effects a flameproof seal around the cable cores passing through it.

The gland coupler threads onto the gland body and houses a retainer that holds the ferrule in position, a pair of fibre skid washers, a polychloroprene seal and a seal housing. The skid washers and the polychloroprene seal effect environmental protection onto the cable outer sheath when the gland coupler is tightened onto the gland body.

The gland and seal sizes are determined by the entry thread and cable range take sizes (all dimensions in millimetres)

Gland Size	Cable Dimensions			
	Max. Ø Over Conductors	Max. No. Of Conductors	Outer Sheath Ø	
			Min	Max
20	11.0	30	8.9	15.7
25	16.0	42	13.0	19.3
32	22.1	60	17.0	25.4
40	28.2	100	24.1	30.0
50	37.1	200	29.0	41.9
63	48.4	400	40.9	52.8
75	58.6	400	49.8	59.9
85	65.8	400	58.9	73.9

Barr-C Range of Cable Glands

The Barr-C Range of Cable Glands are metallic in construction. They are intended to terminate circular, corrugated metal clad or interlocking strip armoured cables into flameproof or increased safety enclosures without compromising the explosion protection provided by the enclosures, in accordance with relevant codes of practice.

Each gland consists of a male-threaded front entry component that is intended to mount into an entry point of its associated enclosure, this is designated the gland body and is fitted with a ferrule such that a spigot joint is formed. The ferrule contains a filling compound that effects a flameproof seal around the cable cores passing through it.

The gland coupler threads onto the gland body and houses a retainer that holds the ferrule in position, a continuity clip, a pair of fibre skid washers, a polychloroprene seal and a seal housing. The skid washers and the polychloroprene seal effect environmental protection onto the cable outer sheath when the gland coupler is tightened onto the gland body.

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The gland and seal sizes are determined by the entry thread and cable range take sizes (all dimensions in millimetres)

Gland Size	Cable Dimensions					
	Max. Ø Over Conductors	Max. No. Of Conductors	Over Armour Ø		Outer Sheath Ø	
			Min	Max	Min	Max
20	11.0	30	7.6	12.7	8.9	15.7
25	16.0	42	11.9	17.3	13.0	19.3
32	22.1	60	16.0	22.1	17.0	25.4
40	28.2	100	21.0	26.9	24.1	30.0
50	37.1	200	25.9	38.6	29.0	41.9
63	48.4	400	37.6	48.0	40.9	52.8
75	58.6	400	45.9	55.9	49.8	59.9
85	65.8	400	54.8	70.1	58.9	73.9

Barr-PB* Ranges of Cable Glands

The Barr-PB* Ranges of Cable Glands are metallic in construction. They are intended to terminate circular, lead sheathed cables into flameproof or increased safety enclosures without compromising the explosion protection provided by the enclosures, in accordance with relevant codes of practice.

The glands are intended for use with the following cable forms:

- Barr-PB - Steel wire armoured and aluminium wire armoured cables
- Barr-PBC - Continental wire armour and strip wire armoured cables
- Barr-PBS - Steel wire armoured and aluminium wire armoured cables with a reduced wire diameter
- Barr-PBX - Wire braided cables
- Barr-PBZ - Steel tape armoured cables

Each gland consists of a male-threaded front entry component that is intended to mount into an entry point of its associated enclosure, this is designated the gland body and is fitted with a ferrule such that a spigot joint is formed. The ferrule contains a filling compound that effects a flameproof seal around the cable cores passing through it.

The gland barrel threads onto the gland body and houses the different armour clamping rings and cones that differentiate between the ranges and a continuity clip. The armour clamping rings effect clamping of the cable armour or braid onto the armour cones when the gland barrel is tightened onto the gland body. An outer seal gland nut, fitted with a fibre skid washer and a polychloroprene seal, screws onto the gland barrel effecting environmental sealing onto the outer sheath of the cable.



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The gland and seal sizes are determined by the entry thread and cable range take sizes (all dimensions in millimetres)

Gland Size	Cable					
	Max. Ø Over Conductors	Max. No Of Conductors	Over Lead Sheath Ø		Outer Sheath Ø	
			Min	Max	Min	Max
20S	11.0	30	7.0	9.5	8.0	15.8
20	11.0	30	8.0	12.0	11.7	20.8
25	16.0	42	11.0	17.0	17.0	27.2
32	22.1	60	15.5	23.2	19.0	33.5
40	28.2	100	22.5	29.0	26.5	39.9
50	37.1	200	28.5	40.0	36.0	52.6
63	48.4	400	39.0	51.8	46.5	65.3
75	58.6	400	51.5	64.0	58.0	78.0
85	65.8	400	63.0	70.0	68.0	88.0

Gland Size	Armour									
	S.W.A. & A.W.A.		S.W.A. & A.W.A. •		Continental Wire/Strip,		Braid		Steel Tape,	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
20S	0.9	1.4	-	-	0.6	0.8	0.2	0.3	0.15	0.35
20	0.9	1.4	-	-	0.6	0.8	0.2	0.3	0.15	0.5
25	1.25	1.6	0.9	1.25	0.6	0.8	0.2	0.45	0.15	0.5
32	1.6	2.0	1.25	1.6	0.6	0.8	0.3	0.45	0.15	0.55
40	1.6	2.0	-	-	0.6	0.8	0.3	0.45	0.2	0.6
50	2.0	2.5	1.6	-	0.6	0.8	0.3	0.45	0.5	0.8
63	2.5	-	-	-	0.6	0.8	0.3	0.45	0.5	0.8
75	2.5	3.15	-	-	0.6	0.8	0.3	0.45	0.5	1.0
85	2.5	3.15	-	-	0.6	0.8	0.3	0.45	0.5	1.0

- Common range take glands with smaller armour diameter sizes for Barr-PBS designs only.
- , Armour dimensions are a measure of thickness, whereas all other armour type dimensions are a measure of diameter.

Barr-W, Barr-WC, Barr-X & Barr-Z Ranges of Cable Glands

The Barr-W, Barr-WC, Barr-X & Barr-Z Ranges of Cable Glands are metallic in construction. They are intended to terminate circular cables into flameproof or increased safety enclosures without compromising the explosion protection provided by the enclosures, in accordance with relevant codes of practice.

The glands are intended for use with the following cable forms:

- Barr-W - Steel wire armoured and aluminium wire armoured cables
- Barr-WC - Continental wire armour and strip wire armoured cables
- Barr-X - Wire braided cables
- Barr-Z - Steel tape armoured cables

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Each gland consists of a male-threaded front entry component that is intended to mount into an entry point of its associated enclosure, this is designated the gland body and is fitted with a ferrule such that a spigot joint is formed. The ferrule contains a filling compound that effects a flameproof seal around the cable cores passing through it.

The gland barrel threads onto the gland body and houses the different armour clamping rings and cones that differentiate between the ranges. The armour clamping rings effect clamping of the cable armour or braid onto the armour cones when the gland barrel is tightened onto the gland body. An outer seal gland nut, fitted with a fibre skid washer and a polychloroprene seal, screws onto the gland barrel effecting environmental sealing onto the outer sheath of the cable.

The gland and seal sizes are determined by the entry thread and cable range take sizes (all dimensions in millimetres)

Gland Size	Cable					
	Max. Ø Over Conductors	Max. No Of Conductors	Over Inner Sheath Ø		Outer Sheath Ø	
			Min	Max	Min	Max
20S	11.0	30	-	12.5	8.0	15.8
20	11.0	30	-	12.5	11.7	20.8
25	16.0	42	11.5	18.0	17.0	27.2
32	22.1	60	17.0	25.0	19.0	33.5
40	28.2	100	24.0	31.5	26.5	39.9
50	37.1	200	30.0	41.5	36.0	52.6
63	48.4	400	40.0	54.0	46.5	65.3
75	58.6	400	53.0	65.5	58.0	78.0
85	65.8	400	60.0	74.0	68.0	88.0

Gland Size	Armour							
	S.W.A. & A.W.A.		Continental Wire/Strip•		Braid		Steel Tape•	
	Min	Max	Min	Max	Min	Max	Min	Max
20S	0.9	1.4	0.6	0.8	0.2	0.3	0.15	0.35
20	0.9	1.4	0.6	0.8	0.2	0.3	0.15	0.5
25	1.25	1.6	0.6	0.8	0.2	0.45	0.15	0.5
32	1.6	2.0	0.6	0.8	0.3	0.45	0.15	0.55
40	1.6	2.0	0.6	0.8	0.3	0.45	0.2	0.6
50	2.0	2.5	0.6	0.8	0.3	0.45	0.5	0.8
63	2.5	-	0.6	0.8	0.3	0.45	0.5	0.8
75	2.5	3.15	0.6	0.8	0.3	0.45	0.5	1.0
85	2.5	3.15	0.6	0.8	0.3	0.45	0.5	1.0

- Armour dimensions are a measure of thickness, whereas all other armour type dimensions are a measure of diameter.



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Design Options

The following design options apply to all the gland ranges:

- Alternative metallic materials of manufacture: Brass to BS 2874:1986 Grades CZ121, CZ122 or better
Mild steel to BS 970: Part 1:1991
Stainless steel to BS 970: Part 4:1987
Aluminium to BS 1471:1972 Grade 6082-T6,
BS 1474:1987 Grade 6082-T6 or better

Alternative skid washer materials of manufacture: Nylon 6

The same material as the glands

- All metallic materials may be additionally surface coated to limit any electrolytic reaction between similar materials.
- Alternative entry threadforms that are within the dimensional parameters of the gland body and that maintain compliance with the requirements of clause 5.3 of IEC/EN 60079-1:2007.

Variation 1 - This variation introduced the following changes:

- i. A change of the Applicant's name on the certificate from Pirelli Cables Limited to Prysmian Cables & Systems Limited.

Variation 2 - This variation introduced the following changes:

- i. The Barr-W, Barr-WC & Barr-Z Ranges of Cable Glands currently approved with an NPT threaded spigot to be manufactured from a dedicated new front entry component used in conjunction with a dedicated new ferrule component.
- ii. The recognition of minor drawing modifications; these changes are administrative and do not affect the aspects of the product that are relevant to explosion safety.

Variation 3 - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance, the originally listed standards EN 50014:1997 (+A1 and A2), EN 50018:2000 (amendment A1), EN 50019:2000 and EN 50281-1:1998 were replaced by those currently listed, the markings in section 12 were updated accordingly and the conditions were modified to recognise the requirements of the latest standards.

Variation 4 - This variation introduced the following changes:

- i. The label was modified to allow the trade mark 'DRAKA' to be used as an alternative to the existing 'BICON' trade mark, the reference to the 'BICON' trade mark was removed from the Applicant's details.
- ii. The reduced marking criteria was clarified and included in the Conditions of Certification.



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14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	6 July 2004	R51A10422A	The release of the prime certificate.
1	16 May 2006	R51A14278A	The introduction of Variation 1.
2	14 April 2008	R51A18080A	This Issue covers the following changes: <ul style="list-style-type: none">All previously issued certification was rationalised into a single certificate, Issue 2, Issues 0 to 1 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.The introduction of Variation 2.
3	23 August 2010	R21784A/00	The introduction of Variation 3.
4	27 July 2011	R24796A/00	The introduction of Variation 4.

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

- 15.1 The equipment shall only be used where the temperature, at the point of entry, is in the range -60°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 cm³

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 the reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira 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.
- 17.3 Reduced marking criteria are applicable to this equipment, therefore, the Applicant shall apply the information required by the associated Sira reports on the packaging supplied with these products, this shall include the name and address of Prysmian Cables & Systems Limited.

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Certificate Annexe

Certificate Number: Sira 04ATEX1080X
Equipment: Barr-* Ranges of Cable Glands
Applicant: Prysmian Cables & Systems Limited



Issue 0

Barr-A & Barr-C Ranges of Cable Glands

Drawing No.	Sheets	Rev.	Date	Description
SIRA0010	1 of 1	1	17 Mar 04	ATEX Certified Barrier Glands For Unarmoured & Corrugated Or Interlocking Armour Cables
SIRA41314	1 of 1	1	16 Mar 04	Unarmoured & Corrugated Or Interlocking Armour Cable Barrier Gland Retainer
SIRA41514	1 of 1	1	16 Mar 04	Unarmoured & Corrugated Or Interlocking Armour Cable Barrier Gland Coupler
SIRA41605U	1 of 1	1	11 Mar 04	Unarmoured & Corrugated Or Interlocking Armour Cable Barrier Gland Outer Seals
SIRA41714	1 of 1	1	15 Mar 04	Unarmoured & Corrugated Or Interlocking Armour Cable Barrier Gland Skid Washers
SIRA41814	1 of 1	1	15 Mar 04	Unarmoured & Corrugated Or Interlocking Armour Cable Barrier Seal Housing
SIRA41911U	1 of 1	1	11 Mar 04	Unarmoured & Corrugated Or Interlocking Armour Cable Barrier Gland Ferrule
SIRA42410U	1 of 1	1	08 Jun 04	Unarmoured & Corrugated Or Interlocking Armour Cable Gland Sealing Compounds
SIRA42440	1 of 1	1	14 Apr 04	Corrugated Or Interlocking Armour Cable Barrier Gland Retainer Sub-Assembly
SIRA43122U	1 of 1	1	11 Mar 04	Unarmoured & Corrugated Or Interlocking Armour Cable Barrier Gland Body

Barr-PB, Barr-PBC, Barr-PBS, Barr-PBX & Barr-PBZ Ranges of Cable Glands

Drawing No.	Sheets	Rev.	Date	Description
SIRA0009	1 of 1	1	16 Mar 04	ATEX Certified Barrier Glands For Lead Sheathed Cables
SIRA41308	1 of 1	1	03 Mar 04	Lead Sheathed Cable Barrier Gland Armour Cone (Steel, Aluminium & Continental Wire Armour)
SIRA41311	1 of 1	1	05 Mar 04	Lead Sheathed Cable Barrier Gland Armour Cone (Steel, Tape Armour & Wire Braid)
SIRA41401PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Armour Ring (Steel & Aluminium Wire Armour)
SIRA41408PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Armour Ring (Continental Wire Armour)
SIRA41413PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Armour Ring (Steel Tape Armour)
SIRA41414PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Armour Ring (Wire Braid Armour)
SIRA41504PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Barrel
SIRA41605PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Outer Seals
SIRA41701PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Skid Washers
SIRA41806PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Nut
SIRA41911PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Ferrule
SIRA42410PB	1 of 1	1	08 Jun 04	Lead Sheathed Cable Gland Sealing Compound
SIRA42427	1 of 1	1	14 Apr 04	Lead Sheathed Cable Barrier Gland Armour Cone Sub-Assembly
SIRA43122PB	1 of 1	1	01 Mar 04	Lead Sheathed Cable Barrier Gland Body

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Certificate Annexe

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Equipment: Barr-* Ranges of Cable Glands
Applicant: Prysmian Cables & Systems Limited



Barr-W, Barr-WC, Barr-X & Barr-Z Ranges of Cable Glands

Drawing No.	Sheets	Rev.	Date	Description
SIRA0008	1 of 1	1	16 Mar 04	ATEX Certified Barrier Glands For Armoured & Braided Cables
SIRA41304B	1 of 1	1	27 Jan 04	Armoured & Braided Cable Barrier Gland Armour Cone (Steel, Aluminium & Continental Wire Armour)
SIRA41309B	1 of 1	1	27 Jan 04	Armoured & Braided Cable Barrier Gland Armour Cone (Steel Tape Armour & Wire Braid)
SIRA41401B	1 of 1	1	27 Jan 04	Armoured & Braided Cable Barrier Gland Armour Ring (Steel & Aluminium Wire Armour)
SIRA41408B	1 of 1	1	27 Jan 04	Armoured & Braided Cable Barrier Gland Armour Ring (Continental Wire Armour)
SIRA41413B	1 of 1	1	27 Jan 04	Armoured & Braided Cable Barrier Gland Armour Ring (Steel Tape Armour)
SIRA41414B	1 of 1	1	27 Jan 04	Armoured & Braided Cable Barrier Gland Armour Ring (Wire Braid Armour)
SIRA41504B	1 of 1	1	28 Jan 04	Armoured & Braided Cable Barrier Gland Barrel
SIRA41605B	1 of 1	1	27 Jan 04	Armoured & Braided Cable Barrier Gland Outer Seals
SIRA41701B	1 of 1	1	27 Jan 04	Armoured & Braided Cable Barrier Gland Skid Washers
SIRA41806B	1 of 1	1	28 Jan 04	Armoured & Braided Cable Barrier Gland Nut
SIRA41911B	1 of 1	1	23 Jan 04	Armoured & Braided Cable Barrier Gland Ferrule
SIRA42410B	1 of 1	1	08 Jun 04	Armoured & Braided Cable Barrier Gland Sealing Compounds
SIRA43122B	1 of 1	1	01 Mar 04	Armoured & Braided Cable Barrier Gland Body

Issue 1

No new drawings were introduced with the issue

Issue 2

Drawing No	Sheet	Rev.	Date (Sira stamp)	Description
SIRA008	1 of 1	2	07 Apr 08	ATEX certified Barrier Gland for armoured & braided cables
SIRA41911B	1 of 2	2	07 Apr 08	Armoured & braided cables barrier gland metric ferrule
SIRA41911B	2 of 2	2	07 Apr 08	Armoured & braided cables barrier gland NPT ferrule
SIRA43122B	1 of 2	2	07 Apr 08	Armoured & braided cables barrier gland metric body
SIRA43122B	2 of 2	2	07 Apr 08	Armoured & braided cables barrier gland NPT body

Issue 3

Barr-A & Barr-C Ranges of Cable Glands

Drawing No.	Sheets	Rev.	Date (Sira Stamp)	Description
SIRA0010	1 of 1	2	12 Aug 10	ATEX Certified Barrier Glands For Unarmoured & Corrugated Or Interlocking Armour Cables

Barr-PB, Barr-PBC, Barr-PBS, Barr-PBX & Barr-PBZ Ranges of Cable Glands

Drawing	Sheets	Rev.	Date (Sira Stamp)	Description
SIRA0009	1 of 1	2	12 Aug 10	ATEX Certified Barrier Glands For Lead Sheathed Cables

Barr-W, Barr-WC, Barr-X & Barr-Z Ranges of Cable Glands

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
SIRA0008	1 of 1	3	12 Aug 10	ATEX Certified Barrier Glands For Armoured & Braided Cables

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Certificate Number: Sira 04ATEX1080X
Equipment: Barr-* Ranges of Cable Glands
Applicant: Prysmian Cables & Systems Limited



Issue 4

Barr-A & Barr-C Ranges of Cable Glands

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
SIRA0010	1 of 1	3	30 Jun 11	ATEX Certified Barrier Glands For Unarmoured & Corrugated Or Interlocking Armour Cables

Barr-PB, Barr-PBC, Barr-PBS, Barr-PBX & Barr-PBZ Ranges of Cable Glands

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
SIRA0009	1 of 1	3	30 Jun 11	ATEX Certified Barrier Glands For Lead Sheathed Cables

Barr-W, Barr-WC, Barr-X & Barr-Z Ranges of Cable Glands

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
SIRA0008	1 of 1	4	30 Jun 11	ATEX Certified Barrier Glands For Armoured & Braided Cables

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