



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SIR 07.0098X issue No.:4
Status: **Current**
Date of Issue: 2011-09-12 Page 1 of 4

Certificate history:
Issue No. 4 (2011-9-12)
Issue No. 3 (2011-2-15)
Issue No. 2 (2010-4-29)
Issue No. 1 (2009-9-23)
Issue No. 0 (2007-11-21)

Applicant: **Peppers Cable Glands Limited**
Stanhope Road
Camberley
Surrey GU15 3BT
United Kingdom

Electrical Apparatus: **CR**** Range of Barrier Cable Glands and Stopper Boxes**
Optional accessory:

Type of Protection: **Flameproof, Increased Safety, Restricted Breathing and Dust**

Marking: **Ex d I Mb
Ex e I Mb
Ex d IIC Gb
Ex e IIC Gb
Ex nR IIC Gc
Ex ta IIIC Da IP 66 / IP 68
Ta = -60°C to +135°C**

Approved for issue on behalf of the IECEx
Certification Body:

C Ellaby

Position:

Deputy Certification Manager

Signature:
(for printed version)

Date:

2011-09-12

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

SIRA Certification Service
Rake Lane
Eccleston
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United Kingdom

sira
CERTIFICATION



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Manufacturer: **Peppers Cable Glands Limited**
Stanhope Road
Camberley
Surrey GU15 3BT
United Kingdom

Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2007-10 Edition: 5	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-15 : 2010 Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-31 : 2008 Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/SIR/ExTR07.0132/00	GB/SIR/ExTR09.0152/00	GB/SIR/ExTR10.0076/00
GB/SIR/ExTR11.0008/00	GB/SIR/ExTR11.0236/00	

Quality Assessment Report:

GB/SIR/QAR06.0018/00	GB/SIR/QAR06.0018/01	GB/SIR/QAR06.0018/03
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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

All cable gland families and stopper box ranges manufactured by Pepper's Cable Gland's Limited have type code designations. These are shown in a matrix detailed in the manufacturer's documents, they are also shown in the manufacturer's instruction leaflets for the end user. These codes are unique to each and every cable gland and stopper box, and identify the various design options applicable to each cable gland family and stopper box range. A full description of the CR**** Barrier Cable Gland Range and Stopper Box Range can be found in the Annex to this Certificate.

CONDITIONS OF CERTIFICATION: YES as shown below:

- 1 The cable glands/stopper boxes shall not be used in enclosures where the temperature, at the point of entry/mounting, is outside of the range -60°C to +135°C.
- 2 The Ingress Protection rating that is required to ensure compliance with the standards used in this certificate was determined by testing the devices fitted into a representative enclosure having a smooth flat mounting surface. In practice, the interface between the male thread of the glands and their associated enclosure cannot be defined therefore, it is the user's responsibility to ensure that the appropriate Ingress Protection level is maintained at these interfaces.
- 3 When glands without sealing rings are installed in an explosive dust atmosphere, they shall only be fitted into enclosures that have entries that will ensure that a minimum of 5 full threads of contact will be maintained, this is in accordance with clause 5.1.1 of IEC 60079-31:2008.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1 – this Issue introduced the following change:	
1.	The ambient temperature limit was lowered from -20°C to -60°C.
Issue 2 – this Issue introduced the following changes:	
1.	The ambient temperature range was extended from -60°C to +85°C to -60°C to +135°C, the appropriate condition of certification being modified accordingly
2.	Following appropriate assessment to demonstrate compliance with IEC 60079-15:2005 Ed 3 and IEC 60079-7:2006 Ed 4, two, new protection codings, 'Ex nR IIC Gb' and 'Ex e IIC Gb' respectively, were recognised.
3.	The devices were certified against the later versions of the original standards, in consequence, IEC 60079-0:2004 Ed 4 was replaced by IEC 60079-0:2007 Ed 5, IEC 60079-1:2003 Ed 5 was replaced by EN 60079-1:2007 Ed 6 and IEC 60079-31:2008 Ed 1 replaced IEC 61241-0:2004 Ed 1 and IEC 61241-1:2004 Ed 1.
4.	The CR-S range was allowed to be used as a Reversible Line Bushing, Peppers part no. 88NMM Conduit Nut – Male.
5.	The drawings applicable to these changes, for both ATEX and IECEx certification, are rationalised into one series.
6.	The recognition of minor drawing modifications; these amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.
7.	The condition of certification associated with interface sealing was modified
Issue 3 – this Issue introduced the following changes:	
1.	An increase of the IP rating degree of protection to IPX8 at 100 m for 7 days.
2.	To allow the maximum number of cores permitted to be increase.
3.	The re-assessment of the dust marking to EPL 'Da'.
4.	Following appropriate re-assessment to demonstrate compliance, IEC 60079-15:2005 Ed 3 was replaced by IEC 60079-15:2010 Ed 4.
Issue 4 – this Issue introduced the following changes:	
1.	Typographical errors were corrected.

Annexe to: IECEx SIR 07.0098X Issue 4
Applicant: Peppers Cable Glands Limited
Electrical Apparatus: CR**** Barrier Cable Glands & Stopper Boxes



The **CR**** Range of Barrier Cable Glands & Stopper Boxes** are metallic and are intended for use with differing cables or conductors dependent on their type. They allow the entry of the cable or conductors into flameproof, increased safety, restricted breathing and dust protected enclosures without compromising the explosion protection provided by the enclosure, in accordance with relevant codes of practice. All types comprise of various entry thread sizes, which are dependent upon gland size and their cable sealing ability range.

The CR**** Range of Barrier Cable Glands & Stopper Boxes, when installed with the silicone O-ring provided by the manufacturer, have an ingress protection rating of IP66 and IP68 (tested at a depth of 100 m for 7 days).

Design Options for all CR** Range of Barrier Cable Glands & Conduit Stopper Boxes**

Entry component and CR** conduit nut internal thread forms:**

ISO Metric to BS3643-1:2007 and BS3643-3:2007 6g fit (male) 6H (female)
NPT to ANSI/ASME B1.20.1:1983, gauging to clause 8
NPSM to ANSI/ASME B1.20.1:1983, gauging to clause 9
BSPT to BS 21:1985 (ISO 7/1) standard threads only clause 5.4, gauging to clause 5A, system A
BSPP to BS 2779:1986 (ISO 228/1) class A full form external threads
PG to DIN 40430:1971
ET to BS 31:1940 (1979) Table A

All entry and conduit threads are within the dimensional parameters of the gland body and comply with clause 5.3 of EN 60079-1:2007 and Clause C.2.2.

Alternative metallic materials of manufacture (the asterisk in the type number is replaced with a letter designation for one of the material types below):

Brass to BS 2874:1986 grades CZ121 (3Pb), or CZ121 (4Pb) or CZ122
Stainless Steel to BS 970:Part 1:1991 grades 316S11, 316S31, 316L or 304.

Additionally, all metallic materials may be surface coated to limit electrolytic reaction between dissimilar materials, providing the coating does not alter the dimensions of the component part.

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Annexe to: IECEx SIR 07.0098X Issue 4
Applicant: Peppers Cable Glands Limited
Electrical Apparatus: CR**** Barrier Cable Glands & Stopper Boxes



The **CR-U** Range of Barrier Cable Glands** are suitable for use with unarmoured cables; they comprise:

- a threaded entry body to tighten into an associated enclosure; this is fitted with a silicone O-ring and internally coated with a release agent
- a ferrule, fitted with an external nitrile O-ring, which fits into the entry body to make a part chamber into which a two-part "PEPPERS T1000" epoxy putty setting compound is applied to provide an inner seal around the conductors
- a union nut that couples the entry body and ferrule together
- a seal housing, enclosing a white silicone, elastomeric, cable outer sheath seal and a plastic skid washer, that is screwed and secured into the ferrule with adhesive
- a back nut that screws into the seal housing to compress the outer sheath seal

Standard Entry thread size	Gland size	Max. Ø over cores (mm)	Max. number of cores	Outer sheath seal range Ø (mm)	
				Min.	Max.
M20 x 1.5	16	10.4	15	3.4	8.4
M20 x 1.5	20S	10.4	35	4.8	11.7
M20 x 1.5	20	12.5	40	9.5	14.0
M25 x 1.5	25	17.8	60	11.7	20.0
M32 x 1.5	32	23.5	80	18.1	26.3
M40 x 1.5	40	28.8	130	22.6	32.2
M50 x 1.5	50S	34.2	200	28.2	38.2
M50 x 1.5	50	39.4	400	33.1	44.1
M63 x 1.5	63S	44.8	425	39.3	50.1
M63 x 1.5	63	50.0	425	46.7	56.0
M75 x 1.5	75S	55.4	425	52.3	62.0
M75 x 1.5	75	60.8	425	58.0	68.0
M80 x 2.0	80	64.4	425	61.9	72.0
M85 x 2.0	85	69.8	425	69.1	78.0
M90 x 2.0	90	75.1	425	74.1	84.0
M100 x 2.0	100	80.5	425	81.8	90.0

Design option:

- A brass continuity washer may be fitted in the 20S to 100 sizes that are used with lead inner sheathed cables, glands with this modification are designated with a '2' in their type number.

Additional assembly options are described by the following designation coding: -

Gland Type:	CR-U				
Available Part No's.:	C	R	U	*	*
				2	B
					S
Options:	2	Lead Sheath Cable Continuity Washer			
	B	Brass material			
	S	Stainless Steel material			

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Applicant: Peppers Cable Glands Limited
Electrical Apparatus: CR**** Barrier Cable Glands & Stopper Boxes



The **CR-X** Range of Barrier Cable Glands** are suitable for use with, unarmoured, braided and screened cables. They may also be used as a line bushing for terminating flying leads or for the direct inter-connection of associated enclosures; they comprise:

- a threaded entry body to tighten into an associated enclosure; this is fitted with a silicone O-ring and internally coated with a release agent
- a ferrule, fitted with an external nitrile O-ring, which fits into the entry body to make a part chamber into which a two-part "PEPPERS T1000" epoxy putty setting compound is applied to provide an inner seal around the conductors.
- a union nut that couples the entry body and ferrule together
- a back nut that is screwed and secured into the ferrule with adhesive.

Standard Entry thread size	Gland size	Max. Ø over cores (mm)	Max. number of cores	Max. outer sheath Ø (mm)
M20 x 1.5	20S	10.4	35	11.7
M20 x 1.5	20	12.5	40	14.0
M25 x 1.5	25	17.8	60	20.0
M32 x 1.5	32	23.5	80	26.3
M40 x 1.5	40	28.8	130	32.2
M50 x 1.5	50	39.4	400	44.1
M63 x 1.5	63	50.0	425	56.0
M75 x 1.5	75	60.8	425	68.0
M80 x 2.0	80	64.4	425	72.0
M85 x 2.0	85	69.8	425	78.0
M90 x 2.0	90	75.1	425	84.0
M100 x 2.0	100	80.5	425	90.0

Design option:

- A brass continuity washer may be fitted in the 20S to 100 sizes that are used with lead inner sheathed cables, glands with this modification are designated with a '2' in their type number.

Additional assembly options are described by the following designation coding: -

Gland Type:	CR-X				
Available Part Nos.:	C	R	X	*	*
				2	B
					S
Options:	2	Lead Sheath Cable Continuity Washer			
	B	Brass material			
	S	Stainless Steel material			

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The **CR-C**R Range of Barrier Cable Glands** are suitable for circular, pliable wire, single wire and steel tape armoured cables along with braided/screened and unarmoured cables.

The same components as the CR-C*** range, however, the cable outer sheath seal has a reduced bore size to accommodate an alternative range of outer sheath cable sizes and is red in colour.

Standard Entry Thread size	Gland size	Max. Ø over cores (mm)	Max. number of cores	Max. inner Sheath Ø (mm)	Outer sheath Ø (standard) (mm)		Max. Armour Ø /thickness	
					Min.	Max.	Min.	Max.
M20 x 1.5	16	10.4	15	11.7	6.7	10.3	0.15	1.25
M20 x 1.5	20S	10.4	35	11.7	9.4	12.5	0.15	1.25
M20 x 1.5	20	12.5	40	14.0	12.0	17.6	0.15	1.25
M25 x 1.5	25	17.8	60	20.0	16.8	23.9	0.15	1.6
M32 x 1.5	32	23.5	80	26.3	23.2	30.5	0.15	2.0
M40 x 1.5	40	28.8	80	32.2	28.6	36.2	0.2	2.0
M50 x 1.5	50S	34.2	130	38.2	34.8	42.4	0.2	2.5
M50 x 1.5	50	39.4	200	44.1	41.1	48.5	0.2	2.5
M63 x 1.5	63S	44.8	400	50.1	47.5	54.8	0.3	2.5
M63 x 1.5	63	50.0	400	56.0	53.8	61.2	0.3	2.5
M75 x 1.5	75S	55.4	425	62.0	60.2	68.0	0.3	2.5
M75 x 1.5	75	60.8	425	68.0	66.5	73.4	0.3	2.5
M80 x 2.0	80	64.4	425	72.0	-	-	0.45	3.15
M85 x 2.0	85	69.8	425	78.0	75.0	85.4	0.45	3.15
M90 x 2.0	90	75.1	425	84.0	-	-	0.45	3.15
M100 x 2.0	100	80.5	425	90.0	87.4	97.4	0.45	3.15

Design option:

- A brass continuity washer may be fitted in the 20S to 100 sizes that are used with lead inner sheathed cables, glands with this modification are designated with a '2' in their type number.
- The CR-C** may be used with of an alternative outer sheath seal that is red in colour and has a reduced bore size that accommodates an alternative range of outer sheath cable sizes; in this form, the glands are designated CX-C**R** (see details below):

Standard Entry Thread size	Gland size	Max. Ø over cores (mm)	Max. number of cores	Max. inner Sheath Ø (mm)	Outer sheath Ø (standard) (mm)		Braid Ø	
					Min.	Max.	Min.	Max.
M20 x 1.5	20S	10.4	35	11.7	9.4	12.5	0.15	0.35
M20 x 1.5	20	12.5	40	14.0	12.0	17.6	0.15	0.5

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Electrical Apparatus: CR**** Barrier Cable Glands & Stopper Boxes



The **CR-S* Range of Conduit Stopper Boxes** are suitable for use with conductors carried in conduit, providing a flameproof barrier entry into enclosures. Additionally they may be used to terminate flying leads and as a line bushing for providing an electrical connection between associated equipment; they comprise:

- a threaded entry body to tighten into an associated enclosure, this is fitted with a silicone O-ring and internally coated with a release agent
- a ferrule, fitted with an external nitrile O-ring, which fits into the entry body to make a part chamber into which a two-part "PEPPERS T1000" epoxy putty setting compound is applied to provide an inner seal around the conductors or flying leads.
- a union nut that couples the entry body and ferrule together
- a conduit nut that is screwed and secured into the ferrule with adhesive.

Entry thread size	Gland size	Max. Ø over cores (mm)	Max. number of cores	Max. Outer Ø sheath (mm)
M20 x 1.5	20	12.5	40	14.0
M25 x 1.5	25	17.8	60	20.0
M32 x 1.5	32	23.5	80	26.3
M40 x 1.5	40	28.8	130	32.2
M50 x 1.5	50	39.4	400	44.1
M63 x 1.5	63	50.0	425	56.0
M75 x 1.5	75	60.8	425	68.0
M80 x 2.0	80	64.4	425	72.0
M85 x 2.0	85	69.8	425	78.0
M90 x 2.0	90	75.1	425	84.0
M100 x 2.0	100	80.5	425	90.0

Additional assembly options are described by the following designation coding: -

Gland Type:	CR-S		
		B	F
		S	M
Options:	B	Brass material	
	S	Stainless Steel material	
	F	*Female Back End	
	M	Configuration	
		*Male Back End Configuration	
		*above applicable for CR-S range only.	