EU Type Examination Certificate CML 19ATEX1344X Issue 0

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **CR**** Range of Barrier Cable Glands and Stopper Boxes**

3 Manufacturer **Peppers Cable Glands Limited**

4 Address **Stanhope Road,**
Camberley, Surrey,
GU15 3BT
United Kingdom

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 CML B.V. , Chamber of Commerce No 6738671, Hoogoorddreef 15, Amsterdam, 1101 BA, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018
EN 60079-1:2014
EN IEC 60079-7:2015/A1:2018
EN 60079-31:2014

10 The equipment shall be marked with the following:

Ex I M 2
Ex db I Mb
Ex eb I Mb
(-60°C to 135°C)

Ex II 2 G D
Ex db IIC Gb
Ex eb IIC Gb
Ex tb IIIC Db
(-60°C to 135°C)

Ex II 1 D
Ex ta IIIC Da
(-60°C to 135°C)

A C Smith
Technical Operations Director

11 Description

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** glands and conduit stopper boxes:**

The entry component and conduit nut internal thread forms:

- ISO Metric to BS3643-1:2007 and BS 3643-3:2007 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 from external threads'
- PG to DIN 40430:1971
- ET to BS 31:1940 (1979) Table 'A'

Alternative material of construction is as follow and denoted by letter designation in the type number: -

- Brass to BS EN 12164 / BS EN 12165 / BS EN 12168 CW614N CuZn39Pb3
- Ecobrass to C69300
- Stainless Steel to EN 10088-3 grades 316S11, 316S31 316L

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.

The CR-U Range of Barrier Cable Glands** are suitable for use with unarmoured, braided and screened, circular 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 COMPOUND" 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.

Type CR – U** Compound – Filled Cable Glands:

Gland Size	Standard Entry Threads		Max Diameter Over Cores	Max No. of Cores	Outer Sheath	
	Metric	NPT			Min	Max
16	M20	½”	10.4	15	3.4	8.4
20S	M20	½”	10.4	35	4.8	11.7
20	M20	½”	12.5	40	9.5	14.0
25	M25	¾”	17.8	60	11.7	20.0
32	M32	1”	23.5	80	18.1	26.3
40	M40	1 ¼”	28.8	130	22.6	32.2
50S	M50	1 ½”	34.2	200	28.2	38.2
50	M50	2”	39.4	400	33.1	44.1
63S	M63	2”	44.8	400	39.3	50.1
63	M63	2 ½”	50.0	425	46.7	56.0
75S	M75	2 ½”	55.4	425	52.3	62.0
75	M75	3”	60.8	425	58.0	68.0
80	M80	3”	64.4	425	61.9	72.0
85	M85	3”	69.8	425	69.1	78.0
90	M90	3 ½”	75.1	425	74.1	84.0
100	M100	3 ½”	80.5	425	81.8	90.0

Design options:

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: -

Glands Type:	CR – U				
Available Part Numbers	C	R	U	*	*
				2	B
					S

Options:

2	Lead Sheath Cable Continuity Washer
B	Brass material
S	Stainless Steel material

The CR-X Range of Barrier Cable Glands** are suitable for use with, unarmoured, braided and screened, circular and non-circular 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 COMPOUND" 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.

Type CR – X** Compound filled Cable Glands

Gland Size	Standard Entry Threads		Max Diameter Over Cores	Max No. of Cores	Outer Sheath Max
	Metric	NPT			
20S	M20	½"	10.4	35	11.7
20	M20	½"	12.5	40	14.0
25	M25	¾"	17.8	60	20.0
32	M32	1"	23.5	80	26.3
40	M40	1 ¼"	28.8	130	32.2
50S	M50	1 ½"	34.2	200	38.2
50	M50	2"	39.4	400	44.1
63S	M63	2"	44.8	400	50.1
63	M63	2 ½"	50.0	425	56.0
75S	M75	2 ½"	55.4	425	62.0
75	M75	3"	60.8	425	68.0
80	M80	3"	64.4	425	72.0
85	M85	3"	69.8	425	78.0
90	M90	3 ½"	75.1	425	84.0
100	M100	3 ½"	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: -

Glands Type:	CR – X					
Available Part Numbers	C	R	X	*	*	
				2	B	
					S	

Options:	2	Lead Sheath Cable Continuity Washer
	B	Brass material
	S	Stainless Steel material

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

- A threaded entry body to tighten into an associated enclosure, this fitted with a silicone O-ring and internally coated with a release agent.
- A cone, fitted with an external nitrile O-ring, which fits into the entry component to make a part chamber into which a two part "PEPPERS T1000 COMPOUND" epoxy putty setting compound is applied to provide an inner seal around the conductors.
- A clamp ring that secures cable armour to the cone and also provides earth protection.
- A mid-cap component that fastens to the entry body to captivate the clamp ring, cone and epoxy putty.
- A back nut, enclosing a white, silicone, elastomeric, cable outer sheath seal and skid washer, that screws onto the external thread of the mid cap.

Type CR-C*** (inc CX-C***) Compound-Filled Cable Glands:

Gland Size	Standard Entry Threads		Max Ø Over Cores	Max No. of Cores	Inner Sheath	Outer Sheath		Reduced Bore		Armour Dia/Thickness (Universal)
	Metric	NPT			Max	Min	Max	Min	Max	
16	M20	½"	10.4	15	11.7	8.4	13.5	6.7	10.3	0.15 – 1.25
20S	M20	½"	10.4	35	11.7	11.5	16.0	9.4	12.5	*0.15 – 1.25
20	M20	½"	12.5	40	14.0	15.5	21.1	12.0	17.6	**0.15 – 1.25
25	M25	¾"	17.8	60	20.0	20.3	27.4	16.8	23.9	0.15 – 1.6
32	M32	1"	23.5	80	26.3	26.7	34.0	23.2	30.5	0.15 – 2.0
40	M40	1 ¼"	28.8	130	32.2	33.0	40.6	28.6	36.2	0.2 – 2.0
50S	M50	1 ½"	34.2	200	38.2	39.4	46.7	34.8	42.4	0.2 – 2.5
50	M50	2"	39.4	400	44.1	45.7	53.2	41.1	48.5	0.2 – 2.5
63S	M63	2"	44.8	400	50.1	52.1	59.5	47.5	54.8	0.3 – 2.5
63	M63	2 ½"	50.0	425	56.0	58.4	65.8	53.8	61.2	0.3 – 2.5

Gland Size	Standard Entry Threads		Max Ø Over Cores	Max No. of Cores	Inner Sheath	Outer Sheath		Reduced Bore		Armour Dia/Thickness (Universal)
	Metric	NPT			Max	Min	Max	Min	Max	
75S	M75	2 ½"	55.4	425	62.0	64.8	72.2	60.2	68.0	0.3 – 2.5
75	M75	3"	60.8	425	68.0	71.1	78.0	66.5	73.4	0.3 – 2.5
80	M80	3"	64.4	425	72.0	77.0	84.0	71.9	79.4	0.45 – 3.15
85	M85	3"	69.8	425	78.0	79.6	90.0	75.0	85.4	0.45 – 3.15
90	M90	3 ½"	75.1	425	84.0	88.0	96.0	82.0	91.4	0.45 – 3.15
100	M100	3 ½"	80.5	425	90.0	92.0	102.0	87.4	97.4	0.45 – 3.15

Design options:

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** size 20s and 20 cable glands to be used with an alternative, cone component; in this form, the glands are designated CX-C** (see details below) and are only suitable for braided cables.

Entry thread size	Gland Size	Max Ø Over Cores (mm)	Max No. of Cores	Max Inner Sheath (mm)	Outer Sheath (standard) (mm)		Braid dia.	
					Min	Max	Min	Max
M20 x 1.5	20S	10.4	8	11.7	11.5	16.0	0.15	0.35
M20 x 1.5	20	12.5	14	14.0	15.5	21.1	0.15	0.5

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):

Entry thread size	Gland Size	Max Ø Over Cores (mm)	Max No. of Cores	Max Inner Sheath (mm)	Outer Sheath (standard) (mm)		Braid dia.	
					Min	Max	Min	Max
M20 x 1.5	20S	10.4	8	11.7	9.4	12.5	0.15	0.35
M20 x 1.5	20	12.5	14	14.0	12.0	17.6	0.15	0.5

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

Glands Type:	CR – C						
Available Part Numbers	C	R	C	*	*	*	
				2	B S	R	
Options:	2	Lead Sheath Cable Continuity Washer					

B Brass material

S Stainless Steel material

R Reduced bore option

The CR-S* Range of Conduit Stopper Boxes are suitable for use with circular cables, non-circular cables or conductors carried in conduit, providing a flameproof barrier entry into enclosures. Additionally, they may 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 COMPOUND" 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.

Stopper Box Size	Standard Entry Threads		Max Cable Diameter	Max Ø over cores	Max no of Cores	Standard male connection thread size		Standard female connection thread sizes	
	Metric	NPT				Metric	NPT	Metric	NPT
20	M20	½"	14.0	12.5	40	M20	½"	M20	½"
25	M25	¾"	20.0	17.8	60	M25	¾"	M25	¾"
32	M32	1"	26.3	23.5	80	M32	1"	M32	1"
40	M40	1 ¼"	32.2	28.8	130	M40	1 ¼"	M40	1 ¼"
50S	M50	1 ½"	38.2	34.2	200	M50	1 ½"	M50	1 ½"
50	M50	2"	44.1	39.4	400	M50	2"	M50	2"
63S	M63	2"	50.1	44.8	400	M63	2"	M63	2"
63	M63	2 ½"	56.0	50.0	425	M63	2 ½"	M63	2 ½"
75S	M75	2 ½"	62.0	55.4	425	M75	2 ½"	M75	2 ½"
75	M75	-	68.0*	60.8*	425	M75	-	M75	2 ½" *
75	-	3"	68.0	60.8	425	-	3"	-	3"
80	M80	3"	72.0	64.4	425	M80	3"	M80	3"
85	M85	3"	78.0	69.8	425	M85	3"	M85	3"
90	M90	3 ½"	84.0	75.1	425	M90	3 ½"	M90	3 ½"
100	M100	3 ½"	90.0	80.5	425	M100	3 ½"	M100	3 ½"
Note:	2 ½" NPT thread option (Max Cable Diameter = 65.0) (Max Diameter over Cores = 58.1) *								
	2 ½" NPSM thread option (Max Cable Diameter = 67.0) (Max Diameter over Cores = 59.9) *								

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

Glands Type:	CR – S				
Available Part Numbers	C	R	S	*	*
				B	F
				S	M

Options:	B	Brass material
	S	Stainless Steel material
	F	Female conduit option
	M	Male conduit option

Notes:

Sira 03ATEX1479X, Sira 09ATEX4124X and IECEx SIR 07.0098X are superseded by certificates CML 19ATEX1344X, CML 19ATEX4114X and IECEx CML 19.0046X.

The product covered by Issue 0 of this certificate remains identical to that previously covered by Sira 03ATEX1479X, Sira 09ATEX4124X and IECEx SIR 07.0098X.

Where Sira 03ATEX1479X and/or Sira 09ATEX4124X and/or IECEx SIR 07.0098X is specified in other product certification, or other technical specifications, this certificate reference for the product shall be used in its place; updating of the other product certificate or technical specification is not required.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	10 Oct 2019	R12627A/00	The issue of the prime certificate

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of manufacture

None.

14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

14.1 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.

14.2 The interface seals comply with the requirements of the standards listed in this report when the cable glands are fitted to 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 users' responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces.

14.3 The threaded entry component threads without interface O-ring seals installed in an explosive dust atmosphere, within threaded entries, shall only be fitted into enclosures that have either:

- parallel entries that will ensure that a minimum of 5 full threads of contact will be maintained, this is in accordance with clause 5.1.2 of EN 60079-31:2014
- tapered entries that will ensure that a minimum of 3 ½ full threads of contact will be maintained, this is in accordance with clause 5.1.2 of EN 60079-31:2014

Certificate Annex

Certificate Number	CML 19ATEX1344X
Equipment	CR**** Range of Barrier Cable Glands and Stopper Boxes
Manufacturer	Peppers Cable Glands Limited

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
PCG/ATX/2M	1 of 1	11	10 Oct 19	ATEX Component Seal – Parts 2MI, 2MIS, 2MO, 2MOS, 2MOZS
PCG/ATX/5V	1 of 1	8	10 Oct 19	ATEX Component Middle Cap Part 5V
PCG/ATX/6M	1 of 1	6	10 Oct 19	ATEX Component Outer Cap Part 6M
PCG/ATX/10V	1 of 1	4	10 Oct 19	ATEX Component Clamp Ring Part 10V
PCG/ATX/11M	1 of 1	4	10 Oct 19	ATEX Component Skid Washer Parts 11MO
PCG/ATX/31V	1 of 1	9	10 Oct 19	ATEX Component Barrier Gland Entry Body Part 31V
PCG/ATX/31VT	1 of 1	10	10 Oct 19	ATEX Component Barrier Gland Entry Body – Tapered Threads Part 31VT
PCG/ATX/33V	1 of 1	9	10 Oct 19	ATEX Component Barrier Gland Cone Part 33V
PCG/ATX/33VX	1 of 1	4	10 Oct 19	ATEX Component Barrier Gland Cone Part 33VX – For Braided Cables
PCG/ATX/34V	1 of 1	4	10 Oct 19	ATEX Component Ferrule Part 34V
PCG/ATX/35V	1 of 1	6	10 Oct 19	ATEX Component Conduit nut, Metric Thread Part 35V
PCG/ATX/35VC	1 of 1	6	10 Oct 19	ATEX Component Conduit nut, Non-Standard Sizes & Threads Part 35VC
PCG/ATX/35VT	1 of 1	8	10 Oct 19	ATEX Component Conduit Nut, NPT Thread Part 35V
PCG/ATX/36V	1 of 1	5	10 Oct 19	ATEX Component Union Nut Part 36V
PCG/ATX/38V	1 of 1	5	10 Oct 19	ATEX Component Union Retaining Cap Part 38V
PCG/ATX/39V	1 of 1	8	10 Oct 19	ATEX Component Seal Housing Part 39V
PCG/ATX/81AN	1 of 1	7	10 Oct 19	ATEX Component Entry Body Part 81AN
PCG/ATX/82N	1 of 1	8	10 Oct 19	ATEX Component Seal Parts 82NI & 82NIS
PCG/ATX/82V	1 of 1	7	10 Oct 19	ATEX Component Seal Parts 82VIN & 82VIS

Certificate Annex

Certificate Number CML 19ATEX1344X

Equipment CR**** Range of Barrier Cable Glands and Stopper Boxes

Manufacturer Peppers Cable Glands Limited

Drawing No	Sheets	Rev	Approved date	Title
PCG/ATX/88N	1 of 1	9	10 Oct 19	ATEX Component Nut Part 88N
PCG/ATX/88NMM	1 of 1	7	10 Oct 19	ATEX Component Conduit Nut, Male Part 88NMM
PCG/ATX/91A	1 of 1	4	10 Oct 19	Component Skid Washer – Parts 91AS, 91AB, 91ABT
PCG/ATX/91V	1 of 1	6	10 Oct 19	ATEX Component Skid Washer – Parts 91V, 91VB, 91VBT
PCG/ATX/CR-C	1 of 1	10	10 Oct 19	ATEX Barrier Gland Range Barrier Glands for Armoured and Unarmoured Cable, CR-C Family
PCG/ATX/CR-S	1 of 1	8	10 Oct 19	ATEX Barrier Gland Range Conduit Stopper Box CR-S Family
PCG/ATX/CR-U	1 of 1	10	10 Oct 19	ATEX Barrier Gland Range Barrier Glands for Unarmoured Cable, CR-U and CR-X Families
PCG/ATX/PEXMP	1 of 1	4	10 Oct 19	Hazardous Area Approved Products – Marking Plan
PCG/ETDMV	1 of 1	9	10 Oct 19	Standard Thread Chart ATEX Certified Glands Using “M”, “V” & “N” Components
PCG/ETOR	1 of 1	12	10 Oct 19	Accessory Component Entry Thread O-ring Seal Part OR
PCG/ETRO	1 of 1	3	10 Oct 19	Entry Thread Components Run Out Specification Parts – 1M, 1MIE, 1V, 31UL, 31V, 61M, 81AN, AR & SP
PCG/LW1	1 of 1	7	10 Oct 19	Accessory Component Continuity Washer Part LW1
PCG/MATS/SB	1 of 1	5	10 Oct 19	Standard Materials ATEX Certified Glands Using “M”, “V” and “N” Components
PCG/OR	1 of 1	15	10 Oct 19	Accessory Component O-ring Seal CR & UL Barrier Cable Gland & RA Range Internal O-ring Seals
PCG/ORGD	1 of 1	7	10 Oct 19	Component Male Threaded Entry Component O-ring Groove Detail