# 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 07.0097X

Issue No: 2

Certificate history:
Issue No. 2 (2018-05-29)
Issue No. 1 (2012-12-20)
Issue No. 0 (2007-11-21)



Status: **Current**

Date of Issue: **2018-05-29**

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

Equipment: **E****F*, D****F and C****E* Cable Gland Ranges**
*Optional accessory:*

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

Marking:

E****F* and D****F
Ex db IIC Gb
Ex eb IIC Gb
Ex ta IIIC Da

C****E*
Ex eb IIC Gb
Ex ta IIIC Da.

*Approved for issue on behalf of the IECEx Certification Body:* C Ellaby

*Position:* Deputy Certification Manager

*Signature:*
*(for printed version)*

*Date:* 2018-29-05

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.

Certificate issued by:

**SIRA Certification Service**
**CSA Group**
**Unit 6, Hawarden Industrial Park**
**Hawarden, Deeside, CH5 3US**
**United Kingdom**

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

Additional 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 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 : 2011** Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| **IEC 60079-1 : 2014-06** Edition:7.0 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" |
| **IEC 60079-31 : 2013** Edition:2 | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |
| **IEC 60079-7 : 2015** Edition:5.0 | 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/ExTR12.0253/00 GB/SIR/ExTR18.0075/00

Quality Assessment Report:

GB/SIR/QAR06.0018/00

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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 E****F*, D****F and C****E* Cable Gland Ranges can be found in the Annexe to this Certificate.

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

Refer to the Annexe

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

Refer to the Annexe

**Annex:**

IECEx SIR 07.0097X Annexe Iss 2.pdf

The E****F*, D****F and C****E* ranges of cable glands are intended for use with SWA/Woven Steel Wire/Steel Tape/Braid armoured cables. Each comprises a threaded entry body, elastomeric sealing ring, armour cone, clamp ring and compression cap. The entry body is available with an optional outer deluge seal or an integral earthing clamp. D****F glands have a single flameproof seal and the E****F* glands have a double seal arrangement of flameproof and outer IP seal with extra compression cap and skid washer to suit. C****E* glands have only the outer IP seal arrangement. Seals are available in silicone and neoprene. Each gland type is available with an optional earth clamp arrangement on the entry body.

Glands are available in the size range 16 to 100 with ISO metric entry threads of M16 to M100 respectively. Alternative thread forms and sizes ISO metric, NPT, NPSM, BSPT, BSPP, PG and ET are available. The E****F*, and D****F glands have an ingress protection rating of IP66 and IP68 (50 metres 7 days) and the C****E* glands have an IP66 rating.

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

Gland Type: **E****F***

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Available Part No's.: | **E** | * | * | * | * | **F** | * |
| | | 1 | W | A | IE | | R |
| | | 2 | X | B | | | |
| | | 3 | | S | | | |
| | | 4 | | | | | |

| Options: | | |
|---|---|---|
| | 1 | Neoprene Seals |
| | 2 | Neoprene Seal with Lead Sheath Cable Continuity Washer |
| | 3 | Silicone Seal |
| | 4 | Silicone Seal with Lead Sheath Cable Continuity Washer |
| | W | Steel Wire Armour option |
| | X | SWA/Woven Steel Wire/Steel Tape/Braid |
| | A | Aluminium material |
| | B | Brass material |
| | S | 316 Stainless Steel material |
| | IE | Integral Earth option |
| | R | Reduced Bore option |



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E****F* / D****F Cable Glands

| NOTE:- * Type 3 & 4 (silicone) seals only to 9.3 mm diameter | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Gland Size | Standard Entry threads | | Inner Sheath | | Outer Sheath | | Reduced Bore | | Armour Dia./Thickness | |
| | Metric | NPT | Min | Max | Min | Max | Min | Max | W - Wire armour | X - Braid & Tape |
| 16 | M16 | 3/8" NPT | 3.5 | 8.4 | 8.4 | 13.5 | 4.9 | 10.0 | 0.9 | 0.15 – 0.35 |
| 20S | M20 | ½" NPT | 8.0 | 11.7 | 11.5 | 16.0 | 9.4 | 12.5 | 0.9 – 1.25 | 0.15 – 0.35 |
| 20 | M20 | ½" NPT | 6.7* | 14.0 | 15.5 | 21.1 | 12.0 | 17.6 | 0.9 – 1.25 | 0.15 – 0.50 |
| 25 | M25 | ¾" NPT | 13.0 | 20.0 | 20.3 | 27.4 | 16.8 | 23.9 | 1.25 – 1.6 | 0.15 – 0.50 |
| 32 | M32 | 1" NPT | 19.0 | 26.3 | 26.7 | 34.0 | 23.2 | 30.5 | 1.6 – 2.0 | 0.15 – 0.55 |
| 40 | M40 | 1 ¼" NPT | 25.0 | 32.2 | 33.0 | 40.6 | 28.6 | 36.2 | 1.6 – 2.0 | 0.2 – 0.6 |
| 50S | M50 | 1 ½" NPT | 31.5 | 38.2 | 39.4 | 46.7 | 34.8 | 42.4 | 2.0 – 2.5 | 0.2 – 0.6 |
| 50H | M50 | 1 ½" NPT | 31.5 | 38.2 | 45.7 | 53.2 | 41.1 | 48.5 | 2.0 – 2.5 | 0.2 – 0.6 |
| 50 | M50 | 2" NPT | 36.5 | 44.1 | 45.7 | 53.2 | 41.1 | 48.5 | 2.0 – 2.5 | 0.3 – 0.8 |
| 63S | M63 | 2" NPT | 42.5 | 50.1 | 52.1 | 59.5 | 47.5 | 54.8 | 2.5 | 0.3 – 0.8 |
| 63H | M63 | 2" NPT | 42.5 | 50.1 | 58.4 | 65.8 | 53.8 | 61.2 | 2.5 | 0.3 – 0.8 |
| 63 | M63 | 2 ½" NPT | 49.5 | 56.0 | 58.4 | 65.8 | 53.8 | 61.2 | 2.5 | 0.3 – 0.8 |
| 75S | M75 | 2 ½" NPT | 54.5 | 62.0 | 64.8 | 72.2 | 60.2 | 68.0 | 2.5 | 0.3 – 1.0 |
| 75H | M75 | 2 ½" NPT | 54.5 | 62.0 | 71.1 | 78.0 | 66.5 | 73.4 | 2.5 | 0.3 – 1.0 |
| 75 | M75 | 3" NPT | 60.5 | 68.0 | 71.1 | 78.0 | 66.5 | 73.4 | 2.5 | 0.3 – 1.0 |
| 80 | M80 | 3" NPT | 62.2 | 72.0 | 77.0 | 84.0 | 71.9 | 79.4 | 3.15 | 0.45 – 1.0 |
| 80H | M80 | 3" NPT | 62.2 | 72.0 | 79.6 | 90.0 | 75.0 | 85.4 | 3.15 | 0.45 – 1.0 |
| 85 | M85 | 3" NPT | 69.0 | 78.0 | 79.6 | 90.0 | 75.0 | 85.4 | 3.15 | 0.45 – 1.0 |
| 90 | M90 | 3 ½" NPT | 74.0 | 84.0 | 88.0 | 96.0 | 82.0 | 91.4 | 3.15 | 0.45 – 1.0 |
| 90H | M90 | 3 ½" NPT | 74.0 | 84.0 | 92.0 | 102.0 | 87.4 | 97.4 | 3.15 | 0.45 – 1.0 |
| 100 | M100 | 3 ½" NPT | 82.0 | 90.0 | 92.0 | 102.0 | 87.4 | 97.4 | 3.15 | 0.45 – 1.0 |

Gland Type: **D****F

Available Part No's.:

| **D** | * | * | * | * | **F** |
|---|---|---|---|---|---|
| | 1 | W | A | IE | |
| | 2 | X | B | | |
| | 3 | | S | | |
| | 4 | | | | |

Options:

| | |
|---|---|
| 1 | Neoprene Seals |
| 2 | Neoprene Seal with Lead Sheath Cable Continuity Washer |
| 3 | Silicone Seal |
| 4 | Silicone Seal with Lead Sheath Cable Continuity Washer |
| W | Steel Wire Armour option |
| X | SWA/Woven Steel Wire/Steel Tape/Braid |
| A | Aluminium material |
| B | Brass material |
| S | 316 Stainless Steel material |
| IE | Integral Earth option |



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Gland Type: **C****E***

Available Part No's.:

| C | * | * | * | * | E | * |
|---|---|---|---|---|---|---|
| | 1 | W | A | IE | | R |
| | 3 | X | B | | | |
| | | | S | | | |

Options:

| | |
|---|---|
| 1 | Nitrile Seals |
| 3 | Silicone Seals |
| W | Steel Wire Armour option |
| X | SWA/Woven Steel Wire/Steel Tape/Braid |
| A | Aluminium material |
| B | Brass material |
| S | 316 Stainless Steel material |
| IE | Integral Earth option |
| R | Reducer Bore option |

Type C****E* Cable Glands

| Gland Size | Standard Entry threads | | Inner Sheath | Outer Sheath | | Reduced Bore | | Armour Dia./Thickness | |
|---|---|---|---|---|---|---|---|---|---|
| | Metric | NPT | Max | Min | Max | Min | Max | W - Wire armour | X - Braid & Tape |
| 16 | M16 | 3/8" NPT | 8.4 | 8.4 | 13.5 | 4.9 | 10.0 | 0.9 | 0.15 – 0.35 |
| 20S | M20 | ½" NPT | 11.7 | 11.5 | 16.0 | 9.4 | 12.5 | 0.9 – 1.25 | 0.15 – 0.35 |
| 20 | M20 | ½" NPT | 14.0 | 15.5 | 21.1 | 12.0 | 17.6 | 0.9 – 1.25 | 0.15 – 0.50 |
| 25 | M25 | ¾" NPT | 20.0 | 20.3 | 27.4 | 16.8 | 23.9 | 1.25 – 1.6 | 0.15 – 0.50 |
| 32 | M32 | 1" NPT | 26.3 | 26.7 | 34.0 | 23.2 | 30.5 | 1.6 – 2.0 | 0.15 – 0.55 |
| 40 | M40 | 1 ¼" NPT | 32.2 | 33.0 | 40.6 | 28.6 | 36.2 | 1.6 – 2.0 | 0.2 – 0.6 |
| 50S | M50 | 1 ½" NPT | 38.2 | 39.4 | 46.7 | 34.8 | 42.4 | 2.0 – 2.5 | 0.2 – 0.6 |
| 50H | M50 | 1 ½" NPT | 38.2 | 45.7 | 53.2 | 41.1 | 48.5 | 2.0 – 2.5 | 0.3 – 0.8 |
| 50 | M50 | 2" NPT | 44.1 | 45.7 | 53.2 | 41.1 | 48.5 | 2.0 – 2.5 | 0.3 – 0.8 |
| 63S | M63 | 2" NPT | 50.1 | 52.1 | 59.5 | 47.5 | 54.8 | 2.5 | 0.3 – 0.8 |
| 63H | M63 | 2" NPT | 50.1 | 58.4 | 65.8 | 53.8 | 61.2 | 2.5 | 0.3 – 0.8 |
| 63 | M63 | 2 ½" NPT | 56.0 | 58.4 | 65.8 | 53.8 | 61.2 | 2.5 | 0.3 – 0.8 |
| 75S | M75 | 2 ½" NPT | 62.0 | 64.8 | 72.2 | 60.2 | 68.0 | 2.5 | 0.3 – 1.0 |
| 75H | M75 | 2 ½" NPT | 62.0 | 71.1 | 78.0 | 66.5 | 73.4 | 2.5 | 0.3 – 1.0 |
| 75 | M75 | 3" NPT | 68.0 | 71.1 | 78.0 | 66.5 | 73.4 | 2.5 | 0.3 – 1.0 |
| 80 | M80 | 3" NPT | 72.0 | 77.0 | 84.0 | 71.9 | 79.4 | 3.15 | 0.45 – 1.0 |
| 80H | M80 | 3" NPT | 72.0 | 79.6 | 90.0 | 75.0 | 85.4 | 3.15 | 0.45 – 1.0 |
| 85 | M85 | 3" NPT | 78.0 | 79.6 | 90.0 | 75.0 | 85.4 | 3.15 | 0.45 – 1.0 |
| 90 | M90 | 3 ½" NPT | 84.0 | 88.0 | 96.0 | 82.0 | 91.4 | 3.15 | 0.45 – 1.0 |
| 90H | M90 | 3 ½" NPT | 84.0 | 92.0 | 102.0 | 87.4 | 97.4 | 3.15 | 0.45 – 1.0 |
| 100 | M100 | 3 ½" NPT | 90.0 | 92.0 | 102.0 | 87.4 | 97.4 | 3.15 | 0.45 – 1.0 |



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## Specific Conditions of Use

1. The ranges of cable glands shall not be used in enclosures where the temperature, at the point of entry/mounting is outside the range:
   -35°C to +90°C for neoprene (black) seal variants
   -60°C to +180°C for the silicone (white or red) seal variants
2. The E****F* and D****F range of cable glands, when installed in accordance with the manufacturer's instructions and with an appropriate enclosure on which they are fixed, are capable of providing an ingress protection of IP66 and IP68 (50 metres 7 days).
3. The C****E* range of cable glands, when installed in accordance with the manufacturer's instructions and with an appropriate enclosure on which they are fixed, are capable of providing an ingress protection of IP66.
4. 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 IEC 60079-31: 2013,
   - 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 IEC 60079-31: 2013
5. If the E****F*, D****F and C****E* type cable glands only grip the cable sheath and do not clamp the armour, or if they are used to terminate unarmoured, braided or screened cables, then they shall only be used for fixed installations, hence the cables shall be effectively clamped to prevent pulling or twisting

## Full Certificate Change History

**Issue 1** – this Issue introduced the following changes:

i. Following appropriate reassessment to demonstrate compliance with the requirements of the latest editions of the IEC 60079 series of standards, the documents previously listed, IEC 60079-0:2004, IEC 60079-1:2003, IEC 60079-7:2001, IEC 61241-0:2004 and IEC 61241-1:2004 were replaced by those currently listed, the markings were updated accordingly and the Conditions of Manufacture were updated.
ii. Type of protection Ex t is upgraded from EPL Db to EPL Da. Following appropriate reassessment to demonstrate compliance with the additional requirements for Ex ta, the markings were updated accordingly.
iii. The use of Aluminium as a material of construction was approved.
iv. The introduction of an alternative silicone and neoprene seal material was endorsed.
v. The service temperature range of the glands fitted with a neoprene seal was extended to -35°C to +90°C.
vi. The E****F* and D****F type cable glands, when installed in accordance with the manufacturer's instructions and with an appropriate enclosure on which they are fixed, are capable of providing an ingress protection of IP66 and IP68 (50 metres 7 days).
vii. The description has been amended to recognise that the CWLe has now been changed to C****E*, the E1WF has changed to E****F* and the D1WF has changed to D****F.
viii. Conductive neoprene and lead seals have been removed as a sealing material option.



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**Issue 2** – this Issue introduced the following changes:

i. To modify/introduce the following changes to type C****E*, E****F* and D****F Cable Glands:
- C****E*, the maximum inner sheath diameter accommodation for all gland sizes was recognised.
- C****E*, gland sizes 50H, 63H, 75H, 80H and 90H were introduced.
- C****E*, gland size 20S, revised 'standard' outer seal cable range from: 12.9/16.0 to: 11.5/16.0
- C****E* and E****F* and D****F, gland size 16 with 0.38" NPT standard "trade size" introduced.

ii. The recognition of the 'standard' entry threads associated with every gland types gland sizes, in accordance with newly introduced generic bill of material drawing(s).

iii. To permit all gland types, of parallel threaded entry threads, marked suitable for 'Exe' only to be modified to have a minimum thread length increased to 10 mm from 8 mm.

iv. To permit all gland types of parallel threaded entry threads to be manufactured with a longer than 'standard' thread length to suit the end use application.

v. To permit all gland types to be manufactured with a size larger than the 'standard' entry threads listed within the product description.

vi. To recognise all gland types with the following alternate threaded entry threads complying with the requirements of IEC 60079-1:2001. Are intended to be used as replacement entry devices within existing installations with equipment that have threaded entries no longer permitted by the current edition of IEC 60079-1.

- NPSM ANSI/ASME B1.20.1:1983
- BSPT BS21:1985 (ISO 7/1; BS EN 10226-1:2004 'standard threads'
- BSPP BS EN ISO 228-1 :2003; BS EN ISO 2228-2:2003 class A full form 'external threads'
- PG DIN 40430:1971
- ET BS 31:1940 (1979) Table 'B'

All alternative trade size thread forms are manufactured within the dimensional parameter of the standard entry threads of the gland entry body, and relevant constructional compliance length and engagement requirements in accordance with their product markings

vii. To recognise the actual seal 'material specification' reference as a replacement for the seal 'material supplier'.

viii. The brass materials of manufacture were updated and corrected.

ix. The aluminium materials of manufacture were updated and corrected.

x. The list of certified scheduled drawings was rationalised and reiterated for completeness including replacing of some drawing numbers and adding drawings for completeness.

xi. 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.

xii. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-1:2007 Ed 6, IEC 60079-7:2006 Ed 4 and IEC 60079-31:2008 Ed 1, were replaced by IEC 60079-1:2014 Ed 7, IEC 60079-7:2015 Ed 5 and IEC 60079-31:2013 Ed 2, the markings were updated accordingly, and a Specific Condition of Use modified and amended to recognise the new standard edition. In addition the description was modified to clarify the certified cable gland types, the standard gland size 'entry threads ', and gland size range taking capabilities inclusive of changes carried out under this certificate variation.



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