

**GOVERNMENT APPROVED TEST LABORATORY**  
 IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

**IA CERTIFICATE**

Date Issued: **19 Mar 2024**  
 \*Expiry date: **25 Jan 2027**  
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**Issue: 2**

**Ex – Type Examination Certificate**

Certificate Number: **S-XPL/21.0003 X**  
 Equipment: **Series Cable Glands**  
 Model / Type: **A2FHT, RA2FHT, A2FHTHC, RA2FHTHC, A2F, RA2F, A2FHC, RA2FHC**  
 Series  
 Applicant: **CMP Products Limited**  
**Glasshouse Street**  
**St Peters**  
**Newcastle Upon Tyne**  
**NE6 1BS**  
**United Kingdom**  
 Manufacturer: **CMP Products Limited**  
 Serial No: All serial numbers imported between issued- and expire date and all serial numbers covered by a valid report or acceptable product certification mark.

Supplied by  
**CMP Products Limited**  
 Identified by Inspection Authority number  
**S-XPL/21.0003 X**

And as described in the Explolabs file number **XPL/21804/21.0003** is hereby certified "Explosion Protected (Refer to clause 1, for Ex Rating)", having been examined and inspected in accordance with the relevant requirements of South African Standards.

- SANS 60079-0: 2019 Ed 6** Explosive atmospheres Part 0: Equipment — General requirements
- IEC 60079-0: 2017 Ed 7**
- SANS 60079-1: 2015 Ed 5** Explosive atmospheres Part 1: Equipment protection by flameproof enclosures "d"
- IEC 60079-1: 2014 Ed 7**
- SANS 60079-7: 2023 Ed 4.1** Explosive atmospheres Part 7: Equipment protection by increased safety "e"
- IEC 60079-7: 2017 Ed 5.1**
- SANS 60079-15: 2022 Ed 5** Explosive atmospheres Part 15: Equipment protection by type of protection "n"
- IEC 60079-15: 2017 Ed 5**
- SANS 60079-31: 2014 Ed 2** Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"
- IEC 60079-31: 2013 Ed 2**

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL)	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
	Group			
High	Gb Group II	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 1 and 2	Not Applicable
Enhanced	Gc Group II	Suitable for normal operation	Equipment remains functioning in zone 2	Not Applicable
Very high	Da Group III	Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains functioning in zones 20, 21 and 22	Not Applicable

## 1. GENERAL

The marking of the Series Cable Glands shall include the following:

**Ex db IIC Gb**

**Ex eb IIC Gb**

**Ex nR IIC Gc**

**Ex ta IIIC Da**

**IP66 IP67 IP68 (30m for 12 hours)**

**Ts= -60°C to +130°C (A2F, RA2F, A2FHC, RA2FHC Series)**

**Ts= -60°C to +180°C (A2FHT, RA2FHT, A2FHTHC, RA2FHTHC Series)**

The A2FHT, RA2FHT, A2FHTHC, RA2FHTHC, A2F, RA2F, A2FHC, RA2FHC Series Cable Glands allow circular unarmored or braided/screened cables to enter associated enclosures to which they are fitted (as defined by their coding) without compromising the explosion protection that it provides.

They are manufactured from the following component parts:

- Metallic entry item hexagonal in form which is partially threaded at one end with a male metric or NPT thread used to secure the entry item to the associated enclosure. At the other end there is a partially turned external surface which is provided for placement of the product markings. At this end the internal profiled bore of the component is partially threaded with a female thread to accept engagement of the outer seal nut.
- Elastomeric sealing ring which is inserted into the female threaded end of the entry item which, when displaced by tightening of the outer seal nut, secures the incoming cable in place, along with providing 'sealing' and ingress protection.
- Stepped skid washer hollow 'top hat' in form, is fitted into the recessed bore of the outer seal nut. Which upon tightening of the outer seal nut, aids axial displacement of the sealing ring and limits any twisting of the cable within the cable gland during installation.

Note:

- Metallic stepped skid washer in A2FHT Series
- Metallic or Polymeric stepped skid washer in A2F Series (dependent upon gland size)
- Metallic outer seal nut, hexagonal in form, is partially threaded at one end with a male thread which engages with the entry items and upon tightening displaces the sealing ring onto the cable. Internally the bore is recessed at one end to accommodate the stepped skid washer, and the other end is machined with an internal radius to reduce the risk of damage to cable sheath/jacket.
- Model code series suffixed 'HC' for all cable gland model series, up to either gland size 75S or gland size 75 (dependent upon model series), which includes an alternative nut that is extended to provide a plain circular portion, to facilitate the connection of a hose that provides additional mechanical and environmental protection of the cable terminated within the cable gland. The compression nut may alternatively be machined with a dimensionally equivalent 'smaller' certified gland size hose connection feature. In this instance the upper cable sealing diameter range being reduced accordingly.

The cable gland and sealing ring sizes are determined by the entry thread and cable range take sizes:

A2FHT Series					
Gland Size	Entry Thread			Cable Outer Sheath Ø	
	Standard (Metric)	Standard	Optional (NPT)	Min. (mm)	Max. (mm)
16	M16 x1.5	3/8"	-	3.2	8.0
20S16	M20 x1.5	1/2"	3/4"	3.2	8.0
20S	M20 x1.5	1/2"	3/4"	6.5	11.2
20	M20 x1.5	1/2"	3/4"	7.0	13.5
25	M25 x1.5	3/4"	1"	11.5	19.5
32	M32 x1.5	1"	1 1/4"	19.0	25.5
40	M40 x1.5	1 1/4"	1 1/2"	25.0	32.2
50S	M50 x1.5	1 1/2"	2"	31.0	38.2
50	M50 x1.5	2"	2 1/2"	35.6	44.0
63S	M63 x1.5	2"	2 1/2"	41.5	49.9
63	M63 x1.5	2 1/2"	3"	48.2	54.9
75S	M75 x1.5	2 1/2"	3"	54.0	61.9

A2F Series					
Gland Size	Entry Thread			Cable Outer Sheath Ø	
	Standard (Metric)	Standard	Optional (NPT)	Min. (mm)	Max. (mm)
16	M16 x1.5	3/8"	-	3.2	8.7
20S16	M20 x1.5	1/2"	3/4"	3.2	8.7
20S	M20 x1.5	1/2"	3/4"	6.5	11.7
20	M20 x1.5	1/2"	3/4"	7.0	14
25	M25 x1.5	3/4"	1"	11.1	20.0
32	M32 x1.5	1"	1 1/4"	18.2	26.3
40	M40 x1.5	1 1/4"	1 1/2"	23.5	32.2
50S	M50 x1.5	1 1/2"	2"	31.0	38.2
50	M50 x1.5	2"	2"	35.6	44.0
63S	M63 x1.5	2"	2 1/2"	41.5	49.9
63	M63 x1.5	2 1/2"	3"	47.2	55.9
75S	M75 x1.5	2 1/2"	3"	54.0	61.9
75	M75 x1.5	3"	3 1/2"	61.1	67.9
90	M90 x 2.0	3 1/2"	4"	66.6	79.9
100	M100 x 2.0	3 1/2"	4"	76.0	89.0
115	M115 x 2.0	4"	5"	86.0	97.9
130	M130 x 2.0	5"	-	97.0	114.9

### Design Options

The front threaded entry item may be manufactured with a profiled groove to captivate an 'O' ring seal which locates on the mating face of the associated enclosure. This option having the cable gland type designation prefixed with the letter R, e.g., RA2FHT Series.

The front threaded entry item may be manufactured with any larger metric or NPT thread form size from the sizes certified.

The front threaded entry item may be manufactured with an alternative nearest equivalent recognised thread type and size to the metric thread sizes certified.

Metric threaded cable entry spigots of all cable gland model series to be manufactured with a thread pitch between 0.7mm and 2.0mm, with 1.5mm as standard.

The optional use of an internally fitted brass or brass plated ingress disc between the seal and the stepped washer component parts within 'A2F' Series & 'RA2F' Series, 'A2FHT' Series & 'RA2FHT' Series cable glands.

The option to manufacture low profile 'across corners' envelope cable gland sizes, with the cable gland size suffix code designation 'P':

Gland Size	16P	20S16P	20SP	20 P	25P*
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(\* not available in aluminium)

The differences to the standard cable gland sizes, are-

- The entry item component is machined from round bar, equal to the standard gland size across corners dimensions, with a central portion machined to a hexagonal profile, having reduced across flats from the standard gland size. Along with a minor increase in length resulting from an increase to the conical wall thickness.
- The gland nut component (dependent upon model series and gland size), having reduced across flats and across corners dimensions from the standard gland size. Along with their maximum inner most bore dimension being reduced.

**Materials of manufacture:**

The standard material supplied is:

Brass	BS EN 12164:2011/ BS EN 12168:2011 Grade CuZn39Pb3 (CW614N) All brass manufactured component parts can be optionally nickel plated to a maximum of 0.008mm
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Alternate materials are:

Stainless steel	BS EN 10088-3:2014 Grades 316S11, 316S13, 316S31, 316S33, 316L
Mild steel	BS EN 10277-2:2008 Grades 220M07, 230M07 (EN1A) / 220M07Pb, 230M07Pb (EN1APb)
Aluminium	BS EN 573-3:2013 / BS EN 755-1-3:2008 Grade 6082 T6, 6262 T6 / BS EN 1676:2010 Grade LM25 TF Aluminium will contain less than 6% magnesium

**Alternative entry component thread forms:**

ET (Conduit)	BS31:1940 (1979), Table A
PG	DIN 40430:1971
BSPP	BS2779:1986 class A full form for external threads
BSPT	BS21:1985 standard threads only as clause 5.4, gauging to clause 5.2 system A
ISO	ISO 7/1:1994, gauging to ISO 7/2 clause 6.3 for external threads
NPSM	ANSI/ASME B1.20.1-2013 gauging to clause 6.4 for external threads

**Notes:**

- Sira 16ATEX1019X and IECEx SIR 16.0007X are superseded by this certificate.
- The product covered by Issue 0 of this certificate remains identical to that previously covered by Sira 16ATEX1019X and IECEx SIR 16.0007X.
- Where Sira 16ATEX1019X and IECEx SIR 16.0007X are 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.

Based on the following documentation: IECEx CML 18.0173X Issue 0.

**2. INSTALLATION INSTRUCTIONS**

It is the manufacturer's responsibility to supply installation instructions with each unit offered for sale as required by IEC/SANS 60079-0 Clause 30.

**3. SPECIAL CONDITIONS FOR SAFE USE** (denoted by "X" after certificate number)

- All cable gland types and sizes are only suitable for fixed installations. Cables must be effectively clamped to prevent pulling or twisting.
- The front threaded 'entry item' may be provided with, but not limited to, an alternative nearest equivalent recognised thread type and size to the metric thread, whilst maintaining a tolerance of fit, equal or better than, a medium fit to ISO 965-1 & ISO 965-3. Intended for use within existing installations only, that incorporate thread types that are no longer permitted by the current edition of EN/IEC 60079-1, but comply with the requirements of EN 50018:2000 & IEC 60079-1:2001.

For example:

- ET - BS 31:1940 (1979) Table 'A'
- PG - DIN 40430:1971
- BSPP - BS2279:1986 class A full form for external threads



- BSPT - BS21:1985 standard threads only as clause 5.4, gauging to clause 5.2, system A.
- ISO - ISO 7/1:1994 gauging to ISO 7/2 clause 6.3 for external threads.
- NPSM - ANSI/ASME B1.20.1:1983 B1.20.1-1983 gauging to clause 9 for external threads.

- iii. Ingress discs shall be removed (not remain fitted within cable glands) intended for installation within flameproof (Ex d) enclosures.

4. **SCHEDULE OF LIMITATIONS** (denoted by "U" after certificate number)  
Not Applicable

5. **CONDITIONS OF CERTIFICATION**

All production units must be covered by a QAN (Quality Assurance Notification), Product Mark Scheme or batch evaluation.

The following are conditions of manufacture:

- i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- ii. Cable gland sizes with polymeric stepped skid washers may alternatively be supplied with metallic stepped skid washers.
- iii. Cable gland metallic parts are to be supplied in alike materials, alternatively a brass or nickel-plated brass stepped skid washer may be used within steel and stainless-steel glands.
- iv. The front threaded entry item of any model series, when manufactured with a larger thread form or larger technical equivalent thread form, to the standard metric or NPT sizes approved and detailed on the certification documentation will only differ as follows:
  - These entry item dimensions must remain the same:
    - o The front bore diameter and profile and sealing ring taper angle.
    - o Outer seal engagement thread diameter and length.
  - All other dimensions may be altered to match those of the larger approved cable gland size, provided that the overall cable gland protrusion length (whichever is greater between the original cable gland size or the larger approved cable gland size) is not exceeded.
- v. Cable gland sizes 25P shall not be manufactured in aluminium.
- vi. Cable glands marked solely for flameproof (Ex 'd') applications i.e 'Ex db IIC Gb' shall not be fitted with the ingress disc.
- vii. Cable Glands supplied with ingress discs shall not be marked suitable for IPX7 or IPX8 applications.

**6. MARKING**

The following (or similar) information have to be clearly and permanently marked on all units:

Supplier : CMP Products Limited  
 Manufacturer : CMP Products Limited  
 Equipment : Series Cable Glands  
 Model/Type : A2FHT, RA2FHT, A2FHTHC, RA2FHTHC, A2F, RA2F, A2FHC, RA2FHC Series  
 Serial No. : ---  
 Ex Rating : Ex db IIC Gb  
               Ex eb IIC Gb  
               Ex nR IIC Gc  
               Ex ta IIIC Da  
               IP66 IP67 IP68 (30m for 12 hours)  
               Ts= -60°C to +130°C (A2F, RA2F, A2FHC, RA2FHC Series)  
               Ts= -60°C to +180°C (A2FHT, RA2FHT, A2FHTHC, RA2FHTHC Series)  
 IA Certificate No : S-XPL/21.0003 X

*This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(2) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:*

- i) SANS 10086 and IEC/SANS 61241-14 requirements as applicable;
- ii) Any conditions mentioned in the above report;
- iii) Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act; and
- iv) Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
- v) A revision certificate replaces all previous version of the certificate.
- vi) \* - Only covers equipment Imported between the "Issued" and "Expire" dates.
- vii) If and when your QAN (Quality Assurance Notification) Certificate for your equipment manufacturer expires during the valid period of the IA Certification (issued for your equipment) and a new certificate is not submitted the existing IA Certification will then be cancelled. It is thus the client's responsibility to always submit the updated and valid QAN certificate(s) to Explolabs (Pty) Ltd

**Responsible Testing Officer:**



**D Maree**

**Technical Specialist**

**EXPLOLABS EXPLOSION PREVENTION SERVICES**

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