1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 13ATEX1068X** Issue: **2**

4 Equipment: **Cable Gland Types A****

5 Applicant: **CMP Products Ltd**

6 Address: Glasshouse Street
St Peters
Newcastle upon Tyne, NE6 1BS
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 60079-0:2012 EN 60079-1:2007 EN 60079-7:2007 EN 60079-31:2009

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

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:

IM2
Ex e I Mb
Ex d I Mb

II 2G
Ex e IIC Gb
Ex d IIC Gb

II 1D
Ex ta IIIC Da

Project Number 70016029

C Ellaby
Deputy Certification Manager

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13 **DESCRIPTION OF EQUIPMENT**

Type designation A2F Range

The A2F range of cable glands are metallic and are intended to terminate circular braided or unarmoured cables into a threaded entry point within enclosures without compromising the explosion protection provided by the enclosures in accordance with relevant codes of practice. They consist of a male-threaded front entry component and a seal actuation nut. The front entry component fitted with an elastomeric displacement sealing ring, and nylon 6 stepped skid washer, is intended to screw into an entry point of its associated enclosure. The seal actuation nut threads into the front entry component thereby effecting flameproof and environmental sealing onto the cable outer sheath.

Type designation A2E Range

The A2E range of cable glands are identical to the A2F range but with entry thread engagement lengths minimised

Type designation A2FRC Range

The A2FRC range of cable glands are intended to terminate circular braided or unarmoured cables into enclosures without compromising the explosion protection provided by the enclosures in accordance with relevant codes of practice. They consist of a male-threaded front entry component, a seal actuation nut and either an outer captivated or running coupling. The front entry component, fitted with an elastomeric displacement sealing ring is intended to screw into an entry point of its associated enclosure. The seal actuation nut threads into the front entry component thereby effecting flameproof and environmental sealing onto the cable outer sheath. The outer running coupling is retained in the seal actuation nut using the carbon steel 'C' clip, or a similar arrangement to allow free running thread connection to conduit.

Type designation A2F-FC Range

The A2F-FC range of cable glands is intended to terminate circular braided or unarmoured cables into enclosures without compromising the explosion protection provided by the enclosures in accordance with relevant codes of practice. They also provide an anchor for a flexible metallic conduit which can protect the cable from damage. They consist of a male-threaded front entry component, a seal actuation nut and a conduit anchor element that screws into the inside of the conduit. The front entry component, fitted with an elastomeric displacement sealing ring is intended to screw into an entry point of its associated enclosure. The seal actuation nut threads into the front entry component thereby effecting flameproof and environmental sealing onto the cable outer sheath. The conduit anchor is secured between the seal actuation nut and seal to form a skid washer.

Type designation A2F-HC Range

The A2F-HC range of cable glands is intended to terminate circular braided or unarmoured cables into enclosures without compromising the explosion protection provided by the enclosures in accordance with the relevant codes of practice. They also provide an anchor for a flexible hose which can protect the cable from damage. They consist of a male-threaded front entry component, a seal actuation nut with a hose anchor to which a hose can be attached using a jubilee clip or similar. The front entry component, fitted with an elastomeric displacement sealing ring and skid washer is intended to screw into an entry point of its associated enclosure. The seal actuation nut threads into the front entry component thereby effecting flameproof and environmental sealing onto the cable outer sheath.

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE **Sira 13ATEX1068X**
Issue 2

Type designation A2F-FF Range

The A2F-FF range of cable glands are intended to terminate flat braided or unarmoured cables into a threaded entry point within enclosures without compromising the explosion protection provided by the enclosures in accordance with relevant codes of practice. They consist of a male-threaded front entry component and a seal actuation nut. The front entry component fitted with an elastomeric displacement sealing ring, and nylon 6 stepped skid washer, is intended to screw into an entry point of its associated enclosure. The seal actuation nut threads into the front entry component thereby effecting flameproof and environmental sealing onto the cable outer sheath.

Type designation A2E-FF Range

The A2E-FF range of cable glands is identical to the A2F-FF range but with entry thread engagement lengths minimised

Design options

- The front entry component may be manufactured with a profiled groove to captivate an 'O' ring seal which locates on the mating face with the associated enclosure. This option having the gland type designation prefixed with the letter R, e.g. 25RA2F
- Materials of manufacture:
  Brass to EN12168:1998 Grade CuZn39Pb (CW614N)
  Mild steel to BS EN 10088-3:2005 Grade 220M07Pb
  Stainless steel to BS EN 10088-3:2005 Grade 316S11, 316S13, 316S31 or 316S33
  Aluminium alloy not inferior to grade 6082 to EN755,1-3:1996 or LM25 to BS EN 1676:2010 (Not Group I)
- Alternative entry component thread forms:

Metric	ISO 965-1, ISO965-3 medium fit (6g) for external threads
ET(Conduit)	BS 31:1940 (1979), Table A
PG	DIN 40430:1971
BSPP	BS 2779:1973 class A full form for external threads
BSPT	BS 21:1985 standard threads only as clause 5.4, gauging to clause 5.2 system A
ISO	ISO 7/1:1982, gauging to ISO 7/2 clause 6.3 for external threads
NPT	ANSI/ASME B1.20.1-1983 gauging to clause 8.1 for external threads
NPSM	ANSI/ASME B1.20.1-1983 gauging to clause 9 for external threads

- Alternative material of manufacture of the skid washer to be the same as the gland material.
- Alternative 'C' clip plate finish (where applicable): Stainless steel
  Phosphor bronze
  Beryllium copper
- The option to fit a flat blanking disc between the seal and the skid washer to maintain a minimum IP66 ingress protection. The disc to be marked 'Exe only' to indicate that the gland is not suitable for use in Ex d applications when it is fitted.

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The gland and seal sizes are determined by the entry thread and cable range-take sizes:

Gland Size	Entry Thread	Cable Sheath Ø (mm)	
		Min.	Max.
16	M16 x 1.5	3.2	8.7
20s/16	M20 x 1.5	3.2	8.7
20s	M20 x 1.5	6.1	11.7
20	M20 x 1.5	6.5	14.0
25	M25 x 1.5	11.1	20.0
32	M32 x 1.5	17.0	26.3
40	M40 x 1.5	23.5	32.2
50s	M50 x 1.5	31.0	38.2
50	M50 x 1.5	35.6	44.1
63s	M63 x 1.5	41.5	50.0
63	M63 x 1.5	47.2	56.0
75s	M75 x 1.5	54.0	62.0
75	M75 x 1.5	61.1	68.0
90	M90 x 2.0	66.6	80.0
100	M100 x 2.0	76.0	91.0
115	M115 x 2.0	86.0	98.0
130	M130 x 2.0	97.0	115.0

A2F-FF and A2E-FF in these sizes only.

Gland Size	Entry Thread	Cable Outer Sheath (mm)	
		Min.	Max.
20s	M20 x 1.5	4.0 x 6.2	6.8 x 11.7
20	M20 x 1.5	5.7 x 8.0	8.7 x 13.5

Variation 1 - This variation introduced the following changes:

i. The removal of the Special Condition of Safe Use that stated clamping was required when the glands are used with flexible conduit.
ii. The removal of the design option that allowed the standard cable glands to be manufactured with the next larger thread size ('B' versions), as a result, the associated Special Condition of Safe Use was removed and the entry thread and cable range-take sizes tables in the description were modified to remove the reference to the 'B' versions which can be found in the previous copy of the certificate.
iii. The removal of the ambient temperature ranges from the marking requirements and the introduction of a Special Condition of Safe Use that includes this information.
iv. The revision to product marking drawings to bring them into line with the marking specified in assessment report R27765A/00.

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Variation 2 - This variation introduced the following changes:

i. The introductions of a front entry component, manufactured in stainless steel, having the next metric thread size down to the standard 'gland size'. This option having the gland type designation prefixed with the letter C, e.g. 50s CA2F M40 instead of the standard 50s A2F M50.

Entry components are available in the following sizes:

Standard 'Gland Size'	Entry thread 'C' version
20S	M16 x 1.5
20	M16 x 1.5
25	M20 x 1.5
32	M25 x 1.5
40	M32 x 1.5
50S	M40 x 1.5

Standard 'Gland Size'	Entry thread 'C' version
63S	M50 x 1.5
75S	M63 x 1.5
90	M75 x 1.5
100	M90 x 2.0
115	M100 x 2.0
130	M115 x 2.0

ii. The recognition of minor drawing amendments to drawing numbers GA177, GA208, GA325, GA348 and SCH0321 that do not affect the explosion protection concepts of the equipment.

iii. The re introduction of a front entry component, having the next metric thread size up to the standard 'gland size'. This option having the gland type designation prefixed with the letter B, e.g. 32 BA2F M40 instead of the standard 32 A2F M32.

Entry components are available in the following sizes:

Standard 'Gland Size'	Entry thread 'B' version
20S/16	M25 x 1.5
20S	M25 x 1.5
20	M25 x 1.5
25	M32 x 1.5
32	M40 x 1.5
40	M50 x 1.5
50S	M63 x 1.5
50	M63 x 1.5

Standard 'Gland Size'	Entry thread 'B' version
63S	M75 x 1.5
63	M75 x 1.5
75S	M90 x 2.0
75	M90 x 2.0
90	M100 x 2.0
100	M115 x 2.0
115	M130 x 2.0
-	-

iv. As a result of this Variation additional Special Conditions for Safe Use were introduced.

v. A Condition of Manufacture was introduced to allow the 'not applicable' marking note (restrictive marking) on certain types of products to be removed from the marking section.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

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14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	29 April 2013	R27765A/00	The release of the prime certificate.
1	24 November 2014	R70009262A	The introduction of Variation 1.
2	17 December 2014	R70016029A	The introduction of Variation 2.

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

15.1 The cable glands shall only be used where the temperature, at the point of entry, is in the following ranges:

Outer sheath seal material	Temperature range	Colour I.D.
EPDM 70 (5079B115)	-60°C to +130°C	Black
FKM 70 (9079B0662)	-20°C to +200°C	Red (muddy brown)

15.2 When the cable 'gland size' is supplied with an entry thread that is one size up from the standard cable 'gland size', e.g. M40 instead of M32, designated gland type prefixed 'B', they shall not be used with any thread adaptor/reducer.

15.3 Gland size 20 of cable glands types CA2F, CA2E, CA2F-RC, CA2F-FC, CA2F-HC, CA2F-FF and CA2E-FF shall not be used for Group I, Category M2 applications where there is a 'high' risk of mechanical damage.

15.4 For Ex d applications, cable glands types CA2F, CA2F-RC, CA2F-FC, CA2F-HC and CA2F-FF are to be installed in associated Ex d equipment having a minimum wall thickness as follows:

10.5 mm minimum for cable gland having entry thread sizes M16x1.5 to M75x1.5
12.5 mm minimum for cable gland having entry thread sizes M90x2.0 to M115x2.0

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 Cable gland types A2FRC, BA2FRC and CA2FRC shall not be marked suitable for  I M2, Ex e I Mb, Ex d I Mb.

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Certificate Annexe

Certificate Number: **Sira 13ATEX1068X**

Equipment: **Cable Gland Types A****

Applicant: **CMP Products Ltd**

Issue 0

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
GA177	1 of 1	05	13 Mar 13	A2FRC General arrangement & marking
GA208	1 of 1	03	13 Mar 13	A2F-FC General arrangement & marking
GA325	1 of 1	01	13 Mar 13	A2F-HC General arrangement & marking
GA348	1 of 1	00	29 Apr 13	A2F/ A2E General arrangement & marking
SCH0321	1 of 1	00	13 Mar 13	Inner seal details

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
GA177	1 of 1	06	13 Oct 14	A2FRC General arrangement & marking
GA208	1 of 1	04	13 Oct 14	A2F-FC General arrangement & marking
GA325	1 of 1	02	13 Oct 14	A2F-HC General arrangement & marking
GA348	1 of 1	01	13 Oct 14	A2F/ A2E General arrangement & marking

Issue 2

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
GA177	1 of 1	07	05 Dec 14	A2FRC General arrangement & marking
GA208	1 of 1	05	05 Dec 14	A2F-FC General arrangement & marking
GA325	1 of 1	04	05 Dec 14	A2F-HC General arrangement & marking
GA348	1 of 1	02	05 Dec 14	A2F/ A2E General arrangement & marking
SCH0321	1 of 1	01	05 Dec 14	Component parts drawing
SCH0393	1 of 1	00	05 Dec 14	Cable gland Type suffix ‘C’ front entry component

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