EXPLOLABS Explosion Prevention Services (Pty) Ltd
Reg No: 1999/027771/07

7 Spanner Rd / PO Box 467
Olifantsfontein
1665
Tel: +27 (11) 316 4601
Fax: +27 (11) 316 5670
E-mail: admin-mgr@explolabs.co.za

GOVERNMENT APPROVED TEST LABORATORY

IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

IA CERTIFICATE

Date Issued: **24 Jan 2024**
*Expiry date: **24 Jan 2027**

Issue: 2

Ex – Type Examination Certificate

Certificate Number: **MS-XPL/21.0305 X**
Equipment: **Cable Glands**
Model / Type: **PX****
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
MS-XPL/21.0305 X

And as described in the Explolabs file number **XPL/21962/21.0305** 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 **IEC 60079-0: 2017 Ed 7**	Explosive atmospheres Part 0: Equipment — General requirements
SANS 60079-1: 2015 Ed 5 **IEC 60079-1: 2014 Ed 7**	Explosive atmospheres Part 1: Equipment protection by flameproof enclosures "d"
SANS 60079-15: 2022 Ed 5 **IEC 60079-15: 2017 Ed 5**	Explosive atmospheres Part 15: Equipment protection by type of protection "n"
SANS 60079-31: 2014 Ed 2 **IEC 60079-31: 2013 Ed 2**	Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"
SANS 60079-7: 2019 Ed 4 **IEC 60079-7:2015 Ed 5**	Explosive atmospheres Part 7: Equipment protection by increased safety "e"

This certificate supersedes all previous documents bearing the reference no XPL/21962/21.0305 Issue 1.

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL) Group	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
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	None specified
High	Mb Group I	Suitable for normal operation and severe operating conditions	Equipment de-energized when explosive atmosphere present	T150°C
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	None specified
Enhanced	Gc Group II	Suitable for normal operation	Equipment remains functioning in zone 2	None specified

1. GENERAL

The marking of the Cable Glands shall include the following:

Ex eb I Mb*
Ex db I Mb*
Ex eb IIC Gb
Ex db IIC Gb
Ex ta IIIC Da
Ex nR IIC Gc
***Aluminium alloy is not acceptable for Group I applications**
-60°C to +85°C

The Type PX** series ranges of barrier cable glands consist of a male-threaded front entry component, fitted with a barrier tube such that a spigot/combination joint is formed, which is intended to screw into an entry point of its associated enclosure in accordance with relevant codes of practice.

The barrier tube can be filled with either, a putty compound or RapidEx resin material, creating a flameproof barrier seal around the cable cores. An optional O-Ring may be fitted to the enclosure entry thread to provide improved ingress protection. This range is comprised of the PX2K, PXSS2K, PXRC, PXLT, and PXB2K models, with a choice of variants; W, X, HC, VAR, PB, FF, COMBO and REX. See 'type designation code' flow chart on pages 5 and 6 for the model variant combinations and 'Design Options' for additional components specific to each model.

Materials of manufacture

The PX** Cable Gland ranges are manufactured in brass, aluminium, stainless steel, and mild steel. All brass manufactured component parts can be optionally nickel-plated. All mild steel manufactured components can be optionally zinc plated. Stainless steel cable glands may be fitted with nickelplated brass internal components.

Design Options

PX2K models

• Standard:
Gland entry device generally as stated above, but, supplied with the putty compound only, for barrier tube filling. Clamping of the armour or braid/screen of a cable; achieved by a combination of the front entry item, the supplied armour or braid cone, and clamping ring when combined with the main body component. An outer seal nut, which consists of an elastomeric seal and nylon identification ferrule, threads onto the main body and creates an environmental seal between the gland and the cable outer sheath.
• 'W' variant:
As the PX2K model but is fitted with the armour cone only.

• 'X' variant:
As the PX2K model but is fitted with the braid cone only.
• 'REX' variant
As the PX2K model but is supplied with the RapidEx resin only, for barrier tube filling. Fitted with an additional resin dam component to retain the resin in the barrier tube while curing.
• 'PB' variant:
As the PX2K model but is fitted with an additional metallic continuity device for use with inner lead sheathed, S.W.A. strip armoured and braided cables. The continuity device is clamped between a spacer and cone (amour or braid). The spacer has two design options depending on barrier compound used; RapidEx resin ('REX' variant) or putty compound (standard option).
• 'VAR' variant:
As the PX2K model but is fitted with an additional metallic continuity device for use with Variable Speed Drive (VSD) / Variable Frequency Drive (VFD) cable and similar screened cables. Fitted with the standard armour cone with variant 'W' and fitted with a modified braid cone with variant 'X'.
• 'FF' variant:
As the PX2K model but fitted with an outer sealing ring suitable for use with flat form cables instead of the standard seal. Only available in sizes 20s and 20.

PXB2KX models

• Standard:
As the PX2K model, excluding the main body, seal nut, seal, and ferrule; these components are replaced by a PXB2K armour nut, for braided cables without an outer sheath sealing function.
• 'REX'
As the PXB2K model but is supplied with the RapidEx resin only, for barrier tube filling. Fitted with an additional resin dam component to retain the resin while curing.

PXSS2K models

• Standard:
Gland entry device generally as stated above, but, supplied with the putty compound only, for barrier tube filling. Sealing of the unarmoured or braided/screened cable is via the outer seal nut, which consists of an elastomeric seal and nylon skid washer, threaded onto the main body and creates an environmental seal.
• 'REX' variant
As the PXSS2K model but is supplied with the RapidEx resin only, for barrier tube filling.
Fitted with an additional resin dam component to retain the resin in the barrier tube while curing.
• 'HC' variant:
As the PXSS2K model but the seal nut is replaced with a hose connector seal nut.
• 'PB' variant:
As the PXSS2K model but fitted with an additional metallic continuity device for use with inner lead sheathed S.W.A. strip armoured and braided cables.
• 'VAR' variant:
As the PXSS2K model but is fitted with an additional metallic continuity device for use with Variable Speed Drive (VSD) / Variable Frequency Drive (VFD) and similar screened cables.
The standard main body is replaced by an alternative design, which has an additional internal groove, machined to provide retention for the continuity device.
• 'FF' variant:
As the PXSS2K model but fitted with an outer sealing ring suitable for use with flat form cables instead of the standard seal. Only available in sizes 20s and 20.
• 'COMBO' variant:
As the PXSS2K model but fitted with an alternative main body designed to fit cables with a larger outer sheath diameter than the standard option permits. The size of the sealing nut assembly - nut, seal, and skid washer - depends on the diameter of the outer sheath of the cable required.

PXRC models

• Standard:
Gland entry device intended to terminate circular braided or unarmoured cables and individual cores into enclosures without compromising the explosion protection. Generally as stated above, but, supplied with the putty compound only, for barrier tube filling. A compression nut is threaded into the entry item retaining the compound tube and tube spacer, the coupler is retained via a circlip and provides, by way of a female thread, connection for rigid conduits, and, by way of a conduit fitting, flexible conduits.
• 'M'
As the PXRC standard model but the retained coupler provides connection for rigid conduits by way of a male thread, instead of a female thread.
• 'REX'
As the PXRC / PXRCM models but is supplied with the RapidEx resin only, for barrier tube filling. Fitted with an additional resin dam component to retain the resin in the barrier tube while curing.

PXFC models

• Standard:
Gland entry device intended to terminate circular braided or unarmoured cables and individual cores into enclosures without compromising the explosion protection. Generally as stated above, but, supplied with the putty compound only, for barrier tube filling. A compression nut is threaded into the entry item retaining the compound tube and tube spacer, the coupler is retained via a circlip and provides, by way of conduit thread, connection for flexible conduits only.
• 'REX'
As the PXFC model but is supplied with the RapidEx resin only, for barrier tube filling. Fitted with an additional resin dam component to retain the resin while curing.

PXLT models

• Standard:
Gland entry device generally as stated above, but, supplied with the putty compound only, for barrier tube filling. Intended to terminate circular braided or unarmoured cables and individual cores into enclosures without compromising the explosion protection. Clamping of the flexible conduit is achieved by a combination of the entry item assembly, tube spacer, conduit anchor, compression sleeve/olive, and compression nut. The compression sleeve/olive is bound to the conduit during assembly when the entry item and compression nut are tightened; thus, providing an environmental seal onto the conduit outer sheath.
• 'REX'
As the PXLT model but is supplied with the RapidEx resin only, for barrier tube filling. Fitted with an additional resin dam component to retain the resin while curing.

Additional Design Options

• The front entry component can be manufactured with a profiled groove to captivate an Oring seal, which locates on the mating face with the associated enclosure. This option having the gland type designation prefixed with the letter 'R'.
• Alternative entry component thread forms; Metric, ET (conduit), PG, BSPP, BSPT, ISO, NPT, and NPSM.
• Alternative material of manufacture of the ferrule and/or skid washer to be the same as the gland material, or nickel-plated brass.
• PXSS2K range can be fitted with the outer seal nut assembly from the PX2K range as an alternative.
• PX2K range glands can be fitted with the outer seal nut assembly from the PXSS2K range as an alternative.
• PX2K, PX2KX, PX2KW, PXB2K, PXB2KX, and PXB2KW range glands can be fitted with armour cones with alternative diameters to allow for the clamping of smaller or larger armour wires, or braids.
• Cable glands can be supplied with larger entry threads than those detailed, provided the wall section is not compromised and IP protection is maintained at the interface.

• An alternative RapidEx resin formulation is available, where slower curing is required for use at higher ambient installation temperatures.
• Intermediate thread sizes are permitted, e.g., M28
• Metric entry threads of all model ranges may be manufactured with a thread pitch between 0.7mm and 2.0mm with 15.mm as standard.

Type designation code:
PX Armoured / Braided Cables

PX2K — Armoured cable gland with outer sheath sealing function.

Blank	No additional option applied.
VAR	Fitted with an additional metallic continuity device for use with Variable Speed Drive (VSD) / Variable Frequency Drive (VFD) and similar screened cables

Blank	Supplied with epoxy putty sealing solution.
REX	Supplied with RapidEx resin sealing solution.

Blank	No additional option applied.
FF	Fitted with a seal suitable for use with flat form cables.

Blank	No additional option applied.
PB	Fitted with an additional metallic continuity device for use with inner lead sheathed S.W.A., strip armoured and braided cables.

Blank	Supplied with both armour and braid cone options.
W	Supplied with armour cone only
X	Supplied with braid cone only.

Blank	No additional option applied.
R	Additional profiled groove and O-Ring deal applied to the entry item.

PXB2KX — Armoured cable gland without outer sheath sealing function, supplied with braid cone.

Blank	Supplied with epoxy putty sealing solution.
REX	Supplied with RapidEx resin sealing solution.

Blank	No additional option applied.
R	Additional profiled groove and O-Ring seal applied to the entry item.

PXSS2K — Armoured cable gland with outer sheath sealing function.

Blank	No additional option applied.
VAR	Fitted with an additional metallic continuity device for use with Variable Speed Drive (VSD) / Variable Frequency Drive (VFD) and similar screened cables
Blank	Supplied with epoxy putty sealing solution.
REX	Supplied with RapidEx resin sealing solution.
Blank	No additional option applied.
FF	Fitted with a seal suitable for use with flat form cables.
Blank	No additional option applied.
PB	Fitted with an additional metallic continuity device for use with inner lead sheathed S.W.A., strip armoured and braided cables.
Blank	No additional option applied.
HC	Replaces standard seal nut with a hose connector seal nut.
Combo	Replaces main body and seal nut assembly with alternative design For cables with larger outer sheaths.
Blank	No additional option applied.
R	Additional profiled groove and O-Ring deal applied to the entry item.

PXFC — Unarmoured cable gland with flexible conduit facility.

Blank	Supplied with epoxy putty sealing solution.
REX	Supplied with RapidEx resin sealing solution.
Blank	No additional option applied.
R	Additional profiled groove and O-Ring seal applied to the entry item.

PXLT — Unarmoured cable gland with Liquid tight outer seal onto flexible conduit facility sheath.

Blank	Supplied with epoxy putty sealing solution.
REX	Supplied with RapidEx resin sealing solution.
Blank	No additional option applied.
R	Additional profiled groove and O-Ring seal applied to the entry item.

PXRC — Unarmoured cable gland with rigid and flexible conduit connection facility.

Blank	Supplied with female rear thread.
M	Supplied with male rear thread.
Blank	Supplied with epoxy putty sealing solution.
REX	Supplied with RapidEx resin sealing solution.
Blank	No additional option applied.
R	Additional profiled groove and O-Ring seal applied to the entry item.

Gland size	Entry thread	Max no. of cores (RAPIDEX)	Max. no. Of cores (EP2122)	Max Ø over cores (mm)	SWA (mm)		SWA, STA, Strip armour, pliable wire armour[1] & wire braid (mm)		PXSS2K[2] outer seal sheath range Ø (mm)		PX**[2] outer seal sheath range Ø (mm)	
					Min	Max	Min	Max	Min	Max	Min	Max
20s/16	M20 x 1.5	21	21	11.7	0.8	1.25	0.3	1.0	3.1	8.6	6.1	13.1
20s	M20 x 1.5	21	21	11.7	0.8	1.25	0.3	1.0	6.1	11.7	9.5	15.9
20	M20 x 1.5	21	21	12.6	0.8	1.25	0.4	1.0	6.5	14.0	12.5	20.9
20L	M20 x 1.5	21	21	12.6	0.8	1.25	0.4	1.0	10.0	15.9	NA	NA
25s	M25 x 1.5	30	30	17.5	1.25	1.6	0.4	1.2	NA	NA	14.0	22.0
25	M25 x 1.5	30	30	17.5	1.25	1.6	0.4	1.2	11.1	20.0	18.2	26.2
32	M32 x 1.5	50	38	23.6	1.6	2.0	0.4	1.2	17.0	26.3	23.7	33.9
32L	M32 x 1.5	50	38	23.6	1.6	2.0	0.4	1.2	20.0	27.4	NA	NA
40	M40 x 1.5	59	59	30.0	1.6	2.0	0.4	1.6	22.0	32.1	27.9	40.4
50s	M50 x 1.5	89	89	36.6	2.0	2.5	0.4	1.6	29.5	38.2	35.2	46.7
50	M50 x 1.5	115	115	41.0	2.0	2.5	0.6	1.6	35.6	44.0	40.4	53.0
63s	M63 x 1.5	115	115	47.9	2.0	2.5	0.6	1.6	40.1	49.9	45.6	59.4
63	M63 x 1.5	115	115	53.7	2.0	2.5	0.6	1.6	47.2	55.9	54.6	56.8
75s	M75 x 1.5	140	140	59.9	2.0	2.5	0.6	1.6	52.8	61.9	59.0	72.0
75	M75 x 1.5	140	140	64.3	2.5	3.15	0.6	1.6	59.1	67.9	66.7	78.4
90	M90 x 2.0	140	140	75.3	3.15	4.0	0.8	1.6	66.6	79.4	76.2	90.3
100	M100 x 2.0	200	200	83.6	3.15	4.0	0.8	1.6	76.0	90.9	86.1	101.4

[1] '2KX' and '2K' variants; see below.
[2] Not PXRC variant.

PX**-FF in these sizes only.

Gland size	Entry thread	Entry thread 'B' version	PXSS2K seal sheath range (mm)		Other PX* seal sheath range (mm)	
			Min	Max	Min	Max
20s	20s M20 x 1.5	M25 x 1.5	4.0 x 6.2	6.8 x 11.7	20s	M20 x 1.5
20	20s M20 x 1.5	M25 x 1.5	5.7 x 8.0	8.7 x 13.5	20	M20 x 1.5

This certificate supersedes all previous documents bearing the reference no XPL/21962/21.0305 Issue 1.

PXLT in these sizes only.

Gland size	Entry thread	Max No. of cores	Max dia over cores (mm)
20	M20 x 1.5	21	12.6
25	M25 x 1.5	30	17.5
32	M32 x 1.5	50	23.6
40	M40 x 1.5	59	30.0
50	M50 x 1.5	89	41.0
63	M63 x 1.5	115	53.7

The PXFC-LTPB range of barrier cable glands is intended for anchoring flexible braided conduit and terminating braided or unarmoured cable.

Conditions of Manufacture
The following conditions are required of the manufacturing process for compliance with the certification.

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.

Based on the following documentation: IECEx CML 18.0182X Issue No.: 1

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)*

i. The glands when used for terminating braided cables are only suitable for fixed installations.
ii. Cables must be effectively clamped to prevent pulling or twisting. The PXB2K, PXB2KX and PXB2KW glands are to be protected from hydraulic fluids, oils, and greases when applied for Group I use.
iii. When assembled for fitting to flexible conduit, the conduit shall be effectively clamped to prevent twisting and pulling.
iv. The PX range of cable glands with entry threads smaller than a M25 (or equivalent) size shall not be used for Group I, EPL Mb applications where there is a 'high' risk of mechanical damage.

4. SCHEDULE OF LIMITATIONS *(denoted by "U" after certificate number)*
None.

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

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	: Cable Glands
Model/Type	: PX**
Serial No.	: ---
Ex Rating	: Ex eb I Mb*
	Ex db I Mb*
	Ex eb IIC Gb
	Ex db IIC Gb
	Ex ta IIIC Da
	Ex nR IIC Gc
	*Aluminium alloy is not acceptable for Group I applications
	-60°C to +85°C
IA Certificate No	: MS-XPL/21.0305 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