Certificate no.:
TAE00004Y6

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Cable Gland

with type designation(s)
RADOFLEx compression gland for use with RADOX OFL cable,
RADOFLEx BAR BARRIER compression gland for use with RADOX OFL cable

issued to
CCG Cable Terminations (Pty) Ltd.
KEMPTON PARK, **South Africa**

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Type	Material	Suitable for open deck	Suitable for Hazardous areas
RADOFLEx compression gland for use with RADOX OFL cable	Metallic	Stainless steel types only	Yes
RADOFLEx BAR BARRIER compression gland for use with RADOX OFL cable	Metallic	Stainless steel types only	Yes

Issued at **Høvik** on **2024-11-19**
This Certificate is valid until **2029-11-18**.
DNV local unit: **UK & Ireland CMC & VMC**

for **DNV**

Approval Engineer: **Ivar Bull**

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This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

Type:	**RADOFLEx compression gland for use with RADOX OFL cable**		
Gland material:	Brass (Marine grade Electroless Nickel Plated™), Aluminium or Stainless Steel 316/316L		
Seal material:	Standard Thermoset Elastomer or Extreme Temperature Seals		
Seal gasket material:	HDPE, Nylon 66 or PTFE		
Cable type:	RADOX® OFL™ S Flame Retardant Cable or RADOX® OFL™ SFR Fire Resistant Cable		
Sealing Area:	Outer Sheath		
Operating temperature range:	Standard Seals:-60°C to +95°C /100°C (HDPE/ Nylon Sealing Gasket) Extreme Temp. Seals: -60°C to +160°C (PTFE Sealing Gasket)		
Degree of protection:	IP66/68 850m – Parallel IP65/66 – Tapered IP68 – Tapered and approved grease		
Gland sizes range:	Metric thread size: 16, 20, 25, 32, 40, 50 NPT thread size: ½", ¾", 1", 1¼", 1½", 2"		
Ex classification:	Ex db IIC, Ex eb IIC, Ex ta IIIC, Ex nR IIC		
Ex certificate number:	IEC/BS EN	IEC/BS EN 62444, 6121	CML 14CA364
	IECEx	IEC 60079 Part 0, 1, 7, 15, 31	IECEx CML 22.0086
	ATEX	BS EN 60079 Part 0, 1, 7, 31	CML 22ATEX1587
		BS EN 60079 Part 0, 15	CML 22ATEX4590
	UKEX	EN 60079 Part 0, 1, 7, 31	CML 22UKEX1588
		EN 60079 Part 0, 15	CML 22UKEX4591
	IP66/68 850m – Parallel	IEC 60529	IECEx CML 22.0086
	IP65/66 – Tapered	IEC 60529	
	IP68 – Tapered and approved grease	IEC 60529	IECEx CML 22.0086
	Deluge Protection	DTS-01	CML 14CA370-2
	Corrosion Protection	ASTM B117-11, BS EN ISO 3231	EXOVA N968667
	EMC Compatible	EN 55011, + A1, EN 55022	SGS EMC305079/1

Type:	**RADOFLEx BAR BARRIER compression gland for use with RADOX OFL cable**		
Gland material:	Brass (Marine grade Electroless Nickel Plated™), Aluminium or Stainless Steel 316/316L		
Seal material:	Standard Thermoset Elastomer or Extreme Temperature Seals		
Seal gasket material:	HDPE, Nylon 66 or PTFE		
Cable type:	RADOX® OFL™ S Flame Retardant Cable or RADOX® OFL™ SFR Fire Resistant Cable		
Sealing Area:	Outer Sheath plus resin seal on conductors		
Continuous operating temperature range:	-60°C to +100°C		
Degree of protection:	IP66/68 850m – Parallel IP65/66 – Tapered IP68 – Tapered and approved grease		
Gland sizes range:	Metric thread size: 16, 20, 25, 32, 40, 50 NPT thread size: ½", ¾", 1", 1¼", 1½", 2"		
Ex classification:	Ex db IIC,Ex eb IIC,Ex ta IIIC,Ex nR IIC		
Ex certificate number:	IEC/BS EN	IEC/BS EN 62444, 6121	CML 14CA364
	IECEx	IEC 60079 Part 0, 1, 7, 15, 31	IECEx CML 22.0086
	ATEX	BS EN 60079 Part 0, 1, 7, 31	CML 22ATEX1587
		BS EN 60079 Part 0, 15	CML 22ATEX4590
	UKEX	EN 60079 Part 0, 1, 7, 31	CML 22UKEX1588
		EN 60079 Part 0, 15	CML 22UKEX4591
	IP66/68 850m – Parallel	IEC 60529	IECEx CML 22.0086
	IP65/66 – Tapered	IEC 60529	
	IP68 – Tapered and approved grease	IEC 60529	IECEx CML 22.0086
	Deluge Protection	DTS-01	CML 14CA370-2
	Corrosion Protection	ASTM B117-11, BS EN ISO 3231	EXOVA N968667
	EMC Compatible	EN 55011, + A1, EN 55022	SGS EMC305079/1

Application/Limitation

Manufacturer's installation description, instructions and DNV rules to be followed.

Not to be used in bulkheads/decks or for penetrating boundaries of tanks.

The information related to Ex certification from recognised test institution is given as information only. Applications where Ex certified equipment is required will in general be subject to approval case by case based on documentation as required in DNV Rules.
Degree of protection will be safeguarded only when sealing and cable entry fittings are properly fitted.
The manufacturer's instructions must be followed.

The installer should ensure that the materials are suitable for the installation environment.

Type Approval documentation

Tests carried out

Type tests in accordance with IEC 60079 Part 0, 1, 7, 15, 31 and IEC 60529.
Salt mist test ASTM B117. Exposure to humid atmospheres containing sulphur dioxide BS EN ISO 3231.

Marking of product

Name of manufacturer – type designation – Ex rating.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer’s product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE