



Certificate no.:
TAE00004UC

TYPE APPROVAL CERTIFICATE

This is to certify:
that the Cable Gland

with type designation(s)
V-TEC VM, V-TEC VM+, V-TEC VM L, V-TEC PG, V-TEC PG+, V-TEC PG L

issued to
OBO Bettermann Hungary Kft.
Bugyi, Hungary

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

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Material	Plastic
Suitable for open deck	No
Suitable for Hazardous areas	No

Issued at **Høvik** on **2024-01-30**

for **DNV**

This Certificate is valid until **2029-01-29**.
DNV local unit: **Budapest**

Approval Engineer: **Carsten Hunsalz**

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

Series	Colour	Sizes
V-TEC VM LGR	Light grey	VM12, VM16, VM20, VM25, VM32, VM40, VM50, VM63
V-TEC VM SGR	Silver grey	VM12, VM16, VM20, VM25, VM32, VM40, VM50, VM63
V-TEC VM SW	Black	VM12, VM16, VM20, VM25, VM32, VM40, VM50, VM63
V-TEC VM RW	Pure white	VM20
V-TEC VM+ LGR	Light grey	VM12, VM16, VM20, VM25, VM32, VM40, VM50, VM63
V-TEC VM L LGR	Light grey	VM12, VM16, VM20, VM25, VM32, VM40, VM50, VM63
V-TEC VM L SGR	Silver grey	VM12, VM16, VM20, VM25, VM32, VM40, VM50, VM63
V-TEC VM L SW	Black	VM12, VM16, VM20, VM25, VM32, VM40, VM50, VM63

Classification according to IEC 62444:

Class	Category
Product Series	V-TEC VM LGR, V-TEC VM SGR, V-TEC VM SW, V-TEC VM RW, V-TEC VM+ LGR, VTEC VM L LGR, V-TEC VM L SGR, V-TEC VM L SW
6.1 Material	Non-metallic
6.2.1 Mechanical properties non-armoured cable	Anchorage Type A
6.2.3 Impact category	VM12/VM16/VM20/VM25 sizes: Category 3 VM32/VM40/VM50/VM63 sizes: Category 4
6.3 Electrical properties	- (With insulating characteristics)
6.4.1 Degree of protection	IP68, 5 bar/1 h
6.4.2 Temperature range	Standard (from -20 to 65°C)
6.4.3 Resistance to external influence	Not declared
6.5 Sealing system	With a single-orifice seal

Series	Colour	Sizes
V-TEC PG LGR	Light grey	PG7, PG9, PG11, PG13,5, PG16, PG21, PG29, PG36, PG42, PG48
V-TEC PG SGR	Silver grey	PG7, PG9, PG11, PG13,5, PG16, PG21, PG29, PG36, PG42, PG48
V-TEC PG RW	Pure white	PG11, PG16
V-TEC PG SW	Black	PG11
V-TEC PG+ LGR	Light grey	PG7, PG9, PG11, PG13,5, PG16, PG21, PG29, PG36, PG42, PG48
V-TEC PG L LGR	Light grey	PG7, PG9, PG11, PG13,5, PG16, PG21, PG29, PG36, PG42
V-TEC PG L SGR	Silver grey	PG9, PG11, PG13,5, PG16, PG21, PG29, PG36

Classification according to IEC 62444:

Class	Category
Product Series	V-TEC PG LGR, V-TEC PG SGR, V-TEC PG RW, V-TEC PG SW, V-TEC PG+ LGR, VTEC PG L LGR, V-TEC PG L SGR
6.1 Material	Non-metallic
6.2.1 Mechanical properties non-armoured cable	Anchorage Type A
6.2.3 Impact category	PG7/PG9/PG11/PG13,5 sizes: Category 3 PG16/PG21/PG29 sizes: Category 4 PG36/PG42/PG48 sizes: Category 5
6.3 Electrical properties	- (With insulating characteristics)
6.4.1 Degree of protection	IP68, 5 bar/1 h
6.4.2 Temperature range	Standard (from -20 to 65°C)
6.4.3 Resistance to external influence	With single-orifice seal
6.5 Sealing system	With single-orifice seal

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.

Not suitable for open deck.

Type Approval documentation

Test reports:

VDE Prüf- und Zertifizierungsinstitut, Abteilung TI Aktenzeichen 2480-1490-1029, dated 05.04.1993

VDE-PZI, F 31, 2480-1492-0002 / 32K3J, dated 30.01.2001,

OBO BETTERMANN no.: 01-130-VTECPG-TypeTests-2023-11-30-TP

Data sheets / drawings:

Catalogue 2024 and drawings of each variant.

Tests carried out

Type tests in accordance with IEC 62444:2010

Marking of product

Name of manufacturer – type designation.

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