CERTIFICATE NUMBER	23-2419600-PDA
EFFECTIVE DATE	17-Jul-2023
EXPIRY DATE	16-Jul-2028
ABS TECHNICAL OFFICE	London Engineering Department

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

HAWKE INTERNATIONAL

located at

OXFORD STREET WEST, ASHTON-UNDER-LYNE, , LANCASHIRE, United Kingdom, OL7 0NA

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product:	**Cable, Glands**
Model:	**Type 321, 321 Oversize, Type 501/421, 501/421 Oversize, 501/423 Oversize, 501/453 RAC, 501/453 RAC Oversize, 501/414, Type 710, 711 and 753, Type 501/453 Universal / Type ICG 653 U...**
Endorsements:	
Tier:	**2 - PDA Issued**

This Product Design Assessment (PDA) Certificate remains valid until 16/Jul/2028 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

SBalakan

Serkan Balakan,Engineer/Consultant

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Tier: 2 - PDA Issued

Product: **Cable, Glands**
Model: **Type 321, 321 Oversize, Type 501/421, 501/421 Oversize, 501/423 Oversize, 501/453 RAC, 501/453 RAC Oversize, 501/414, Type 710, 711 and 753, Type 501/453 Universal / Type ICG 653 Universal, OMNI GLAND, PSG 553 RAC, PSG 421, SB474, CSB 656N, Type 701-X, APEX - A2F, C*e, E1F*, 501/RCG**
Endorsements:

Intended Service:
For use on ABS Classed Vessels and Offshore Installations in accordance with the listed ABS Rules and International Standards.

Description:
Type 321, 321 Oversize
Type 501/453 Universal / ICG 653 /UNIV OMNI GLAND
Type CSB 656N
Type 710, 711 and 753
Type 501/421, 501/421 Oversize, 501/423 Oversize, 501/453 RAC, 501/453 RAC Oversize, 501/414, SB 474
Type PSG 553 RAC, PSG 421
Type 701-X
Type APEX A2F and APEX E1F* Range of Cable Glands
Type: APEX - C*e Range of Cable Glands
Type 501/RCG
Please see the attachment for the Description of the above type of cable glands

Rating:
Type 321, 321 Oversize
IP 66/67
Temperature: Tamb = -60C to +80ºC or +100ºC for the gland types not using the iris type outer seal assembly
Type of Protection: Increased Safety and Dust Protection
Marking: Ex eb IIC Gb, Ex tb IIIC Db; IECEx Certificate: IECEx CML 19.0042X, Issue 1, Date: 28.09.2021
: II 2GD Ex eb IIC Gb, Ex tb IIIC Db; ATEX Certificate: CML 19ATEX3164X, Issue 1, Date: 28.09.2021

Type 501/453 Universal / Type ICG653/UNIV (OMNI GLAND) / 710 / 711 / 753
IP 66/67
Temperature: Tamb = Type 501/453 Universal / Type ICG653/UNIV = -60C to +80ºC
Type / 710 / 711 / 753 = -50C to +80ºC
Type of Protection: Flameproof, Increased Safety and Dust Protection
: Ex II 2G Ex db IIC Gb, II 2G Ex eb IIC Gb, II 2D Ex tb IIIC Db; ATEX Certificate: CML 18ATEX1268X, Issue 3, Date: 28.09.2021
: UL Certification 20190530-E84940: Issue Date: 30.05.2019
Marking for 710 Class I, Groups A, B, C and D Hazardous Locations, Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups F and G; and Class III Hazardous Locations
Marking for 711 Class I, Groups A, B, C and D Hazardous Locations

Type 501/421, 501/421 Oversize, 501/423, 501/421 Oversize, 501/453 RAC, 501/453 RAC Oversize, 501/414, Type SB474, Type PSG 553 RAC and PSG 421
Ingress protection: IP 66/67
Operating Temperature: -60C to +100ºC, Operating Temperature: -60C to +80ºC (PSG glands)
Type of Protection: Flameproof, Increased Safety and Dust Protection
Marking: Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC; IECEx Certificate: IECEx CML 19.0045X, Issue 2, Date: 31.03.2022

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Tier: 2 - PDA Issued

: II 2G D Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC; ATEX Certificate: CML 19ATEX1167X Issue 2, Date: 31.03.2022

Type CSB 656N
IP 66/67
Operating Temperature: -60C to +80ºC
Type of Protection: Increased and Dust Protection
Marking: Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC; IECEx Certificate: IECEx CML 19.0048X, Issue 1, Date: 29.09.2021
: II 2G D Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC; ATEX Certificate: CML 19ATEX1170X Issue 1, Date: 28.09.2021

Type 701-X
IP 66/67
Operating Temperature: -50C to +80ºC
Type of Protection: Flameproof, Increased and Dust Protection
Marking: Class I, Zone I/2, Ex e IIC Gb; Zone 21/22, Ex tb IIIC Db and Ex eb IIC Gb/Gc; Ex tb IIIC Db/Dc, UL Certificate: 20191022-E84940, Date: 22.10.2019

Type: APEX A2F and APEX E1F* Range of Cable Glands
Ingress protection: IP 66/67
Service Temperature Ts: -60C to +130ºC
Type of Protection: Flameproof, Increased and Dust Protection
Marking: Ex II 2G/1D Ex db eb IIC Gb, Ex ta IIIC Da, EU Type Examination Certificate CML 23ATEX1003X Issue 0, IECEx CML 23.0002X issue 0

Type: APEX - C*e Range of Cable Glands
IP 66/67
Service Temperature Ts: -60C to +130ºC
Type of Protection: Increased and Dust Protection
Marking: Ex II 2G/1D Ex eb IIC Gb, Ex ta IIIC Da, EU Type Examination Certificate CML CML 23ATEX1002X Issue 0, IECEx CML 23.0001X issue 0

Type 501/RCG
IP 66/67
Type of Protection: Increased Safety Ex eb, Dust Ex tb
Marking: Ex eb II* T** Gb, Ex tb III* T** Db Tamb = -60°C to +60°C** The equipment can be marked for all Gas and Dust groups, IIA, IIB or IIC and IIIA, IIIB or IIIC.
Ex Certificate CML 20ATEX3217X Issue 1, CML 21UKEX3073X Issue 0, IECEx CML 20.0137X Issue 1

All flameproof approved products (501/421, 501/423, 501/414, 501/453,UNIV, 501/453 RAC, PSG 553 RAC, P/PSG 421, P/SB474, ICG 653 UNIV, CSB 656N, 710,711, 753, APEX E1F* and A2F)have been type tested for up to 30Bar pressure test as per the requirements of IEC/EN 60079-1.

Service Restriction:
- Unit Certification is not required for this product.
- If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
- ATEX certified equipment is not to be installed in hazardous areas on U.S vessels unless it can be proven to have been tested to the applicable IEC 60079 series standards by an independent laboratory accepted by the U.S coast Guard. USCG notice 01-12 (February 7, 2012).
- All electrical equipment intended for installation in hazardous areas are to be certified safe type based on the class of

the hazardous area at its location of installation. Certificates in this regard are to be presented to the ABS Surveyor for verification on a case by case basis.
- Unless specially directed by Administration, this approval is not to be construed as a substitute for flag Administration's approval.

Comments:
1) Special conditions apply as per IECEx and ATEX certificates for all of the cable gland types listed in the certificates..
2) Manufacturers' assembly instructions are to be strictly followed during installation.
3) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
4) The manufacturer's application instructions and manufacturer's assembly installation to be followed.
5) The attending Surveyor is to verify traceability between manufacturer's product type marking and type approval certificate
6) The internal parts of the following gland's (Type 501/453 Universal / Type ICG653/UNIV (OMNI GLAND) are interchangeable with respect to the type of application. The 'deluge boot' colour indicates the internal component that are used, the ICG/653/UNIV being indicated by a red deluge boot. The 501/453/UNIV being indicated by a black deluge boot. See IECEx CML 18.0131X
7) Specific conditions for 701-X gland apply as per Cable Gland Assembly Instructions.
8) The PSG/553/RAC and SB 474 cables glands are limited to an operating temperature range of -60°C to +80°C, unless marked "P PSG/553/RAC" and "P SB 474" respectively.

Notes/Drawing/Documentation:
Drawing list under 23-2419600-PDA
Drawing No. CML23ATEX1002X, EU Type Examination Certificate for APEX - C*e Range of Cable Glands, Revision: 0, Date: 08.05.2023, Pages: 4
Drawing No. CML23ATEX1003X, EU Type Examination Certificate for APEX - A2F & E1F*, Revision: 0, Date: 08.05.2023, Pages: 4
Drawing No. IECEx CML 23.0001X, IEC Ex Certificate for APEX - C*e Range of Cable Glands, Revision: 0, Date: 08.05.2023, Pages: 5
Drawing No. IECEx CML 23.0002X, IEC Ex Certificate for APEX - A2F& E1F* Range of Cable Glands, Revision: 0, Date: 08.05.2023, Pages: 5
Drawing No. GB-BAS-ExTR 06.0011/00, Baseefa test report for 501/421, 501/423, 501/414, 501/453, 501/453 RAC, PSG 553 RAC, Baseefa UK, Date 18.07.2006, Revision: -, Pages: 22
Drawing No. GB-BAS-ExTR 06.0013/00, Baseefa test report for ICG 653, CSB 656N, Baseefa UK, Date 18.07.2006, Revision: -, Pages: 22
Drawing No. R11909A/00, CML Evaluation report, CML Certification management Limited, UK, , Date 01.05.2019, Revision: -, Pages: 64
Drawing No. R16051A/00, Eurofins Evaluation report, CML BV, The Netherlands, Date 08.05.2023, Revision: -, Pages: 70
Drawing No. R14930A/00, Eurofins Evaluation report (Variation), CML BV, The Netherlands, Date 31.03.2022, Revision: -, Pages: 25
Drawing No. R14930A/00, Eurofins Evaluation report (Variation), CML BV, The Netherlands, Date 31.03.2022, Revision: -, Pages: 25
Drawing No. DOC, All Products, Revision: -, Pages: 1
Drawing No. CML 20ATEX3217X, EU Type Examination Certificate for Type 501/RCG Cable Glands, Revision: 01, Date: 16.02.2021, Pages: 5
Drawing No. CML 21UKEX3073X, EU Type Examination Certificate for Type 501/RCG Cable Glands, Revision: 00, Date: 01.01.2021, Pages: 5
Drawing No. IECEx CML 20.0137X Issue 1, IEC Ex Certificate for Type 501/RCG, Revision: 1, Date: 18.02.2021, Pages: 4
Drawing No. IECEx CML 20.0137X Issue 0, IEC Ex Certificate for Type 501/RCG, Revision: 0, Date: 18.02.2021, Pages: 6

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Drawing No. R13490A/00, Eurofins Evaluation report, CML BV, The Netherlands, Date: 18.12.2020, Revision: -, Pages: 49
Drawing No. R13863A/00, Eurofins Evaluation report, CML BV, The Netherlands, Date: 16.02.2021, Revision: -, Pages: 16
Drawing No. 620155, 501/RCG Certification Drawing, Revision: -, Pages: 6
Drawing No. CML 19ATEX1167X, EU Type Examination Certificate, Revision: 2, Date: 31.03.2022, Pages: 5
Drawing No. CML 19ATEX1170X, EU Type Examination Certificate, Revision: 1, Date: 28.09.2021, Pages: 4
Drawing No. CML 19ATEX3164X, EU Type Examination Certificate, Revision: 1, Date: 28.09.2021, Pages: 5
Drawing No. CML 20ATEX3217X, EU Type Examination Certificate, Revision: 1, Date: 28.09.2021, Pages: 5
Drawing No. IECEx CML 19.0042X, IECEx Certificate of Conformity, Revision: 1, Date: 28.09.2021, Pages: 6
Drawing No. IECEx CML 19.0045X, IECEx Certificate of Conformity, Revision: 2, Date: 31.03.2022, Pages: 7
Drawing No. IECEx CML 19.0048X, IECEx Certificate of Conformity, Revision: 1, Date: 29.09.2021, Pages: 6
Drawing No. CML 18ATEX1268X, EU Type Examination Certificate, Revision: 3, Date: 29.09.2021, Pages: 8

Drawing list under 19-LD-1876514-1-PDA
Drawing No. 1166X 0044X, General Arrangement 453_UNIV, Revision: A, Pages: 1
Drawing No. 1167X 0045X, General Arrangement for Unarmoured 501 421 Oversized Gland, Revision: H, Pages: 1
Drawing No. General Arrangement for Unarmoured 321,321 oversized Gland, Revision: A, Pages: 5
Drawing No. Glands Matrix 3014, Glands Matrix 3014, Revision: AD, Pages: 1
Drawing No. ICG-453-OMNI, General Arrangement 501_453_UNIV, 710, 711, 753, ICG_653_UNIV_X, Omni Gland X, Revision: A, Pages: 11
Drawing No. CML 18ATEX1268X, EU Type Examination Certificate, Revision: 0, Date: 10.05.2019, Pages: 7
Drawing No. CML 19ATEX1167X, EU Type Examination Certificate, Revision: 0, Date: 04.06.2019, Pages: 5
Drawing No. CML 19ATEX1170X, EU Type Examination Certificate, Revision: 0, Date: 04.06.2019, Pages: 3
Drawing No. CML 19ATEX3164X, EU Type Examination Certificate, Revision: 0, Date: 04.06.2019, Pages: 4
Drawing No. IECEx CML 18.0131X, IECEx Certificate of Conformity, Revision: 0, Date: 10.05.2019, Pages: 9
Drawing No. IECEx CML 19.0042X, IECEx Certificate of Conformity, Revision: 0, Date: 04.06.2019, Pages: 5
Drawing No. IECEx CML 19.0045X, IECEx Certificate of Conformity, Revision: 0, Date: 04.06.2019, Pages: 5
Drawing No. IECEx CML 19.0048X, IECEx Certificate of Conformity, Revision: 0, Date: 04.06.2019, Pages: 4
Drawing No. R11908A-00, Evaluation Report, CML EX Certification Management Limited, UK, Version: 16.0, Date: 04.06.2019, Pages: 24
Drawing No. R11909A_00, Evaluation Report, CML EX Certification Management Limited, UK, Version: 16.0, Date: 10.05.2019 Pages: 64
Drawing No. AI 2024, Cable Gland Assembly Instructions, Pages: 04
Drawing No. 20191022-E84940, UL Certificate of Compliance, Revision: -, Pages: 04
Drawing No. E84940-Project 4788687613, Report, Hawke International, UK, Revision: -, Date: 03.10.2019, Pages: 11
Drawing No. E84940-Project 02NK28179, Report, Hawke International, UK, Revision: -, Date: 28.06.2011, Pages: 14
Drawing No. 701, Cable Gland Assembly Instructions, Revision: -, Pages: 4
Drawing No. 701-X, Data sheet, Revision: -, Pages: 2

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 16/Jul/2028 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for

construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:
- Marine Vessels Rules (2023): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.7, 4-8-3/1.11, 4-8-3/13 and 4-8-4/27.5.1
- Steel Vessels for Service on Rivers and Intracoastal Waterways Rules (2023): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-5-1/3.9, 4-5-1/13, 4-5-1/17, 4-5-1/19, 4-5-3/11.1.1 (a)
- Steel Barge Rules (2023): 1-1-4/7.7, 1-1-A3, 1-1-A4
- High Speed Crafts (2023): 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-6-1/3.9, 4-6-1/3.17, 4-6-1/3.17, 4-6-1/15, 4-6-1/17, 4-6-3/9.1.1 (a),
- Mobile Offshore Units (2023): 1-1-4/9.7, 1-1-A2, 1-1-A3, 6-1-1/9, 6-1-1/13, 4-1-1/7.9, 4-3-1/3.7, 4-3-1/3.17, 4-3-1/15, 4-3-1/17, 4-3-3/9.1.2
- Facilities on Offshore Installations (2023): 1-1-4/9.7, 1-1-A2, 1-1-A3;

National:
NA

International:
321, 321 Oversize
EN IEC 60079-0: 2018, EN IEC 60079-7:2015+A1:2018, EN IEC 60079-31:2014;

501/453 Universal, ICG653/UNIV, OMNI GLAND, 710, 711, 753, CSB 656N
IEC 60079-0 Ed 7.0: 2017, IEC 60079-1 Ed 7.0:2014, IEC 60079-7 Ed 5.1: 2017;
EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7:2015+A1:2018, EN 60079-31:2014;
UL 514B, UL2225 - only for Type 710, 711, 753;

501/421, 501/423, 501/453 RAC, 501/414, SB 474, PSG 553 RAC, PSG 421
IEC 60079-0 Ed 7.0: 2017, IEC 60079-1 Ed 7.0:2014, IEC 60079-7 Ed 5.0: 2015;
EN 60079-0: 2018, EN 60079-1: 2014, EN 60079-7:2015+A1:2018, EN 60079-31:2014;

701-X, 710, 711
UL 2225 Ed4.0; 2013, UL 514B Ed6.0; 2012;
CSA C22.2 No. 18.3-12, CSA C22.2 No. 60079-0: 2019, CSA C22.2 No. 60079-1: 2016, CSA C22.2 No. 60079-7: 2016, CSA C22.2 No. 60079-31: 2015;

APEX A2F, APEX E1F* Range
EN 60079-0:2018, EN 60079-1: 2014, EN 60079-7:2015+A1:2018, EN 60079-31:2014;

APEX C*e Range
EN 60079-0:2018, EN 60079-7:2015+A1:2018, EN 60079-31:2014;

Government:
NA

EUMED:
NA

OTHERS:
NA