



CERTIFICATE NUMBER	22-2289131-PDA
EFFECTIVE DATE	26-Aug-2022
EXPIRY DATE	25-Aug-2027
ABS TECHNICAL OFFICE	Houston ESD - Piping

## CERTIFICATE OF Product Design Assessment

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

**DINAK, S.A.**

located at

**CAMINO DO LARANXO, 19, , VIGO, Spain, 36216**

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:** Exhaust Gas Piping System  
**Model:** GE NAVAL: GE 30+, GE 50+, GE 50, GE 100 & GE 100+  
**Endorsements:**  
**Tier:** 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 25/Aug/2027 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

*John Vincent B. Ulep*

John Vincent Bog-Acon Ulep, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

**DINAK**

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**Product:** Exhaust Gas Piping System

**Model:** GE NAVAL: GE 30+, GE 50+, GE 50, GE 100 & GE 100+

**Endorsements:**

**Intended Service:**

Marine and Offshore Applications: Exhaust Piping System

**Description:**

The DINAK GE NAVAL range is prefabricated stainless steel exhaust system made up of modular ducts with double Rockwool insulation and has a complete anchoring system and accessories specially designed for shipping facilities.

Material Specifications:

(GE 30+, GE 50+, GE 50, GE 100, GE 100 +)

Inner Wall - For Engines, Generators, Boilers (condensing and dry conditions), Incinerators: Stainless Steel AISI 316L (1.4404)

Inner Wall - For Engines, Generators, Boilers (dry conditions): Stainless Steel AISI 304 (1.4301)

Outer Wall - For Non-Saline Environments (interior lakes and rivers): Stainless Steel AISI 304 (1.4301) and AISI-316L (1.4404)

Outer Wall - For Saline and Maritime Environments: Stainless Steel AISI 316L (1.4404) and AISI-304 (1.4301)

[Funnel Interior and Engine Room only]

**Insulation:**

GE 30+: 30 mm thickness and 130 kg/m<sup>3</sup> density Rockwool

GE 50+: 50 mm thickness and 100 kg/m<sup>3</sup> density Rockwool

GE 50: 50 mm thickness and 100 kg/m<sup>3</sup> density Rockwool

GE 100: 100 mm thickness and 100 kg/m<sup>3</sup> density Rockwool

GE 100+: 100 mm thickness and 100 kg/m<sup>3</sup> density Rockwool

**Joint Insulation:**

GE 30+, GE 50+ and GE 100+: Rockwool

GE 50 and GE 100: Biosoluble ceramic fiber

**Rating:**

Size Range:

GE 30+, GE 50+, GE 100+: 80 mm - 600 mm diameters;

GE 50 and GE 100: 80 mm - 800 mm diameters

Maximum Working Temperature: 600 deg C (1112 deg F)

Maximum Working Pressure: 5000 Pa (0.725 psi)

**Service Restriction:**

1. Unit Certification is not required for this product. If the manufacturer or purchaser's request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

2. Surface temperatures for exhaust system are not to exceed 220 deg. Celsius and where exhaust piping interconnects with another piping system, connections and/or not insulated components are to be efficiently lagged.

3. Exhaust gas piping systems are to be installed in accordance with the manufacturer's recommendations and 4-6-5/11.9 of the Marine Vessel Rules.

4. Exhaust piping penetrations are to be approved as per 4-6-2/9.7 of the Marine Vessel Rules.

**Comments:**

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

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### **Notes/Drawing/Documentation:**

Drawing No. 17-015-058, CONSTRUCTION DETAILS diameter 80-280 - diameter 100-300\_1, Revision: -,  
Drawing No. 17-015-059, CONSTRUCTION DETAILS diameter 125-325 - diameter 00-600\_1, Revision: -,  
Drawing No. 17-015-060, CONSTRUCTION DETAILS diameter 450-650 - diameter 600-800\_1, Revision: -,  
Drawing No. 17-015-061, STRAIGHT LENGTH diameter 80-280 - diameter 100-300\_1, Revision: -,  
Drawing No. 17-015-062, STRAIGHT LENGTH diameter 125-325 - diameter 400-600\_1, Revision: -,  
Drawing No. 17-015-063, STRAIGHT LENGTH diameter 450-650 - diameter 600-800\_1, Revision: -,  
Drawing No. 17-015-064, TEE diameter 80-280 - diameter 100-300\_1, Revision: -,  
Drawing No. 17-015-065, TEE diameter 125-325 - diameter 400-600\_1, Revision: -,  
Drawing No. 17-015-066, TEE diameter 450-650 - diameter 600-800\_1, Revision: -,  
Drawing No. 17-015-067, ELBOW diameter 80-280 - diameter 100-300\_1, Revision: -,  
Drawing No. 17-015-068, ELBOW diameter 125-325 - diameter 400-600\_1, Revision: -,  
Drawing No. 17-015-069, ELBOW diameter 450-650 - diameter 600-800\_1, Revision: -,  
Drawing No. CE mark GE+ - en\_3, CE mark GE+ - en\_3, dated 09-25-2020, Revision: -,  
Drawing No. CE mark GE37, GE50, GE100, GE150 - eng\_4, CE mark GE37, GE50, GE100, GE150 - eng\_4, dated 09-26-2011, Revision: -,  
Drawing No. CertificadoER-1010-2010\_2019, CertificadoER-1010-2010\_2019, dated 09-20-2019 Revision: -,  
Drawing No. Correspondence, PDA Application, Revision: -,  
Drawing No. DINAK GE100+ A2238-01-19, DINAK GE100+ A2238-01-19, dated 09-09-2019, Revision: -,  
Drawing No. DINAK GE25+,GE30+ A2238-00-16, DINAK GE25+,GE30+ A2238-00-16, dated 05-12-2016, Revision: -,  
Drawing No. DINAK GE50+ A2157-00-15, DINAK GE50+ A2157-00-15, dated 04-23-2015, Revision: -,  
Drawing No. DOC, Declaration of Conformity (existing products), Revision: -,  
Drawing No. GE - DoP - V00 - eng, GE - DoP - V00 - eng, Revision: -,  
Drawing No. GE+ - DoP - V06 - en, GE+ - DoP - V06 - en, Revision: -,  
Drawing No. IQNetES-1010-2010\_2019-09-10\_IN, IQNetES-1010-2010\_2019-09-10\_IN, Revision: -,

### **Terms of Validity:**

This Product Design Assessment (PDA) Certificate remains valid until 25/Aug/2027 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).

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### **STANDARDS**

#### **ABS Rules:**

Rules for Conditions of Classification, Part 1 - 2022 Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:  
2022 Rules for Building and Classing Marine Vessel Rules: 4-6-5/11;

Rules for Conditions of Classification, Part 1 - 2022 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:  
2022 Building and Classing Mobile Offshore Unit Rules: 4-2-6/13

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**National:**

NA

**International:**

NA

**Government:**

NA

**EUMED:**

DIN EN-1856-1 (2009)

**OTHERS:**

NA