

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Side Scuttles**

with type designation(s)  
**NW/RW/LW**

Issued to

**BOHAMET S.A.**  
**Biale Blota, Poland**

is found to comply with

**DNV GL class programme DNVGL-CP-0094 – Type approval – Side scuttles and windows**

**DNV GL rules for classification – Ships**

**DNV GL rules for classification – High speed and light craft**

**DNV GL offshore standards**

**DNV Standards for Certification No. 2.21, Craft (2010)**

**Application :**

**Side scuttles with deadlight, welded.**

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

This Certificate is valid until **2021-05-18**.

Issued at **Høvik** on **2016-05-19**

DNV GL local station: **Gdansk**

Approval Engineer: **Gisle Hersvik**

for **DNV GL**

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**Arnstein Gloppen**  
**Head of Section**

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.

## Product description

**NW/RW/LW;** Side scuttles with deadlight, welded, based on ISO 1751, "Ships and marine technology - Ships' side scuttles", and in the following constructions:

- **NW:** Non opening side scuttle with cover – NW type

| Nominal size [mm] | Glass thickness (Type A) [mm] | Number of fasteners (Type A) |
|-------------------|-------------------------------|------------------------------|
| 200               | 10                            | 2                            |
| 250               | 12                            | 2                            |
| 300               | 15                            | 3                            |
| 350               | 15                            | 3                            |
| 400               | 19                            | 3                            |
| 450               | -                             | -                            |

| Nominal size [mm] | Glass thickness (Type B) [mm] | Number of fasteners (Type B) |
|-------------------|-------------------------------|------------------------------|
| 200               | 8                             | 2                            |
| 250               | 8                             | 2                            |
| 300               | 10                            | 2                            |
| 350               | 12                            | 3                            |
| 400               | 12                            | 3                            |
| 450               | 15                            | 3                            |

- **RW/LW:** Opening side scuttle with cover – IW type

| Nominal size [mm] | Glass thickness (Type A) [mm] | Number of fasteners – glass frame (Type A) | Number of fasteners – storm cover (Type A) |
|-------------------|-------------------------------|--------------------------------------------|--------------------------------------------|
| 200               | 10                            | 2                                          | 2                                          |
| 250               | 12                            | 3                                          | 2                                          |
| 300               | 15                            | 3                                          | 3                                          |
| 350               | 15                            | 3                                          | 3                                          |
| 400               | 19                            | 3                                          | 3                                          |
| 450               | -                             | -                                          | -                                          |

| Nominal size [mm] | Glass thickness (Type B) [mm] | Number of fasteners – glass frame (Type B) | Number of fasteners – storm cover (Type B) |
|-------------------|-------------------------------|--------------------------------------------|--------------------------------------------|
| 200               | 8                             | 2                                          | 2                                          |
| 250               | 8                             | 3                                          | 2                                          |
| 300               | 10                            | 2                                          | 2                                          |
| 350               | 12                            | 3                                          | 3                                          |
| 400               | 12                            | 3                                          | 3                                          |
| 450               | 15                            | 4                                          | 3                                          |

## Application/Limitation

Glass panes to be in accordance with ISO 614:2012 (or as later amended), "*Ships and marine technology -- Toughened safety glass panes for rectangular windows and side scuttles -- Punch method of non-destructive strength testing*" and ISO 21005:2012 (or as later amended), "*Ships and marine technology -- Thermally toughened safety glass panes for windows and side scuttles*".

Gaskets to be in accordance with ISO 3902:1990 (or as later amended), "*Shipbuilding and marine structures - Gaskets for rectangular windows and side scuttles*".

Materials in frame, glassholder, glass retaining ring and deadlight to be in accordance with ISO 1751:2012 (or as later amended), "*Ships and marine technology -- Ships'side scuttles*".

The thickness of the glass retaining ring is not in line with ISO 1751 (which is 8 mm), but it has been documented by testing that Bohamet's specification of 5 mm is giving similar or better performance.

The side scuttles are to be mounted in accordance with the mounting instructions provided by the Manufacturer.

The type approval does only cover the structural requirements for the side scuttle's design.

Deadlights are to be fitted if the side scuttles are located in positions where such are required either by the International Convention on Load Lines, DNV GL Rules for Classification of Ships or DNV GL Offshore Standards.

Thickness of the glass pane of the toughened safety glass is to comply with ISO 21005, where the design pressure is taken from DNV GL Rules for Classification of Ships and ISO 5780:1987 (or as later amended), "*Shipbuilding -- Side scuttles -- Positioning*". The thickness of the glass pane will be approved on a case-by-case basis by DNV GL.

## Type Approval documentation

### Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

The glass panes are to be tested in accordance with ISO 614.

Side scuttles have been prototype tested in accordance with ISO 1751:1993, Ch.8 "Testing".

## Marking of product

The side scuttles shall be marked with the letter corresponding to the side scuttle type (A or B).

The glass pane is to be marked in accordance with ISO 614. The product shall also be marked with;

- Manufactures name or trade-mark,
- Nominal size and
- DNV GL Type Approval Certificate number.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV GL Type Approval Certificate.

## Periodical assessment

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



Job Id: **262.1-011599-3**  
Certificate No: **TAS00000EB**

Periodical Assessment to be performed after 2 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and the DNV GL Type Approval Certificate.

END OF CERTIFICATE