DNV·GL

Certificate No:
TAS00002HB

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Watertight steel flush hatch

with type designation(s)
WRH-F S3

Issued to
Libra-Plast A/S
HAREID, Norway

is found to comply with
DNV GL rules for classification – Ships
DNVGL-OS-C301 – Stability and watertight integrity
DNV GL rules for classification – High speed and light craft

Application :

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

Size	**1100 mm x 1400 mm**
Pressure (kN/m²)	**from 46 to 150**

Issued at **Høvik** on **2020-05-25**

This Certificate is valid until **2025-05-24**.

for **DNV GL**

DNV GL local station: **Norway Newbuilding**

Approval Engineer: **Grzegorz Wolski**

Håvard Helling
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Product description

WRH-F S3
Is a hatch fabricated from 6 mm thick steel main plate. Plate is reinforced by up to five L profiles of 50 mm x 50 mm x 6 mm welded to the main plate by intermittent welding in middle and by double continuous welding at its ends. Edge of hatch is stiffened by gasket rim welded at 90 degree angle to the main plate.

Hatch is of single acting type with up to ten linked toggles and handle mounted centrally or close to non hinged edge of hatch.

For further details see the drawings listed under Type Approval documentation below.

Application/Limitation

The application is limited to vessels built to DNV GL rules and for a design pressure as per table below.

Light opening (width)	Light opening (length)	Stiffener spacing [mm]	Gasket rim (height) [mm]	Gasket rim (breadth) [mm]	Stiffener	Pressure [kPa]
400	600	N/A	50 80	8 8	N/A	150
600	600	N/A	50 80	8 8	N/A	105
700	700	N/A	50 80	8 8	N/A	75
800	600	263	50 80	8 8	FB 50x8	115 150
800	600	263	50 80	8 8	FB 50x10	115 150
800	600	263	80 80	8 8	FB 80x10 L 50x50x6	150 150
800	800	263	50 80	8 8	FB 50x8	80
800	800	263	50 80	8 8	FB 50x10	100
800	800	263	80 80	8 8	FB 80x10 L 50x50x6	150
1000	1000	230	50 80	8 8	FB 50x8	55
1000	1000	230	50 80	8 8	FB 50x10	70
1000	1000	230	80 80	8 8	FB 80x10 L 50x50x6	135
1100	1400	230	50 80	8 8	FB 50x8	45
1100	1400	230	50 80	8 8	FB 50x10	60
1100	1400	230	80 80	8 8	FB 80x10 L 50x50x6	135 135

Watertight appliances are subject to hydrostatic pressure test that can be done before installation on board of the vessel and shall be witnessed by a DNV GL surveyor. This test is to be made from the side that is most prone to leakage.

Watertight appliances are subject for hose and function testing after installation onboard the vessel, witnessed by a DNV GL surveyor, except in cases where plan approval of the hatch arrangement determines that tests are not required.

Hatches are calculated with respect to water pressure only, any other loading pattern (wheel loads etc.) is to be assessed on a case by case basis.

Hatches cannot be used as emergency exit type.

Dimensions of the light opening of the hatch can be smaller than shown on the drawings, provided that scantlings, maximum distance between the cleats and fabrication method and material are maintained.

Particular consideration shall be given if located in highly stressed areas or in areas critical to fatigue from global hull loads.

Type Approval documentation

Test report No. 740 dated 19 March 2020 from manufacturer.

Drawing No. A-3-01520 Rev. 2 dated 20 February 2020 from manufacturer.
Drawing No. A-3-01522 Rev. 2 dated 20 February 2020 from manufacturer.

Tests carried out

According to DNV GL rules for classification: Class Programme DNVGL-CP-0338, September 2018.

Marking of product

The product or packing is to be marked with name and address of manufacturer, type designation, approved pressure and certificate number.

Periodical assessment

DNV GL surveyor is to be given permission to perform a Certification Retention Survey at any time during the validity period of this certificate and at least every second year.