

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Weathertight Door

with type designation(s)
Weathertight GRP door type WTD100/WTD30

Issued to

Libra-Plast A/S
HAREID, Norway

is found to comply with
DNV GL rules for classification – Ships

Application :

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

This Certificate is valid until **2021-12-04**.

Issued at **Høvik** on **2016-12-05**

DNV GL local station: **Ulsteinvik**

Approval Engineer: **Alessandro Russo**

for **DNV GL**

Arild Rogne
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

- Weathertight single leaf door in different sizes and allowable pressures as listed below.
 - Optional side scuttle with diameter up to 300 mm. Glazing material with thickness 10 mm made from toughened safety glass can be used only with door width 600 mm or more. For 550 mm door a side scuttle of 250 mm is accepted.
 - Optional window with rounded corners with glazing material with thickness 10 mm made from toughened safety glass.
- Window clear opening size (glass) cannot be larger than door light opening width minus 300 mm (so there will be at least 150 mm of door material at each side of the window).
- Optional dead light may be used with each doors.
 - The doors can be equipped with cylinder lock. In such case it may not be fitted along designated escape routes if the locking arrangement:
 - obstruct escape or accesses and
 - require a key to unlock them when moving in the direction of escape

Size			"190 configuration"				Pressure
Light opening		L.O.	POS-1		POS-2		Pd
Width	Height	Radius	Toggles	Hinges	Toggles	Hinges	(Max. Design)
[mm]	[mm]	[mm]	[n]	[n]	[n]	[n]	[kN/m2]
550	1400	100	3	3	2	2	75
600	1400	100	3	3	2	2	75
650	1400	100	3	3	2	2	75
700	1400	100	3	3	2	2	75
750	1400	100	3	3	2	2	75
800	1400	100	5	3	4	2	75
850	1400	100	5	3	4	2	75
900	1400	100	5	3	4	2	75
950	1400	100	5	3	4	2	75
1000	1400	100	5	3	4	2	75
500	1500	100	3	3	2	2	75
625	1500	100	3	3	2	2	75
700	1500	100	3	3	2	2	75
800	1500	100	5	3	4	2	75
550	1600	100	3	3	4	2	75
600	1600	100	3	3	4	2	75
650	1600	100	3	3	4	2	75
700	1600	100	3	3	4	2	75
750	1600	100	3	3	4	2	75
800	1600	100	5	3	4	2	75
850	1600	100	5	3	4	2	75
900	1600	100	5	3	4	2	75
950	1600	100	5	3	4	2	75
1000	1600	100	5	3	4	2	75
625	1650	100	3	3	4	2	60

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750	1650	100	3	3	4	2	60
825	1650	100	5	3	4	2	60
600	1700	100	3	3	4	2	60
700	1700	100	3	3	4	2	60
750	1700	100	3	3	4	2	60
800	1700	100	5	3	4	2	60
820	1700	100	5	3	4	2	60
850	1700	100	5	3	4	2	60
900	1700	100	5	3	4	2	60
950	1700	100	5	3	4	2	60
1000	1700	100	5	3	4	2	60
700	1750	100	3	3	4	2	60
750	1750	100	3	3	4	2	60
800	1750	100	5	3	4	2	60
850	1750	100	5	3	4	2	60
900	1750	100	5	3	4	2	60
750	1770	100	3	3	4	2	60
900	1770	100	5	3	4	2	60
900	1870	100	5	3	4	2	60
600	1800	100	3	3	4	2	60
650	1800	100	3	3	4	2	60
700	1800	100	3	3	4	2	60
750	1800	100	3	3	4	2	60
800	1800	100	5	3	4	2	60
850	1800	100	5	3	4	2	60
900	1800	100	5	3	4	2	60
700	1850	100	3	3	4	2	60
750	1850	100	3	3	4	2	60
800	1850	100	5	3	4	2	60
900	1850	100	5	3	4	2	60
625	1862	100	3	3	4	2	60
700	1900	100	3	3	4	2	60
800	1900	100	5	3	4	2	60
900	1900	100	5	3	4	2	60
1000	1900	100	5	3	4	2	60
650	1950	100	3	3	4	2	60
1400	1950	100	5	3	5	3	42.5
820	2000	100	5	3	4	2	60
900	2000	100	5	3	4	2	60
920	2000	100	5	3	4	2	60

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1020	2000	100	5	3	4	2	60
800	2050	100	5	3	4	2	60
900	2200	100	5	3	4	2	60
660	1460	30	3	3	2	2	75
810	1460	30	5	3	4	2	75
660	1660	30	3	3	4	2	60
810	1660	30	5	3	4	2	60
660	1860	30	3	3	4	2	60
810	1860	30	5	3	4	2	60

Size			"350 configuration"				Pressure
Light opening		L.O.	POS-1		POS-2		Pd
Width	Height	Radius	Toggles	Hinges	Toggles	Hinges	(Max. Design)
[mm]	[mm]	[mm]	[n]	[n]	[n]	[n]	[kN/m2]
550	1400	100	2	2	2	2	75
600	1400	100	2	2	2	2	75
650	1400	100	2	2	2	2	75
700	1400	100	2	2	2	2	75
750	1400	100	2	2	2	2	75
800	1400	100	4	2	4	2	75
850	1400	100	4	2	4	2	75
900	1400	100	4	2	4	2	75
950	1400	100	4	2	4	2	75
1000	1400	100	4	2	4	2	75
500	1500	100	2	2	2	2	75
625	1500	100	2	2	2	2	75
700	1500	100	2	2	2	2	75
800	1500	100	4	2	4	2	75
550	1600	100	4	2	4	2	75
600	1600	100	4	2	4	2	75
650	1600	100	4	2	4	2	75
700	1600	100	4	2	4	2	75
750	1600	100	4	2	4	2	75
800	1600	100	5	3	4	2	75
850	1600	100	5	3	4	2	75
900	1600	100	5	3	4	2	75
950	1600	100	5	3	4	2	75
1000	1600	100	5	3	4	2	75
625	1650	100	4	2	4	2	60
750	1650	100	4	2	4	2	60
825	1650	100	5	3	4	2	60

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600	1700	100	4	2	4	2	60
700	1700	100	4	2	4	2	60
750	1700	100	4	2	4	2	60
800	1700	100	5	3	4	2	60
820	1700	100	5	3	4	2	60
850	1700	100	5	3	4	2	60
900	1700	100	5	3	4	2	60
950	1700	100	5	3	4	2	60
1000	1700	100	5	3	4	2	60
700	1750	100	4	2	4	2	60
750	1750	100	4	2	4	2	60
800	1750	100	5	3	4	2	60
850	1750	100	5	3	4	2	60
900	1750	100	5	3	4	2	60
750	1770	100	4	2	4	2	60
900	1770	100	5	3	4	2	60
900	1870	100	5	3	4	2	60
600	1800	100	4	2	4	2	60
650	1800	100	4	2	4	2	60
700	1800	100	4	2	4	2	60
750	1800	100	4	2	4	2	60
800	1800	100	5	3	4	2	60
850	1800	100	5	3	4	2	60
900	1800	100	5	3	4	2	60
700	1850	100	4	2	4	2	60
750	1850	100	4	2	4	2	60
800	1850	100	5	3	4	2	60
900	1850	100	5	3	4	2	60
625	1862	100	4	2	4	2	60
700	1900	100	4	2	4	2	60
800	1900	100	5	3	4	2	60
900	1900	100	5	3	4	2	60
1000	1900	100	5	3	4	2	60
650	1950	100	4	2	4	2	60
1400	1950	100	5	3	5	3	42.5
820	2000	100	5	3	4	2	60
900	2000	100	5	3	4	2	60
920	2000	100	5	3	4	2	60
1020	2000	100	5	3	4	2	60
800	2050	100	5	3	4	2	60

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900	2200	100	5	3	4	2	60
660	1460	30	2	2	2	2	75
810	1460	30	4	2	4	2	75
660	1660	30	4	2	4	2	60
810	1660	30	5	3	4	2	60
660	1860	30	4	2	4	2	60
810	1860	30	5	3	4	2	60

Size			"150 configuration"				Pressure
Light opening		L.O.	POS-1		POS-2		Pd
Width	Height	Radius	Toggles	Hinges	Toggles	Hinges	(Max. Design)
[mm]	[mm]	[mm]	[n]	[n]	[n]	[n]	[kN/m2]
500	500	100	2	2	2	2	60
800	500	100	2	2	2	2	60
500	800	100	2	2	2	2	60
400	600	100	2	2	2	2	60
600	400	100	2	2	2	2	60
600	600	100	2	2	2	2	60
600	800	100	2	2	2	2	60
800	600	100	2	2	2	2	60
600	1200	100	3	3	2	2	60
1200	600	100	4	2	2	2	60
650	650	100	2	2	2	2	60
400	700	100	2	2	2	2	60
700	400	100	2	2	2	2	60
600	700	100	2	2	2	2	60
700	600	100	2	2	2	2	60
700	700	100	2	2	2	2	60
700	800	100	2	2	2	2	60
800	700	100	2	2	2	2	60
750	800	100	2	2	2	2	60
800	750	100	2	2	2	2	60
800	800	100	2	2	2	2	60
850	1200	100	4	3	2	2	60
1200	850	100	4	2	4	2	60
500	900	100	2	2	2	2	60
900	500	100	4	2	2	2	60
600	900	100	2	2	2	2	60
900	600	100	4	2	2	2	60

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800	900	100	4	2	2	2	60
900	800	100	4	2	2	2	60
950	950	100	4	2	2	2	60
1500	1500	100	9	3	5	2	50
1200	1200	100	5	3	5	2	60
1500	2000	100	9	3	5	3	37.5
2000	1500	100	9	3	5	3	37.5
950	1000	100	5	3	4	2	60
1000	950	100	5	3	4	2	60
1350	1350	100	9	3	4	2	60

Application/Limitation

The weathertight doors are found to comply with DNV GL Rules for Ships, DNVGL-RU-SHIP-Pt3Ch12 July 2016 Sec.2 "3. Weathertight doors" and Sec. 6 for doors with installed windows or scuttles, for maximum design pressures as specified above.

The door has been Type Approved with respect to weathertightness only, i.e. fire integrity has not been considered.

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

The Type Approval does not cover the supporting structure of the doors, which is subject to approval.

Interface showing door frame and bulkhead shall be submitted for case-by-case approval.

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

The door may not be fitted in a bulkhead where the design pressure is higher than indicated in the table above.

The complete installation shall be function and leak tested according to DNVGL-RU-SHIP-Pt2Ch4 Sec.8 July 2016.

The doors may not be fitted in bulkheads where it is required that steel doors shall be used i.e. in galley, engine casing, etc. which may be considered as a space of greater fire risk.

A door with side scuttle/window is to be fitted with a dead light if located in a position where dead light is required for windows and side scuttles.

Type Approval documentation

Tests carried out

The test of the product was carried out on 14.05.2004 in presence of DNV surveyor.

Marking of product



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The product is to be marked with the following info:

- Manufacturer's name or brand
- DNVGL Type Approval Certificate No. TAS00000NZ
- Type designation
- Max allowable design pressure as specified above

The marking of the product will indicate the size of the door and whether or not it is fitted with side scuttle and dead light.

A weather tight door will be marked WTD, WTD-S if fitted with side scuttle, and WTD-SD if fitted with side scuttle and dead light.

Periodical assessment

DNV GL surveyor has the permission to perform Certification Retention Survey at any time during the validity period of this certificate.

Periodical assessment shall be done bi-yearly with a time window of +/- 3 months.