Certificate No:
TAS00003U4

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Watertight Door

with type designation(s)
Watertight Hinged (Musketeer) Doors

Issued to
Winel B.V.
Assen, **Netherlands**

is found to comply with
DNV rules for classification – Ships
DNV-OS-C301 – Stability and watertight integrity, Edition July 2020 (Amended August 2021)
DNV 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.

Issued at **Høvik** on **2023-03-21**
This Certificate is valid until **2028-03-20**.
DNV local unit: **Netherlands VMC**

Approval Engineer: **Grzegorz Wolski**

for **DNV**

Thomas Revheim
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 AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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.

Product description

Watertight Hinged (Musketeer) Doors

Is a door fabricated from 8 mm thick steel main plate. Plate is reinforced by up to five stiffeners welded to the main plate by intermittent welding in middle and by double continuous welding at its ends. Edge of door is stiffened by gasket rim welded at 90-degree angle to the main plate. Door is of single acting type with up to twelve linked cleats and handle mounted close to non-hinged edge of door.

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
550	800	8	6	2	60 x 8	60 x 8	30
600	800	8	6	2	60 x 8	60 x 8	30
650	800	8	6	2	60 x 8	60 x 8	30
700	800	8	6	2	60 x 8	60 x 8	30
750	800	8	6	2	60 x 8	60 x 8	30
800	800	8	6	2	60 x 8	60 x 8	30
850	800	8	6	2	60 x 8	60 x 8	30
550	850	8	6	2	60 x 8	60 x 8	30
600	850	8	6	2	60 x 8	60 x 8	30
650	850	8	6	2	60 x 8	60 x 8	30
700	850	8	6	2	60 x 8	60 x 8	30
750	850	8	6	2	60 x 8	60 x 8	30
800	850	8	6	2	60 x 8	60 x 8	30
850	850	8	6	2	60 x 8	60 x 8	30
550	900	8	6	2	60 x 8	60 x 8	30
600	900	8	6	2	60 x 8	60 x 8	30
650	900	8	6	2	60 x 8	60 x 8	30
700	900	8	6	2	60 x 8	60 x 8	30
750	900	8	6	2	60 x 8	60 x 8	30
800	900	8	6	2	60 x 8	60 x 8	30
850	900	8	6	2	60 x 8	60 x 8	30
550	950	8	6	2	60 x 8	60 x 8	30
600	950	8	6	2	60 x 8	60 x 8	30
650	950	8	6	2	60 x 8	60 x 8	30
700	950	8	6	2	60 x 8	60 x 8	30
750	950	8	6	2	60 x 8	60 x 8	30
800	950	8	6	2	60 x 8	60 x 8	30
850	950	8	6	2	60 x 8	60 x 8	30
550	1000	8	6	2	60 x 8	60 x 8	30
600	1000	8	6	2	60 x 8	60 x 8	30
650	1000	8	6	2	60 x 8	60 x 8	30

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
700	1000	8	6	2	60 x 8	60 x 8	30
750	1000	8	6	2	60 x 8	60 x 8	30
800	1000	8	6	2	60 x 8	60 x 8	30
850	1000	8	6	2	60 x 8	60 x 8	30
550	1050	8	6	2	60 x 8	60 x 8	30
600	1050	8	6	2	60 x 8	60 x 8	30
650	1050	8	6	2	60 x 8	60 x 8	30
700	1050	8	6	2	60 x 8	60 x 8	30
750	1050	8	6	2	60 x 8	60 x 8	30
800	1050	8	6	2	60 x 8	60 x 8	30
850	1050	8	6	2	60 x 8	60 x 8	30
550	1100	8	6	2	60 x 8	60 x 8	30
600	1100	8	6	2	60 x 8	60 x 8	30
650	1100	8	6	2	60 x 8	60 x 8	30
700	1100	8	6	2	60 x 8	60 x 8	30
750	1100	8	6	2	60 x 8	60 x 8	30
800	1100	8	6	2	60 x 8	60 x 8	30
850	1100	8	6	2	60 x 8	60 x 8	30
550	1150	8	6	2	60 x 8	60 x 8	30
600	1150	8	6	2	60 x 8	60 x 8	30
650	1150	8	6	2	60 x 8	60 x 8	30
700	1150	8	6	2	60 x 8	60 x 8	30
750	1150	8	6	2	60 x 8	60 x 8	30
800	1150	8	6	2	60 x 8	60 x 8	30
850	1150	8	6	2	60 x 8	60 x 8	30
550	1200	8	6	2	60 x 8	60 x 8	30
600	1200	8	6	2	60 x 8	60 x 8	30
650	1200	8	6	2	60 x 8	60 x 8	30
700	1200	8	6	2	60 x 8	60 x 8	30
750	1200	8	6	2	60 x 8	60 x 8	30
800	1200	8	6	2	60 x 8	60 x 8	30
850	1200	8	6	2	60 x 8	60 x 8	30
550	1250	8	6	2	60 x 8	60 x 8	30
600	1250	8	6	2	60 x 8	60 x 8	30
650	1250	8	6	2	60 x 8	60 x 8	30
700	1250	8	6	2	60 x 8	60 x 8	30

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
750	1250	8	6	2	60 x 8	60 x 8	30
800	1250	8	6	2	60 x 8	60 x 8	30
850	1250	8	6	4	60 x 8	60 x 8	30
550	1300	8	6	2	60 x 8	60 x 8	30
600	1300	8	6	2	60 x 8	60 x 8	30
650	1300	8	6	2	60 x 8	60 x 8	30
700	1300	8	6	2	60 x 8	60 x 8	30
750	1300	8	6	2	60 x 8	60 x 8	30
800	1300	8	6	2	60 x 8	60 x 8	30
850	1300	8	6	4	60 x 8	60 x 8	30
550	1350	8	6	2	60 x 8	60 x 8	30
600	1350	8	6	2	60 x 8	60 x 8	30
650	1350	8	6	2	60 x 8	60 x 8	30
700	1350	8	6	2	60 x 8	60 x 8	30
750	1350	8	6	2	60 x 8	60 x 8	30
800	1350	8	6	2	60 x 8	60 x 8	30
850	1350	8	6	4	60 x 8	60 x 8	30
550	1400	8	6	2	60 x 8	60 x 8	30
600	1400	8	6	2	60 x 8	60 x 8	30
650	1400	8	6	2	60 x 8	60 x 8	30
700	1400	8	6	2	60 x 8	60 x 8	30
750	1400	8	6	2	60 x 8	60 x 8	30
800	1400	8	6	2	60 x 8	60 x 8	30
850	1400	8	6	4	60 x 8	60 x 8	30
550	1450	8	6	2	60 x 8	60 x 8	30
600	1450	8	6	2	60 x 8	60 x 8	30
650	1450	8	6	2	60 x 8	60 x 8	30
700	1450	8	6	2	60 x 8	60 x 8	30
750	1450	8	6	2	60 x 8	60 x 8	30
800	1450	8	6	2	60 x 8	60 x 8	30
850	1450	8	6	4	60 x 8	60 x 8	30
550	1500	8	6	2	60 x 8	60 x 8	30
600	1500	8	6	2	60 x 8	60 x 8	30
650	1500	8	6	2	60 x 8	60 x 8	30
700	1500	8	6	2	60 x 8	60 x 8	30
750	1500	8	6	2	60 x 8	60 x 8	30

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
800	1500	8	6	2	60 x 8	60 x 8	30
850	1500	8	6	4	60 x 8	60 x 8	30
550	1550	8	6	2	60 x 8	60 x 8	30
600	1550	8	6	2	60 x 8	60 x 8	30
650	1550	8	6	2	60 x 8	60 x 8	30
700	1550	8	6	2	60 x 8	60 x 8	30
750	1550	8	6	2	60 x 8	60 x 8	30
800	1550	8	6	2	60 x 8	60 x 8	30
850	1550	8	6	4	60 x 8	60 x 8	30
550	1600	8	6	2	60 x 8	60 x 8	30
600	1600	8	6	2	60 x 8	60 x 8	30
650	1600	8	6	2	60 x 8	60 x 8	30
700	1600	8	6	2	60 x 8	60 x 8	30
750	1600	8	6	2	60 x 8	60 x 8	30
800	1600	8	6	2	60 x 8	60 x 8	30
850	1600	8	6	4	60 x 8	60 x 8	30
550	1650	8	6	2	60 x 8	60 x 8	30
600	1650	8	6	2	60 x 8	60 x 8	30
650	1650	8	6	2	60 x 8	60 x 8	30
700	1650	8	6	2	60 x 8	60 x 8	30
750	1650	8	6	2	60 x 8	60 x 8	30
800	1650	8	6	4	60 x 8	60 x 8	30
850	1650	8	6	4	60 x 8	60 x 8	30
550	1700	8	6	2	60 x 8	60 x 8	30
600	1700	8	6	2	60 x 8	60 x 8	30
650	1700	8	6	2	60 x 8	60 x 8	30
700	1700	8	6	2	60 x 8	60 x 8	30
750	1700	8	6	2	60 x 8	60 x 8	30
800	1700	8	6	4	60 x 8	60 x 8	30
850	1700	8	6	4	60 x 8	60 x 8	30
550	1750	8	6	4	60 x 8	60 x 8	30
600	1750	8	6	4	60 x 8	60 x 8	30
650	1750	8	6	4	60 x 8	60 x 8	30
700	1750	8	6	4	60 x 8	60 x 8	30
750	1750	8	6	4	60 x 8	60 x 8	30
800	1750	8	6	4	60 x 8	60 x 8	30

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
850	1750	8	6	4	60 x 8	60 x 8	30
550	1800	8	6	4	60 x 8	60 x 8	30
600	1800	8	6	4	60 x 8	60 x 8	30
650	1800	8	6	4	60 x 8	60 x 8	30
700	1800	8	6	4	60 x 8	60 x 8	30
750	1800	8	6	4	60 x 8	60 x 8	30
800	1800	8	6	4	60 x 8	60 x 8	30
850	1800	8	6	4	60 x 8	60 x 8	30
550	1850	8	6	4	60 x 8	60 x 8	30
600	1850	8	6	4	60 x 8	60 x 8	30
650	1850	8	6	4	60 x 8	60 x 8	30
700	1850	8	6	4	60 x 8	60 x 8	30
750	1850	8	6	4	60 x 8	60 x 8	30
800	1850	8	6	4	60 x 8	60 x 8	30
850	1850	8	6	4	60 x 8	60 x 8	30

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
550	800	8	6	2	60 x 8	60 x 8	50
600	800	8	6	2	60 x 8	60 x 8	50
650	800	8	6	2	60 x 8	60 x 8	50
700	800	8	6	2	60 x 8	60 x 8	50
750	800	8	6	2	60 x 8	60 x 8	50
800	800	8	6	2	60 x 8	60 x 8	50
850	800	8	6	2	60 x 8	60 x 8	50
550	850	8	6	2	60 x 8	60 x 8	50
600	850	8	6	2	60 x 8	60 x 8	50
650	850	8	6	2	60 x 8	60 x 8	50
700	850	8	6	2	60 x 8	60 x 8	50
750	850	8	6	2	60 x 8	60 x 8	50
800	850	8	6	2	60 x 8	60 x 8	50
850	850	8	6	2	60 x 8	60 x 8	50
550	900	8	6	2	60 x 8	60 x 8	50
600	900	8	6	2	60 x 8	60 x 8	50

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
650	900	8	6	2	60 x 8	60 x 8	50
700	900	8	6	2	60 x 8	60 x 8	50
750	900	8	6	2	60 x 8	60 x 8	50
800	900	8	6	2	60 x 8	60 x 8	50
850	900	8	6	2	60 x 8	60 x 8	50
550	950	8	6	2	60 x 8	60 x 8	50
600	950	8	6	2	60 x 8	60 x 8	50
650	950	8	6	2	60 x 8	60 x 8	50
700	950	8	6	2	60 x 8	60 x 8	50
750	950	8	6	2	60 x 8	60 x 8	50
800	950	8	6	2	60 x 8	60 x 8	50
850	950	8	6	4	60 x 8	60 x 8	50
550	1000	8	6	2	60 x 8	60 x 8	50
600	1000	8	6	2	60 x 8	60 x 8	50
650	1000	8	6	2	60 x 8	60 x 8	50
700	1000	8	6	2	60 x 8	60 x 8	50
750	1000	8	6	2	60 x 8	60 x 8	50
800	1000	8	6	2	60 x 8	60 x 8	50
850	1000	8	6	3	60 x 8	60 x 8	50
550	1050	8	6	2	60 x 8	60 x 8	50
600	1050	8	6	2	60 x 8	60 x 8	50
650	1050	8	6	2	60 x 8	60 x 8	50
700	1050	8	6	2	60 x 8	60 x 8	50
750	1050	8	6	2	60 x 8	60 x 8	50
800	1050	8	6	2	60 x 8	60 x 8	50
850	1050	8	6	4	60 x 8	60 x 8	50
550	1100	8	6	2	60 x 8	60 x 8	50
600	1100	8	6	2	60 x 8	60 x 8	50
650	1100	8	6	2	60 x 8	60 x 8	50
700	1100	8	6	2	60 x 8	60 x 8	50
750	1100	8	6	2	60 x 8	60 x 8	50
800	1100	8	6	4	60 x 8	60 x 8	50
850	1100	8	6	4	60 x 8	60 x 8	50
550	1150	8	6	2	60 x 8	60 x 8	50
600	1150	8	6	2	60 x 8	60 x 8	50

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
650	1150	8	6	2	60 x 8	60 x 8	50
700	1150	8	6	2	60 x 8	60 x 8	50
750	1150	8	6	2	60 x 8	60 x 8	50
800	1150	8	6	4	60 x 8	60 x 8	50
850	1150	8	6	4	60 x 8	60 x 8	50
550	1200	8	6	2	60 x 8	60 x 8	50
600	1200	8	6	2	60 x 8	60 x 8	50
650	1200	8	6	2	60 x 8	60 x 8	50
700	1200	8	6	2	60 x 8	60 x 8	50
750	1200	8	6	4	60 x 8	60 x 8	50
800	1200	8	6	4	60 x 8	60 x 8	50
850	1200	8	6	4	60 x 8	60 x 8	50
550	1250	8	6	2	60 x 8	60 x 8	50
600	1250	8	6	2	60 x 8	60 x 8	50
650	1250	8	6	2	60 x 8	60 x 8	50
700	1250	8	6	4	60 x 8	60 x 8	50
750	1250	8	6	4	60 x 8	60 x 8	50
800	1250	8	6	4	60 x 8	60 x 8	50
850	1250	8	6	4	60 x 8	60 x 8	50
550	1300	8	6	2	60 x 8	60 x 8	50
600	1300	8	6	2	60 x 8	60 x 8	50
650	1300	8	6	2	60 x 8	60 x 8	50
700	1300	8	6	4	60 x 8	60 x 8	50
750	1300	8	6	4	60 x 8	60 x 8	50
800	1300	8	6	4	60 x 8	60 x 8	50
850	1300	8	6	4	60 x 8	60 x 8	50
550	1350	8	6	2	60 x 8	60 x 8	50
600	1350	8	6	2	60 x 8	60 x 8	50
650	1350	8	6	2	60 x 8	60 x 8	50
700	1350	8	6	4	60 x 8	60 x 8	50
750	1350	8	6	4	60 x 8	60 x 8	50
800	1350	8	6	4	60 x 8	60 x 8	50
850	1350	8	6	4	60 x 8	60 x 8	50
550	1400	8	6	2	60 x 8	60 x 8	50
600	1400	8	6	2	60 x 8	60 x 8	50

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
650	1400	8	6	2	60 x 8	60 x 8	50
700	1400	8	6	4	60 x 8	60 x 8	50
750	1400	8	6	4	60 x 8	60 x 8	50
800	1400	8	6	4	60 x 8	60 x 8	50
850	1400	8	6	4	60 x 8	60 x 8	50
550	1450	8	6	2	60 x 8	60 x 8	50
600	1450	8	6	2	60 x 8	60 x 8	50
650	1450	8	6	2	60 x 8	60 x 8	50
700	1450	8	6	4	60 x 8	60 x 8	50
750	1450	8	6	4	60 x 8	60 x 8	50
800	1450	8	6	4	60 x 8	60 x 8	50
850	1450	8	10	4	60 x 8	60 x 8	50
550	1500	8	6	2	60 x 8	60 x 8	50
600	1500	8	6	2	60 x 8	60 x 8	50
650	1500	8	6	2	60 x 8	60 x 8	50
700	1500	8	6	4	60 x 8	60 x 8	50
750	1500	8	6	4	60 x 8	60 x 8	50
800	1500	8	6	4	60 x 8	60 x 8	50
850	1500	8	8	3	60 x 8	60 x 8	50
550	1550	8	6	2	60 x 8	60 x 8	50
600	1550	8	6	2	60 x 8	60 x 8	50
650	1550	8	6	2	60 x 8	60 x 8	50
700	1550	8	6	4	60 x 8	60 x 8	50
750	1550	8	6	4	60 x 8	60 x 8	50
800	1550	8	8	3	60 x 8	60 x 8	50
850	1550	8	8	5	60 x 8	60 x 8	50
550	1600	8	6	2	60 x 8	60 x 8	50
600	1600	8	6	2	60 x 8	60 x 8	50
650	1600	8	6	2	60 x 8	60 x 8	50
700	1600	8	6	4	60 x 8	60 x 8	50
750	1600	8	8	3	60 x 8	60 x 8	50
800	1600	8	8	5	60 x 8	60 x 8	50
850	1600	8	8	5	60 x 8	60 x 8	50
550	1650	8	6	2	60 x 8	60 x 8	50
600	1650	8	6	4	60 x 8	60 x 8	50

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
650	1650	8	6	4	60 x 8	60 x 8	50
700	1650	8	6	4	60 x 8	60 x 8	50
750	1650	8	8	3	60 x 8	60 x 8	50
800	1650	8	8	5	60 x 8	60 x 8	50
850	1650	8	8	5	60 x 8	60 x 8	50
550	1700	8	6	2	60 x 8	60 x 8	50
600	1700	8	6	4	60 x 8	60 x 8	50
650	1700	8	6	4	60 x 8	60 x 8	50
700	1700	8	6	4	60 x 8	60 x 8	50
750	1700	8	8	5	60 x 8	60 x 8	50
800	1700	8	8	5	60 x 8	60 x 8	50
850	1700	8	8	5	60 x 8	60 x 8	50
550	1750	8	6	4	60 x 8	60 x 8	50
600	1750	8	6	4	60 x 8	60 x 8	50
650	1750	8	6	4	60 x 8	60 x 8	50
700	1750	8	8	3	60 x 8	60 x 8	50
750	1750	8	8	5	60 x 8	60 x 8	50
800	1750	8	8	5	60 x 8	60 x 8	50
850	1750	8	8	5	60 x 8	60 x 8	50
550	1800	8	6	4	60 x 8	60 x 8	50
600	1800	8	6	4	60 x 8	60 x 8	50
650	1800	8	6	4	60 x 8	60 x 8	50
700	1800	8	8	3	60 x 8	60 x 8	50
750	1800	8	8	5	60 x 8	60 x 8	50
800	1800	8	8	5	60 x 8	60 x 8	50
850	1800	8	8	5	60 x 8	60 x 8	50
550	1850	8	6	4	60 x 8	60 x 8	50
600	1850	8	6	4	60 x 8	60 x 8	50
650	1850	8	8	3	60 x 8	60 x 8	50
700	1850	8	8	3	60 x 8	60 x 8	50
750	1850	8	8	5	60 x 8	60 x 8	50
800	1850	8	8	5	60 x 8	60 x 8	50
850	1850	8	8	5	60 x 8	60 x 8	50

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
550	800	8	6	2	60 x 8	60 x 8	80
600	800	8	6	2	60 x 8	60 x 8	80
650	800	8	6	2	60 x 8	60 x 8	80
700	800	8	6	2	60 x 8	60 x 8	80
750	800	8	6	2	60 x 8	60 x 8	80
800	800	8	6	2	60 x 8	60 x 8	80
850	800	8	6	4	60 x 8	60 x 8	80
550	850	8	6	2	60 x 8	60 x 8	80
600	850	8	6	2	60 x 8	60 x 8	80
650	850	8	6	2	60 x 8	60 x 8	80
700	850	8	6	2	60 x 8	60 x 8	80
750	850	8	6	2	60 x 8	60 x 8	80
800	850	8	6	4	60 x 8	60 x 8	80
850	850	8	6	4	60 x 8	60 x 8	80
550	900	8	6	2	60 x 8	60 x 8	80
600	900	8	6	2	60 x 8	60 x 8	80
650	900	8	6	2	60 x 8	60 x 8	80
700	900	8	6	2	60 x 8	60 x 8	80
750	900	8	6	4	60 x 8	60 x 8	80
800	900	8	6	4	60 x 8	60 x 8	80
850	900	8	6	4	60 x 8	60 x 8	80
550	950	8	6	2	60 x 8	60 x 8	80
600	950	8	6	2	60 x 8	60 x 8	80
650	950	8	6	2	60 x 8	60 x 8	80
700	950	8	6	2	60 x 8	60 x 8	80
750	950	8	6	4	60 x 8	60 x 8	80
800	950	8	6	4	60 x 8	60 x 8	80
850	950	8	6	4	60 x 8	60 x 8	80
550	1000	8	6	2	60 x 8	60 x 8	80
600	1000	8	6	2	60 x 8	60 x 8	80
650	1000	8	6	2	60 x 8	60 x 8	80
700	1000	8	6	4	60 x 8	60 x 8	80
750	1000	8	6	4	60 x 8	60 x 8	80
800	1000	8	6	4	60 x 8	60 x 8	80
850	1000	8	8	3	60 x 8	60 x 8	80
550	1050	8	6	2	60 x 8	60 x 8	80

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
600	1050	8	6	2	60 x 8	60 x 8	80
650	1050	8	6	2	60 x 8	60 x 8	80
700	1050	8	6	4	60 x 8	60 x 8	80
750	1050	8	6	4	60 x 8	60 x 8	80
800	1050	8	8	3	60 x 8	60 x 8	80
850	1050	8	8	3	60 x 8	60 x 8	80
550	1100	8	6	2	60 x 8	60 x 8	80
600	1100	8	6	2	60 x 8	60 x 8	80
650	1100	8	6	2	60 x 8	60 x 8	80
700	1100	8	6	4	60 x 8	60 x 8	80
750	1100	8	8	3	60 x 8	60 x 8	80
800	1100	8	8	3	60 x 8	60 x 8	80
850	1100	8	8	5	60 x 8	60 x 8	80
550	1150	8	6	2	60 x 8	60 x 8	80
600	1150	8	6	2	60 x 8	60 x 8	80
650	1150	8	6	2	60 x 8	60 x 8	80
700	1150	8	6	4	60 x 8	60 x 8	80
750	1150	8	8	5	60 x 8	60 x 8	80
800	1150	8	8	3	80 x 8	60 x 8	80
850	1150	8	10	4	60 x 8	60 x 8	80
550	1200	8	6	2	60 x 8	60 x 8	80
600	1200	8	6	2	60 x 8	60 x 8	80
650	1200	8	6	4	60 x 8	60 x 8	80
700	1200	8	8	3	60 x 8	60 x 8	80
750	1200	8	8	3	60 x 8	60 x 8	80
800	1200	8	8	5	60 x 8	60 x 8	80
850	1200	8	10	4	60 x 8	60 x 8	80
550	1250	8	6	2	60 x 8	60 x 8	80
600	1250	8	6	2	60 x 8	60 x 8	80
650	1250	8	6	4	60 x 8	60 x 8	80
700	1250	8	8	3	60 x 8	60 x 8	80
750	1250	8	8	3	60 x 8	60 x 8	80
800	1250	8	8	5	60 x 8	60 x 8	80
850	1250	8	8	5	60 x 8	60 x 8	80
550	1300	8	6	2	60 x 8	60 x 8	80
600	1300	8	6	4	60 x 8	60 x 8	80

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
650	1300	8	8	3	60 x 8	60 x 8	80
700	1300	8	8	3	60 x 8	60 x 8	80
750	1300	8	8	5	60 x 8	60 x 8	80
800	1300	8	8	5	60 x 8	60 x 8	80
850	1300	8	10	4	60 x 8	60 x 8	80
550	1350	8	6	2	60 x 8	60 x 8	80
600	1350	8	8	3	60 x 8	60 x 8	80
650	1350	8	8	3	60 x 8	60 x 8	80
700	1350	8	8	3	60 x 8	60 x 8	80
750	1350	8	8	5	60 x 8	60 x 8	80
800	1350	8	10	4	60 x 8	60 x 8	80
850	1350	8	10	4	60 x 8	60 x 8	80
550	1400	8	6	2	60 x 8	60 x 8	80
600	1400	8	8	3	60 x 8	60 x 8	80
650	1400	8	8	3	60 x 8	60 x 8	80
700	1400	8	8	3	60 x 8	60 x 8	80
750	1400	8	8	5	60 x 8	60 x 8	80
800	1400	8	10	4	60 x 8	60 x 8	80
850	1400	8	10	4	60 x 8	60 x 8	80
550	1450	8	8	3	60 x 8	60 x 8	80
600	1450	8	8	3	60 x 8	60 x 8	80
650	1450	8	8	3	60 x 8	60 x 8	80
700	1450	8	8	3	60 x 8	60 x 8	80
750	1450	8	10	4	60 x 8	60 x 8	80
800	1450	8	10	4	60 x 8	60 x 8	80
850	1450	8	10	4	60 x 8	60 x 8	80
550	1500	8	8	3	60 x 8	60 x 8	80
600	1500	8	8	3	60 x 8	60 x 8	80
650	1500	8	8	3	60 x 8	60 x 8	80
700	1500	8	8	5	60 x 8	60 x 8	80
750	1500	8	10	4	60 x 8	60 x 8	80
800	1500	8	10	4	60 x 8	60 x 8	80
850	1500	8	10	4	80 x 8	60 x 8	80
550	1550	8	8	3	60 x 8	60 x 8	80
600	1550	8	8	3	60 x 8	60 x 8	80
650	1550	8	8	3	60 x 8	60 x 8	80

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
700	1550	8	8	5	60 x 8	60 x 8	80
750	1550	8	10	4	60 x 8	60 x 8	80
800	1550	8	10	4	60 x 8	60 x 8	80
850	1550	8	10	4	80 x 8	60 x 8	80
550	1600	8	8	3	60 x 8	60 x 8	80
600	1600	8	8	3	60 x 8	60 x 8	80
650	1600	8	8	3	60 x 8	60 x 8	80
700	1600	8	10	4	60 x 8	60 x 8	80
750	1600	8	10	4	60 x 8	60 x 8	80
800	1600	8	10	4	80 x 8	60 x 8	80
850	1600	8	10	4	80 x 8	60 x 8	80
550	1650	8	8	3	60 x 8	60 x 8	80
600	1650	8	8	3	60 x 8	60 x 8	80
650	1650	8	8	3	60 x 8	60 x 8	80
700	1650	8	10	4	60 x 8	60 x 8	80
750	1650	8	10	4	60 x 8	60 x 8	80
800	1650	8	10	4	80 x 8	60 x 8	80
850	1650	8	10	4	80 x 8	60 x 8	80
550	1700	8	8	3	60 x 8	60 x 8	80
600	1700	8	8	3	60 x 8	60 x 8	80
650	1700	8	10	4	60 x 8	60 x 8	80
700	1700	8	10	4	60 x 8	60 x 8	80
750	1700	8	10	4	80 x 8	60 x 8	80
800	1700	8	10	4	80 x 8	60 x 8	80
550	1750	8	8	3	60 x 8	60 x 8	80
600	1750	8	8	3	60 x 8	60 x 8	80
650	1750	8	10	4	60 x 8	60 x 8	80
700	1750	8	10	4	60 x 8	60 x 8	80
750	1750	8	10	4	80 x 8	60 x 8	80
800	1750	8	10	4	80 x 8	60 x 8	80
550	1800	8	8	3	60 x 8	60 x 8	80
600	1800	8	8	3	60 x 8	60 x 8	80
650	1800	8	10	4	60 x 8	60 x 8	80
700	1800	8	10	4	60 x 8	60 x 8	80
750	1800	8	10	4	80 x 8	60 x 8	80
550	1850	8	8	3	60 x 8	60 x 8	80

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
600	1850	8	10	4	60 x 8	60 x 8	80
650	1850	8	10	4	60 x 8	60 x 8	80
700	1850	8	10	4	60 x 8	60 x 8	80
750	1850	8	10	4	80 x 8	60 x 8	80

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
550	800	8	6	2	60 x 8	60 x 8	120
600	800	8	6	2	60 x 8	60 x 8	120
650	800	8	6	2	60 x 8	60 x 8	120
700	800	8	6	2	60 x 8	60 x 8	120
550	850	8	6	2	60 x 8	60 x 8	120
600	850	8	6	2	60 x 8	60 x 8	120
650	850	8	6	2	60 x 8	60 x 8	120
550	900	8	6	2	60 x 8	60 x 8	120
600	900	8	6	2	60 x 8	60 x 8	120
650	900	8	8	3	60 x 8	60 x 8	120
700	900	8	8	3	60 x 8	60 x 8	120
750	900	8	8	3	60 x 8	60 x 8	120
800	900	8	8	3	60 x 8	60 x 8	120
550	950	8	6	2	60 x 8	60 x 8	120
600	950	8	6	2	60 x 8	60 x 8	120
650	950	8	8	3	60 x 8	60 x 8	120
700	950	8	8	3	60 x 8	60 x 8	120
750	950	8	8	3	60 x 8	60 x 8	120
800	950	8	8	5	60 x 8	60 x 8	120
550	1000	8	6	2	60 x 8	60 x 8	120
600	1000	8	8	3	60 x 8	60 x 8	120
650	1000	8	8	3	60 x 8	60 x 8	120
700	1000	8	8	3	60 x 8	60 x 8	120
750	1000	8	8	3	60 x 8	60 x 8	120
800	1000	8	10	4	60 x 8	60 x 8	120
850	1000	8	10	4	60 x 8	60 x 8	120

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
550	1050	8	8	3	60 x 8	60 x 8	120
600	1050	8	8	3	60 x 8	60 x 8	120
650	1050	8	8	3	60 x 8	60 x 8	120
700	1050	8	8	3	60 x 8	60 x 8	120
750	1050	8	10	4	60 x 8	60 x 8	120
800	1050	8	10	4	60 x 8	60 x 8	120
850	1050	8	10	4	60 x 8	60 x 8	120
550	1100	8	8	3	60 x 8	60 x 8	120
600	1100	8	8	3	60 x 8	60 x 8	120
650	1100	8	8	3	60 x 8	60 x 8	120
700	1100	8	8	3	60 x 8	60 x 8	120
750	1100	8	10	4	60 x 8	60 x 8	120
800	1100	8	10	4	60 x 8	60 x 8	120
850	1100	8	10	4	80 x 8	60 x 8	120
550	1150	8	8	3	60 x 8	60 x 8	120
600	1150	8	8	3	60 x 8	60 x 8	120
650	1150	8	8	3	60 x 8	60 x 8	120
700	1150	8	10	4	60 x 8	60 x 8	120
750	1150	8	10	4	60 x 8	60 x 8	120
800	1150	8	10	4	80 x 8	60 x 8	120
850	1150	8	10	4	80 x 8	60 x 8	120
550	1200	8	8	3	60 x 8	60 x 8	120
600	1200	8	8	3	60 x 8	60 x 8	120
650	1200	8	10	4	60 x 8	60 x 8	120
700	1200	8	10	4	60 x 8	60 x 8	120
750	1200	8	10	4	60 x 8	60 x 8	120
800	1200	8	10	4	80 x 8	60 x 8	120
550	1250	8	8	3	60 x 8	60 x 8	120
600	1250	8	8	3	60 x 8	60 x 8	120
650	1250	8	10	4	60 x 8	60 x 8	120
700	1250	8	10	4	60 x 8	60 x 8	120
750	1250	8	10	4	80 x 8	60 x 8	120
550	1300	8	8	3	60 x 8	60 x 8	120
600	1300	8	10	4	60 x 8	60 x 8	120
650	1300	8	10	4	60 x 8	60 x 8	120
700	1300	8	10	4	60 x 8	60 x 8	120

Door Size			No. of cleats	No. of hor. stiffeners	Stiffeners	Edge stiffeners	Pressure
Width [mm]	Heigth [mm]	Plate thickness [mm]			H x T [mm]	H x T [mm]	[kPa]
750	1300	8	10	4	80 x 8	60 x 8	120
550	1350	8	8	3	60 x 8	60 x 8	120
600	1350	8	10	4	60 x 8	60 x 8	120
650	1350	8	10	4	60 x 8	60 x 8	120
700	1350	8	10	4	60 x 8	60 x 8	120
550	1400	8	10	4	60 x 8	60 x 8	120
600	1400	8	10	4	60 x 8	60 x 8	120
650	1400	8	10	4	60 x 8	60 x 8	120
700	1400	8	10	4	60 x 8	60 x 8	120
550	1450	8	10	4	60 x 8	60 x 8	120
600	1450	8	10	4	60 x 8	60 x 8	120
650	1450	8	10	4	60 x 8	60 x 8	120
550	1500	8	10	4	60 x 8	60 x 8	120
600	1500	8	10	4	60 x 8	60 x 8	120
650	1500	8	10	4	60 x 8	60 x 8	120
550	1550	8	10	4	60 x 8	60 x 8	120
600	1550	8	10	4	60 x 8	60 x 8	120
550	1600	8	10	4	60 x 8	60 x 8	120
600	1600	8	10	4	60 x 8	60 x 8	120
550	1650	8	10	4	60 x 8	60 x 8	120
550	1700	8	10	4	60 x 8	60 x 8	120
550	1750	8	10	4	60 x 8	60 x 8	120

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

Application/Limitation

The doors have been Type Approved with respect to watertightness only, i.e. fire integrity has not been considered.

The watertight doors are found to comply with DNV-RU-SHIP July 2021 Pt.3 Ch.12 Sec.3 [4.3].

The design pressure at the location where the doors are to be fitted shall be equal or less than the pressure above.

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 by yard/end user.

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

The door frame may be welded or bolted to the bulkhead.

Indication open/closed for the watertight door shall be fitted on the bridge.

Type Approval documentation

Drawing No. 426.TA.3mWC.1850x850 rev.- dated 11 Nov 2021 from manufacturer.
Drawing No. 426.TA.5mWC.1850x850 rev.- dated 11 Nov 2021 from manufacturer.

Drawing No. 426.TA.8mWC.1850x750	rev.-	dated 11 Nov 2021 from manufacturer.
Drawing No. 426.TA.12mWC.1750x550	rev.-	dated 11 Nov 2021 from manufacturer.
Drawing No. 426.TA.Typical weld detail	rev. A	dated 30 Nov 2021 from manufacturer.

Tests carried out

Each door is to be tested for tightness through hydrostatic testing to design pressure.

Marking of product

The product is to be marked with the following info:
- Manufacturer's name or brand
- DNV Type Approval Certificate No. TAS00003U4
- The specific type designation:

Periodical assessment

DNV surveyor has the permission to perform Certification Retention Survey at any time during the validity period of this certificate. Periodical assessment will be required after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.