



TYPE APPROVAL CERTIFICATE

Certificate No:
TAE00001U2
Revision No:
2

This is to certify:

That the Bulkhead/Deck Penetration

with type designation(s)
"MCT Brattberg 2000" composed of steel frames

Issued to
MCT Brattberg AB
Karlskrona, Sweden

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Approved for penetration in bulkheads or decks limited to
- water pressure of 6,0 bar
- gas pressure of 4,0 bar.

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2022-01-11**

This Certificate is valid until **2027-01-11**.
DNV local station: **Denmark CMC**

Approval Engineer: **Nicolay Horn**

for **DNV**

Trond Sjøvåg
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

MCT Brattberg 2000" composed of steel frames types / steel frames Btb types either: RGS, RGSO, RGSR, RGSF or RGSK in sizes 2, 4, 6 or 8 and combinations welded to the steel division (deck or bulkhead) and filled with MCT-inserts blocks made from "Lycron".

Application/Limitation

Approved for penetration in bulkheads or decks and between gas safe and gas dangerous spaces to water pressure of 6,0 bar and gas pressure of 4,0 bar.

The penetration system shall generally not be used for penetrating boundaries of tanks.

Type Approval documentation

Data sheets / drawings:

- Drawing H Block 20 drawing No. 1170050 rev. A dated 2018-09-18
- Drawing H Block 20 plug drawing No. 1170075 rev. A dated 2018-10-23
- Drawing H Block 30 drawing No. 1170051 rev. A dated 2018-09-18
- Drawing H Block 30 plug drawing No. 1170076 rev. A dated 2018-10-23
- Drawing H Block 40 drawing No. 1170052 rev. A dated 2018-09-18
- Drawing H Block 40 plug drawing No. 1170077 rev. A dated 2018-10-23
- Drawing H Block 60 drawing No. 1170053 rev. A dated 2018-09-18
- Drawing H Block 60 plug drawing No. 1170078 rev. A dated 2018-10-23
- MCT 2000 according to drawing No. 004166.
- RGS - 2, 4, 6, 8 according to drawing No. 10 42 88.
- Compression Plate drawing No. 102069 dated 071217
- Press wedge PTG-120 drawing No. 120558 dated 080523
- RGS Singel BTB drawing No. 121255 dated 051118
- Addblock drawing No. 130812 dated 071123
- Spare blocks drawing No. 140151 dated 071220
- Insert blocks drawing No. 140153 dated 071220
- Stayplates drawing No. 140658 dated 071217
- STG-1 EMC drawing No. 103257 dated 080124

Test reports:

- DNV GL Survey Report no. N141GRC2 including MCT Brattberg AB test report no 170563
- MCT Brattber Specific Test Certificate doc. No. QR14-130131W dated 2013-04-09
- DNV Third Party Inspection Report DNV Order No. 40008747/1 dated 2013-04-09
- Test report from MCT Brattberg AB reference 11201/a, dated 2011-10-13
- Test report from MCT Brattberg AB reference 09044/B, dated 2009-02-05
- Test was performed in accordance with DNV type approval program 8-471.19-1 Standard No. 2.9 May 2001

Tests carried out

Pressure tests with water according to DNVGL Class Program Type approval Ed. Feb. 2016 doc. no. DNVGL-CP-0165.

Marking of product

The product or packing is to be marked with name of manufacturer and type designation.

Periodical assessment

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

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE