

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Offshore Container**with type designation(s)
16 cylinder offshore bundle - MGWRJ12

Issued to

MAYFLY GWR OFFSHORE CONTAINERS LTDA BRASIL
Carapebus, RJ 182, Brazil

is found to comply with

DNV GL standard DNVGL-ST-E271 – 2.7-1 Offshore containers, August 2017**ISO 10855:2018 Offshore containers and associated liftings sets – Design, manufacture, testing, inspection and marking****IMO/MSC Circular 860****International Maritime Dangerous Goods Code (IMDG)****European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)****Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID)****ISO 10961 - Gas cylinders-Cylinder bundles-Design, manufacture, testing and inspection****Application :****This offshore container is a UN gas cylinder bundle for different gasses as specified in Application/Limitation**

Max. gross mass (kg)	2100
Max. payload (kg)	700
Max. sling leg angle	45°
Enhancement factor	3.376

Issued at **Høvik** on **2019-07-09**This Certificate is valid until **2024-07-08**.for **DNV GL**DNV GL local station: **Macaé - Qualification & Verification**Approval Engineer: **Igor Antonijevic****Inger-Helene Hals**
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.



Job Id: **262.1-031001-1**
Certificate No: **TAS000021X**

Manufactured by

Offshore frame manufacturer and assembly of bundle:

Manifold manufactured by:

Mayfly GWR Offshore Containers Ltda, takes responsibility that both design and production are in compliance with the Standards and/or Regulations listed on page 1 of this type approval certificate.

Product description

This offshore container is a gas cylinder bundle according to IMDG/ADR/RID Code Chapter 6.2.2, with cylinders connected through a manifold. The container is approved for transport of gases as specified under Application/Limitation.

Max. external dimensions (LxWxH) : 1021 x 1021 x 1955 mm

Tare mass ¹⁾ : 1400 kg

¹⁾ tare mass has to be confirmed by weighing. The sum of the tare mass and the payload shall never exceed the max. gross mass as stated on the front page of this certificate.

Application/Limitation

Products accepted for carriage Proper Shipping Name (PSN)	UN No.	Class or Division
NITROGEN, COMPRESSED	1066	2.2
ARGON, COMPRESSED	1006	2.2
OXYGEN, COMPRESSED	1072	2.2
HYDROGEN CHLORIDE, ANHYDROUS	1050	2.3
AIR, COMPRESSED	1002	2.2
CARBON MONOXIDE, COMPRESSED	1016	2.3
HELIUM, COMPRESSED	1046	2.2
COMPRESSED GAS, N.O.S.	1956	2.2

Design temperature : -20 °C

Min. shackle bolt diameter : 21.6 mm

MAWP/test pr. ²⁾ : 200 / 300

²⁾ maximum allowable working pressure for the cylinder bundle shall not be higher than the maximum allowable working pressure for the cylinders or manifold.

Cylinders

Height : 1460 mm

Diameter (external) : 230 mm

Volume : 50 l

Weight : 57.2 kg

DNV GL surveyor has to witness important production and test events and issue Form no. 71.08a "Certificate for Offshore Container" for each container.

Production strength tests (All point lifting) to be carried out according to DNV GL 2.7-1 and after agreement with the DNV GL surveyor.

Each manifold shall be proof pressure tested, each bundle should be leak tested, according to ISO 10961:2012 Section. 7.3.

The certificates are only valid when the containers are fitted with a lifting set certified according to DNV GL 2.7-1.

Only certified gas bottles of the proper size and type are to be use in this frame.

Service equipment shall be type approved according to one of the referenced standards in ADR/RID section 6.2.4.1, and bear the Π mark.

Type Approval documentation

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Tests carried out

Prototype MGGB 107 tested according to the requirements.

Marking of product

Each container to be marked with:

- Data plates according to DNV GL / ISO requirements
- Container marking according to DNV GL / ISO requirements
- Bundle marking according to ISO 10961, Chapter 6 and IMDG Code ref. 6.2.2.10 (certification marks, operational marks and manufacturing marks)
- DNV GL emblem for offshore containers
- VL mark to be hard stamped on frame
- Manufacturer's serial number to be welded on frame

Periodical assessment

In order to maintain the validity of the type approval certificate, periodical assessments should be carried out according to DNVGL-CP-0338 at 2 and 3.5 year intervals. Periodical assessments will, when possible, be harmonised with other surveys and audits carried out.

END OF CERTIFICATE