DNV·GL

Certificate No:
**TAP00001UU**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Pipe System with Couplings**

with type designation(s)
**GM-X and GM-X-VAC**

Issued to
## ACO Industries k.s.
**Pribyslav, Czech Republic**

is found to comply with
**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**
**DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018**

## Application :

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

| | |
|---|---|
| **Temperature range:** | **0°C to +50°C** |
| **Max. pressure:** | **1 bar** |
| **Design:** | **Slip-on type / Sizes: DN40,50,70,80,100,125,150,200** |

Issued at **Høvik** on **2019-08-28**
This Certificate is valid until **2024-08-27**.
DNV GL local station: **Prague**

Approval Engineer: **Adel Samiei**

for **DNV GL**

**Zeinab Sharifi**
**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.


© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

## Product description
Pipe system with slip-on couplings
Material of Pipe and couplings: 1.0034 according to EN 10305-3 Normalized
Sealing material: NBR, SBR, EPDM, CR, Si, FKM

## Application/Limitation
The pipe system may be used for non-pressurized sanitary discharge systems and outside drainage systems.

Pipe penetrations through watertight bulkheads, fire bulkheads or shell plating shall be approved in each separate case. When penetrating a watertight bulkhead there shall be remotely operated valves secured to each bulkhead. The valves and control system shall be located outside the damage zone of the ship.

GM-X-VAC are approved to be installed in systems subject to pressure below atmospheric or vacuum conditions.

## Type Approval documentation

## Tests carried out
Burst Pressure test, vacuum test

## Marking of product
For identification to this type approval the products are to be marked with:
- Manufacturer's name or trade mark.
- Type designation

## Periodical assessment
For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment 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 DNVGL-CP-0338.