Certificate No: LR24150797TA
Issue Date: 01/08/2023
Expiry Date: 31/07/2028

# Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

| | |
|---|---|
| **Manufacturer** | **VOSS Fluid GmbH** |
| **Address** | Luedenscheider Str.52-54, Wipperfuerth, 51688, Germany |
| **Type** | Flare Flanges |
| **Description** | ZAKO-flange coupling system consists of:<br>- ZAKO-flange<br>- ZAKO-ring (with O-ring groove)<br>- O-ring<br>- 4 cylindr. screws DIN 912-10.9<br>Sealing on the pipe side by high specific surface pressure between the ZAKO-ring and the internal surface of the pipe. Sealing on the flange side by an O-ring. |
| **Trade Name** | VOSS Zako Flange Couplings |
| **Application** | General use in marine, offshore and industrial piping systems.<br>Restrictions (not to use):<br>1. starting/control air and CO2 systems.<br>2. inside machinery spaces of category A or accommodation spaces for inert gas main lines<br>3. fire extinguishing systems which are not always filled with water |
| **Specified Standard** | LR Rules and Regulations for the Classification of Ships, July 2024 |

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**Ratings**

| Series | Flange type | Flange size | Pipe outside (mm) | Nom. pressure (bar) |
|---|---|---|---|---|
| Normal | SAE | 1/2 to 3” | 16 to 18 | 250 |
| High press. | SAE | 1/2 to 2” | 16 to 65 * | 400 |
| High press. | Square | DN11 to DN49 | 16 to 65 * | 400 |

*) only up to OD 60.3 mm if intended for Class I and II - piping systems

**Additional Tests** Repeated assembly, leakage, burst pressure, hydraulic impulse and vibration, flame resistance tests conducted.

**Other Conditions** Trade mark “VOSS” to be shown on each coupling. The pipe couplings to be selected and installed as per producer’s recommendations and instructions.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

**Previous Version:** 93/20052(E5)

The Design Appraisal Document TSO/24-017822, prev. HMD 13340-04, Rev. 3 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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