

# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAP000024Z**  
Revision No:  
**1**

## This is to certify:

### That the Press fittings

with type designation(s)

**NiroSan Series 9000, NiroSan Gas Series 17000, NiroSan Industry Series 18000 (ECO Series)**

Issued to

**SANHA GmbH & Co. KG**  
**Essen, Germany**

is found to comply with

**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**

**DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints**

## Application :

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

**Temperature range:** up to 200°C  
**Max. working press.:** up to 16 bar  
**Sizes:** 15 mm to 108 mm

Issued at **Hamburg** on **2020-10-01**

This Certificate is valid until **2025-09-20**.

DNV GL local station: **Essen**

Approval Engineer: **Thilo Pabst**



for **DNV GL**

Digitally Signed By: Drews, Olaf

Location: DNV GL SE Hamburg, Germany

Signing Date: 2020-10-01

**Olaf Drews**  
**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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **262.1-033128-1**  
Certificate No: **TAP000024Z**  
Revision No: **1**

## PRODUCT DESCRIPTION

Press fittings for different applications made from stainless steel AISI 316L (1.4404) or AISI 316 (1.4408) with nominal diameter of 15 mm up to 108 mm.  
ECO means - in combination with pipes with reduced wall thicknesses of 0.6 to 1.5 mm.  
Fittings are sealed with a synthetic rubber O-ring and to be assembled by pressing tool.

### Scope

This type approval includes press fittings /-connections as specified in this certificate and in the product Catalogue FO009-013\_22\_17 pages 6 to 11.  
Not included are compression couplings with standard threads according DIN, ISO, EN or ANSI/ASME.

### Press Fitting – Technical Data

Type	Dimension/ Diameter	Nominal Pressure <sup>1</sup>	Fitting Material	Gasket material / (color)
<b>Nirosan</b> Serie 9000	15 mm – 54 mm 76.1 mm - 108 mm	16 bar <sup>1</sup> 8 bar	Stainless steel AISI 316L / 1.4404, AISI 316 / 1.4408	EPDM / (black)
<b>Nirosan Gas</b> Serie 17000				HNBR / (yellow)
<b>Nirosan Industry</b> Serie 18000				FKM / (red)

**Note1:** For compressed air systems – limited to 10 bar (diameter 15 - 54 mm).

### Pipes:

Type: NiroSan Systemrohr 9600 NiroSan-ECO / NiroTherm Systemrohr Serie 9100, compliant to EN 10312  
Material: Stainless Steel AISI 316L (1.4404) / Stainless Steel AISI 304 (1.4301)  
Diameter [mm]: 15 x 0.6,  
18 x 0.7, 22 x 0.7  
28 x 0.8,  
35 x 1.0, 42 x 1.1, 54 x 1.2,  
76.1 x 1.5, 88.9 x 1.5, 108 x 1.5

### Temperature range<sup>2</sup>

The temperature range for the press fittings are limited by the selected soft seal material.

Gasket material (color):	
EPDM (black)	-30°C up to +120°C
HNBR (yellow)	-20°C up to +70°C
FKM (red)	-20°C up to +200°C

**Note2:** For service temperatures outside -10°C up to 100°C, pressure reduction factors specified by manufacturer are to be observed.

**Pressing tool:** SANHA ECO 3 / ECO 301  
Other tools acc. to manufacturers specifications.

Job Id: **262.1-033128-1**  
Certificate No: **TAP000024Z**  
Revision No: **1**

## APPLICATION/ LIMITATIONS

The SANHA-Press system is type approved for non-main class applications in piping systems class III:

- Domestic warm water heating systems
- Cold water systems
- Potable water systems (only Pipe 9600 NiroSan-ECO)
- Compressed Service Air, non-essential
- Sanitary drains
- Non-essential systems

The selection of the fittings, pipes and O-rings for the corresponding application and the right mounting with the stipulated pressing tools has to be in accordance with the instructions of the manufacturer.

### Limitation:

- Pipe 9100 NiroTherm is not type approved for using in potable water systems
- Components made of stainless steel are not sea water resistant and therefore not suitable for seawater applications like Marine atmospheric environment, flowing sea water and stagnant sea water.

Following exceptions: AISI 316L - suitable for Marine atmospheric environment, flowing seawater  
AISI 316 - identical to AISI 316L but not allowed after welding

## Assembling and Installation

For assembling and installation, the instructions specified in the SANHA GmbH & Co. KG, Technical Product and Installation Information Catalogue in the actual valid version are to be observed.

## RESPONSIBILITIES

The company SANHA GmbH & Co. KG, Essen, Germany takes the responsibility that the design and the production of the products is in compliance with the Rules, Standards and/or Regulations listed on page 1 of this certificate.

### Production place

SANHA GmbH & Co.KG  
Werk: Hauptstraße 76  
01909 Großharthau - Schmiedefeld (Germany)

## TYPE APPROVAL DOCUMENTATION


Test Report K42/14; Vibration- & Pressure Pulsation-, Vacuum-, Pull-out- and Tightness test  
IMA Dresden, dated: 2015-04-21

IHA Fire Resistance Tests acc ISO 19921: 009-14 to 013/14, dated 2014-05-20/21  
109-15, 110-15, dated 2015-06-08

Monitoring report no. 120000854-19: NiroSan 17000  
MPA NRW, Dortmund, Germany, dated 2019-08-09

Burst Pressure Tests 15s9000, 89s9000, dated: 2015-04-28  
Burst pressure Test VA: DN15 ECO DNV GL, DN42 ECO DNV GL and DN108 ECO DNV GL,  
dated 2020-03-04

ISO 9001:2015 Certificate, dated: 2018-05-27



Job Id: **262.1-033128-1**  
Certificate No: **TAP000024Z**  
Revision No: **1**

SANHA GmbH Documentation:

- SANHA NiroSan system description (Series 9000)
- SANHA NiroSan Gas system description and (Series 17000)
- Confirmation: No changes in product
- Product catalogue NiroSan\_ FO009-013\_22\_17
- Technical Product and Installation Information Catalogue\_MH000/470\_29\_17

DNV GL Documentation:

- DNV GL Ref.-No.: 15-021193
- DNV GL TA-Certificate 14312-15 HH, dated 2016-02-15
- TA Assessment Report, dated 2020-03-02

Job Id: **262.1-033128-1**  
Certificate No: **TAP000024Z**  
Revision No: **1**

## TESTS CARRIED OUT

Fire resistance test, Burst test,  
Combined Vibration- & Pressure Pulsation test, Vacuum test, Pull-out test, Tightness test

## MARKING OF PRODUCT

For traceability of products, marking shall be legible and indelible. Products are to be marked at least as follows:

- Manufacturer's name or trademark. - Article no. - Type designation - dimension/diameter	Sample of marking: NiroSan® 69002A15 NiroSan Bend 90° 15
--	---

## PERIODICAL ASSESSMENT

assessments are successfully carried out.

The objective of the periodical assessment is to verify that the conditions for the type approval have not been altered.

Regulations for the periodical assessment of the type approval certificate are to be found in the DNV GL Class Programme CP-0338.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnvgl.com>

It is further to be noted that the Society shall be informed of any:

- Modifications to the product which are liable to affect its characteristics and functions, as originally specified and tested;
- Shifting of the production site and additional production site.

If such notifications are not made, the validity of the type approval certificate terminates.

## END OF CERTIFICATE