

# TYPE APPROVAL CERTIFICATE

**This is to certify:**

**That the Press fittings**

with type designation(s)  
**SANHA Therm Series 24000, SANHA Therm Industry Series 28000**

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

is found to comply with  
**DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints**  
**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**

**Application :**

**Product(s) approved by this certificate is/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: 12 mm to 108 mm**

Issued at **Hamburg** on **2020-08-31**

This Certificate is valid until **2025-08-30**.

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: 2020-09-03

**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.



## PRODUCT DESCRIPTION

Shaped fittings from galvanized carbon steel E195 (1.0034), E220 (1.0037) or E235 (1.0308) with nominal diameter of 12 mm to 108 mm and with wall thicknesses of 1.2 mm to 2.0 mm. Fittings are sealed with a synthetic rubber O-ring and to be assembled by pressing tool.

### Scope

This type approval includes press fittings as specified in this certificate and in the product Catalogue FO016-021\_34\_17 pages 4 to 7.

Not included are pipes and fittings without compression coupling, e.g. without coupling or standard threads according DIN, ISO, EN or ANSI/ASME, only.

### Press Fitting – Technical Data

Type	Dimension/ Diameter	Nominal Pressure <sup>1</sup>	Fitting Material	Gasket material / (color)
SANHA-Therm Series 24000	12 mm – 88.9 mm	16 bar	Carbon steel E195 (1.0034), E220 (1.0037), E235 (1.0308) acc. to EN 10305	EPDM / (black)
SANHA-Therm Industry Series 28000	108 mm	12 bar		FKM / (red)

**Note1:** For compressed air systems – limited to 10 bar

### Pipes:

Type: Externally galvanized carbon steel SANHA Therm Series 24000 / 24500,  
 Complete galvanized carbon steel SANHA Therm DZ Series 24000-DZ  
 Material: Carbon Steel E195 (1.0034), E220 (1.0037), E235 (1.0308)  
 according to EN 10305  
 Diameter [mm]: 12 x 1.2, 15 x 1.2, 18 x 1.2,  
 22 x 1.5, 28 x 1.5, 35 x 1.5, 42 x 1.5, 54 x 1.5, 67 x 1.5,  
 76.1 x 2.0, 88.9 x 2.0, 108 x 2.0

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

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

Gasket material (color):	
EPDM (black)	-30°C up to +120°C
FKM (red)	-20°C up to +200°C <sup>3</sup>

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

**Note3:** depending from medium

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

## APPLICATION/ LIMITATIONS

The SANHA-Press system is type approved for non-main class applications:

- Domestic warm water heating systems
- Cold water systems
- Compressed Service Air, non-essential
- Sanitary drains
- Non-essential systems

Further non-main-class applications may be accepted and have to be authorized by the manufacturer.

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Main-class-applications are listed under DNVGL-Rules Part 4 – Chapter 6 Section 1 Table 2.

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. The manufacturer`s list of the chemical resistance of the piping components has to be observed.

### **Limitation:**

These fittings may not be used in:

- Systems and conditions excluded above
- Piping systems of class I and II
- Potable water systems
- Flammable gases

### **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.

This certificate is valid for pipe connections using press fittings manufactured by SANHA GmbH & Co. KG.

## **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 K128/14; Vibration- & Pressure Pulsation-, Vacuum-, Pull-out- and Tightness test  
IMA Dresden, dated: 2015-03-17

Fire Resistance Test 052-15, 053-15 and 054-15 acc ISO 19921,  
IHA Dresden, dated: 2015-01-21

Burst Pressure Tests 12s24000, 108s24000 and 12s28000 108s28000, dated: 2015-04-28  
Burst pressure Test C-Stahl: DN15 DNV GL, DN42 DNV GL and DN108 DNV GL, dated 2020-03-04

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

#### **SANHA GmbH Documentation:**

- SANHA Therm system description (Series 24000)
- SANHA Therm Industry system description and (Series 28000)
- Confirmation: No changes in product
- Product catalogue SANHA Therm, SANHA Therm Industry\_FO016-021\_34\_17
- Technical Product and Installation Information Catalogue\_MH000/470\_29\_17

#### **DNV GL Documentation:**

- DNV GL Ref.-No.: 15-021193
- DNV GL TA-Certificate 14310-15 HH, dated 2015-06-02
- TA Assessment Report, dated 2020-03-02

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## 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: SANHA®-Therm  
124001A12  
SANHA Therm Bend 90°  
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## PERIODICAL ASSESSMENT

A condition for retention of the type approval certificate in its validity period is that periodical 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