



**CORRUGATED TUBE
304 STAINLESS STEEL**

Stahlmann

**OPERATION MANUAL
(WITH DATA SHEET)**

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PURPOSE OF THE PRODUCT

Stahlmann corrugated tubes made of stainless steel 304 are available in a polyethylene jacket and without it.

Stahlmann corrugated tubes made of stainless steel 304 without PE jacket are designed for use in hot and cold water supply systems for household and drinking purposes, heating, fire fighting systems, water underfloor heating, ventilation and air conditioning systems, as cable conduits for laying electrical and low current networks, as well as industrial pipelines that transport liquids, non-aggressive to the materials of the tube.

Stahlmann corrugated tubes made of stainless steel 304 in yellow PE jacket, in addition to the above, can also be used in gas supply systems.

TECHNICAL SPECIFICATIONS

The main technical characteristics and tube sizes are listed in the table:

Parameter:	Tube without PE jacket / Tube in PE jacket					
	Tube size (nominal diameter):					
	DN15	DN20	DN25	DN32	DN40	DN50
Inner diameter, mm	14.1	21.0	27.0	32.0	42	53.5
Wall thickness, mm	0.3					
Minimum number of corrugation crests, pcs. per 100 mm	20	19	18	18	14	13
Outer diameter, mm	18.1/ 19.1	25.6/ 26.6	32.0/ 33.0	37.6/ 38.6	48.1/ 49.1	59.9/ 60.9
Operating temperature at 1.5 MPa, °C	150/90			130/90		
Minimum temperature without pressure, °C	-60/ -40					
Maximum short-term temperature, °C	400 / 110					
Insulation layer thickness, mm	/ 0.5					
Working pressure, MPa	1.5			1		
Minimum bending radius, mm	40	50	60	80	120	150
Maximum (burst) pressure at temperature 20°C, MPa	21					
Coefficient of linear thermal expansion 10^{-6} , 1/°C	17					
Thermal conductivity coefficient, W/m*K	17					
Service life, not less than	30 years / 20 years					

INSTALLATION AND OPERATION INSTRUCTIONS

Tube without PE jacket	Tube in PE jacket
The installation of corrugated stainless steel tubes is carried out using a spanner wrench. The installation temperature is limited to -40 °C.	Installation of corrugated tubes made of stainless steel is carried out with a spanner wrench. Installation temperature is limited to -20 °C. Before installing fittings on the tube, it is necessary to remove the insulation layer of the tube to a length not exceeding the length of the entry into the fitting.

Flattening and fractures of the tube during installation are not allowed. If «kinks» occur, the damaged section must be removed.

Do not stretch the tube during installation. Open ends of the pipe must be covered to prevent dirt, debris and foreign objects from entering the tube.

When installing underfloor heating piping before pouring concrete, it is necessary to make a test supply of fluid at a pressure of 6 bar, and leave it for 24 hours. If after this time the pressure remains unchanged, the test is considered successful.

After that, the filled tubes that are still pressured are filled with screed.

Salt, saline solutions or other chemicals aggressive to stainless steel must not be added to cement mortars or concrete that will come into contact with stainless steel tubes.

It is not allowed to contact corrugated tubes of stainless steel with structures of low-alloy carbon steel.

The placement of fixed supports in horizontal and vertical laying of the pipeline should be designed in accordance with the table:

Tube size (nominal diameter):	Spacing between supports, mm:
15, 20	500
25, 32	250
40,50	

Pipeline should be installed at a distance of at least 10 mm between the tubes and building structures.

STORAGE AND TRANSPORTATION CONDITIONS

Corrugated tubes made of stainless steel do not belong to the category of dangerous goods, which allows their transportation by any type of transport in accordance with the rules of goods transportation, operating in this type of transport.

During rail and road transportation, tube coils are allowed to be transported only in covered rolling stock. To avoid damage, tube shall be laid on even surface without any sharp protrusions.

Throwing tubes from vehicles is not allowed.

Pipe shall be stored in ventilated sheds or rooms.

Coils with tubes may be stored in stacks up to three meters high.

ENVIRONMENTAL PROTECTION REQUIREMENTS

In the manufacturing process of corrugated tubes no toxic wastes are formed.

Waste tubes under normal climatic conditions do not decompose and do not emit harmful products in concentrations dangerous for human body and have no harmful effect on the environment.

WARRANTY

The warranty period is for the entire service life of the product.

The service life of tubes without jacket is not less than 30 years if the customer observes the conditions of laying, operation and storage.

Service life of tubes in jacket is not less than 20 years if the customer observes the conditions of laying, operation and storage.

The manufacturer guarantees preservation of all consumer properties of Stahlmann corrugated tubes made of stainless steel 304, if the rules of use, transportation, storage, installation and operation are observed.

Warranty service includes replacement of the product throughout the warranty period, subject to the following conditions:

- the product was used as intended
- the product was used in accordance with this Manual;
- the product does not have any mechanical damage that is the cause of malfunction;
- the rules and requirements for transportation and storage of the product have been followed.

If during or after diagnosis it is found that any of the above conditions are not fulfilled, the Manufacturer or its representative has the right to refuse warranty service by issuing a corresponding statement.

The product is void of warranty and may not be replaced in the following cases:

- the warranty has expired;
- the product was damaged during transportation after receipt (in storage, if the product was not put into operation), or the rules of installation and operation, transportation and storage have been violated;
- the terms of the warranty have been violated, as determined in each case by the manufacturer's technician or his representative

The following damages are not covered by the warranty or any other liability:

- mechanical damages: cracks, dents, etc., caused by bumps, falls or scratches;
- damages caused by ingestion of foreign substances and objects;
- damages caused by improper use or use of non-standard or non-compatible equipment that operates with or is connected to the product;
- damages caused by the elements, fire and other external factors, climatic and other conditions.

The Buyer must send the following documents to the Manufacturer or its representative in order for the warranty obligations to be fulfilled:

- the product data sheet and a label with the name and type of the product;
- the buyer's claim indicating the nature of the failure and operating conditions;
- the document stating the date of sale.

Please keep this Operation Manual (with data sheet) and the label with the name and type of the product for the entire warranty period!

WARRANTY CARD

I have read the storage and transportation conditions, the operating instructions for the Stahlmann corrugated tubes made of stainless steel 304, the warranty conditions, and have no complaints about the product appearance:

_____ / _____ / _____ 20____
buyer's signature print name date of purchase

Seller _____

Seller's address _____

Seller's phone number _____

Date of sale _____

seller's stamp

IMPORTER: SST GmbH

i_Park Tauberfranken 18 97922,
Lauda-Königshofen, Germany
Tel.: +49 9343 9809100