GAMMA SWISS

Corrugated Stainless Steel Tubes and Fittings

STAHL MANN

Contents

GammaSwiss — part of SST Group

SST Group, founded in 1991, is a leading global provider of electric heating cable solutions and manufacturer of ex-proof equipment. SST products and solutions can are exported to over 60 countries worldwide.

SST Group is a vertically integrated holding that employs over 1 500 specialists. The Group encompasses four plants, an industrial R&D-center, an engineering company, several distribution companies and an international branch network.

Manufacturing of all critical components of electric heating systems

In-house manufacturing of conductive plastics and self-regulating heating cables

International certification, including IECEx, ATEX, VDE

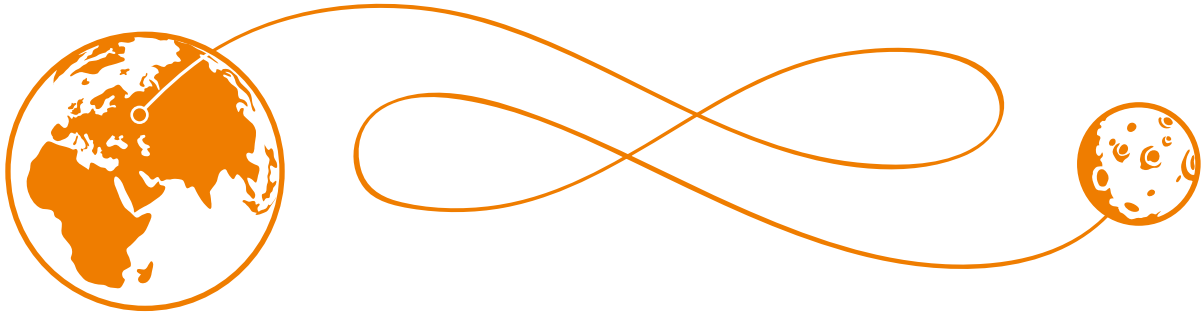
Extensive engineering and project management expertise as an EPC-contractor

- **30 years of success**
- **1500 employees**
- **4 own plants**
- **Offices in Germany, Switzerland, UAE, India, Latvia**
- **Export to over 60 countries**

1 200
implemented projects with corrugated tubes

№4
manufacturer of CSST in the world

3 000 km
of corrugated tubing per year



Total length of electric heating cables produced by SST Group exceeds

1.5 mln km
3 times the distance from Earth to the Moon

65 000 m²
production facilities

13.8 mln
heating systems installed

Leading Manufacturer of Corrugated Stainless Steel Tubes

In 2013, we launched serial production of flexible corrugated tubes Stahlmann made of high-alloyed 304 stainless steel. Our manufacturing site is equipped with custom-built state-of-the-art technology.

Stahlmann corrugated tubes meet the highest international quality standards

High quality stainless steel is used in the manufacturing process. Polished steel strip is shaped into a tube, the edges are welded together, and the tube is then corrugated. 100% tightness of the weld – a prerequisite for the reliability and durability of the tube is ensured by a proven welding technology, hi-tech equipment, and compliance with cross-industry standards.

To make tubes flexible, they are annealed in a state-of-the-art induction furnace with a high feed rate.

Stahlmann corrugated tube fed for annealing

304 and 316L stainless steel strip used in the manufacture of corrugated tubes

Stahlmann corrugated tube cooled after annealing

Tube corrugation process

Monitoring the annealing process of Stahlmann corrugated tubes

A broad range of corrugated tubes and quick-assembly fittings

We produce the following types of corrugated tubes:

- Annealed
- Unannealed
- Annealed in a yellow jacket for gas distribution systems
- Annealed in a white jacket for water supply systems

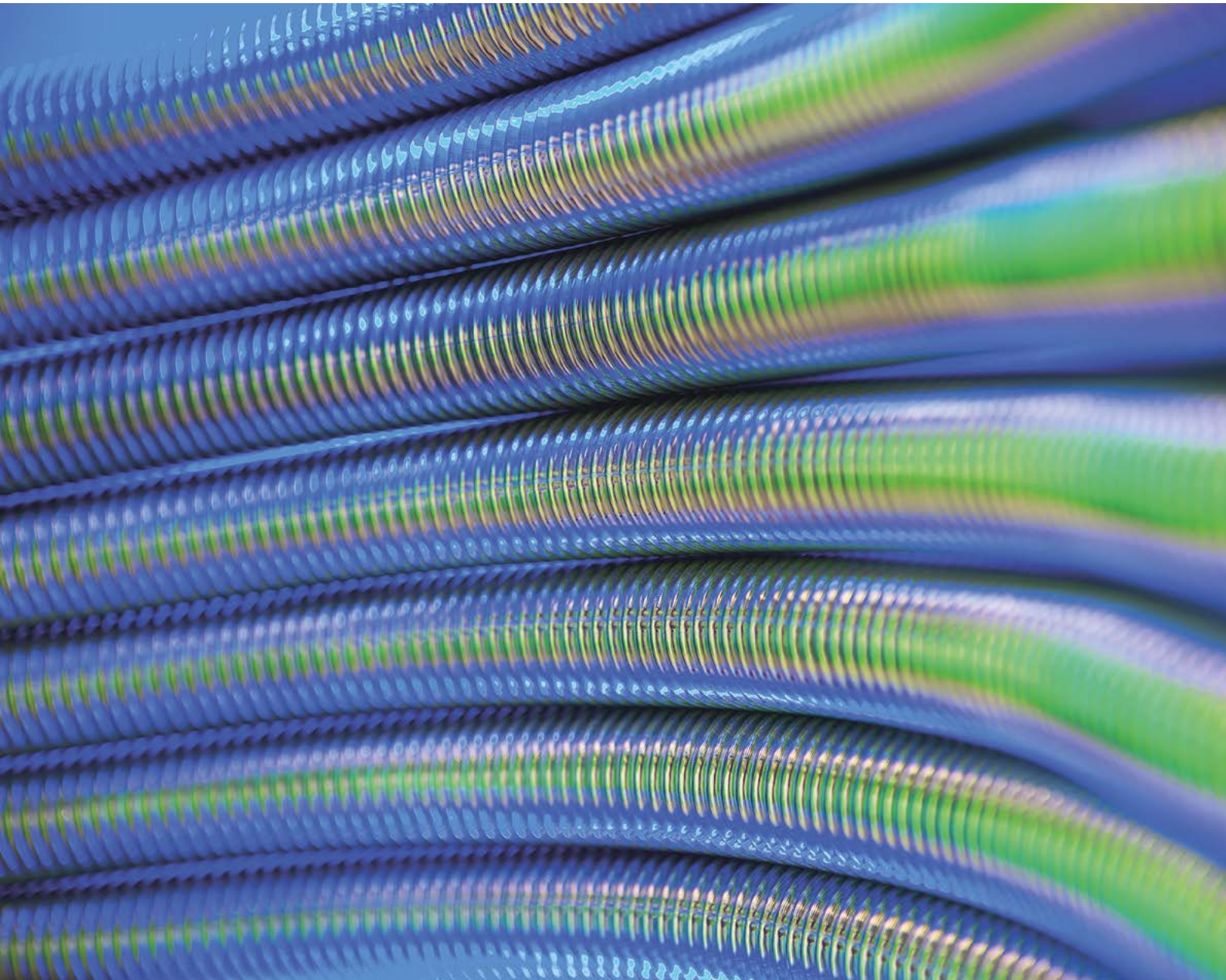
For connecting Stahlmann tubes, we offer a broad range of high-quality brass fittings of a unique quick assembly design, providing convenience and high speed of installation.

Proven quality and reliability

Stahlmann stainless steel flexible corrugated tubes and fittings come with all the necessary certificates and endorsements.

Corrugated tubes have been tested for compliance with the applicable fire and industrial safety standards. Based on the test results, Stahlmann tubes and fittings are recommended for use in water and foam fire extinguishing systems.

All products undergo 100% quality control.



Applications:

Firefighting

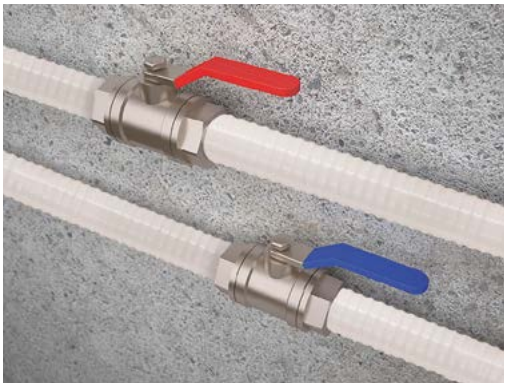
Water supply lines to newly installed or relocated sprinklers. The use of corrugated tubes and fasteners allows installing the system in spaces with any layout, quickly and without the need for additional equipment. The only tools needed are a roller tube cutter and two wrenches.

Cable conduits

Corrugated steel tube is ideal for use as a sealed metal hose when laying power supply and communication networks. It reliably protects the cable from external mechanical and temperature impacts.

Gas supply

Installation of flexible gas connectors. The product range includes corrugated tube in a yellow jacket and special fittings for gas distribution applications.



Water supply

Corrugated tubes in a white jacket and flexible connections are available for laying of cold and hot water pipelines and boiler tubing. The tube is corrosion-resistant, hydraulic impact-proof and comes with all the necessary certificates for use in potable water systems.

Heating

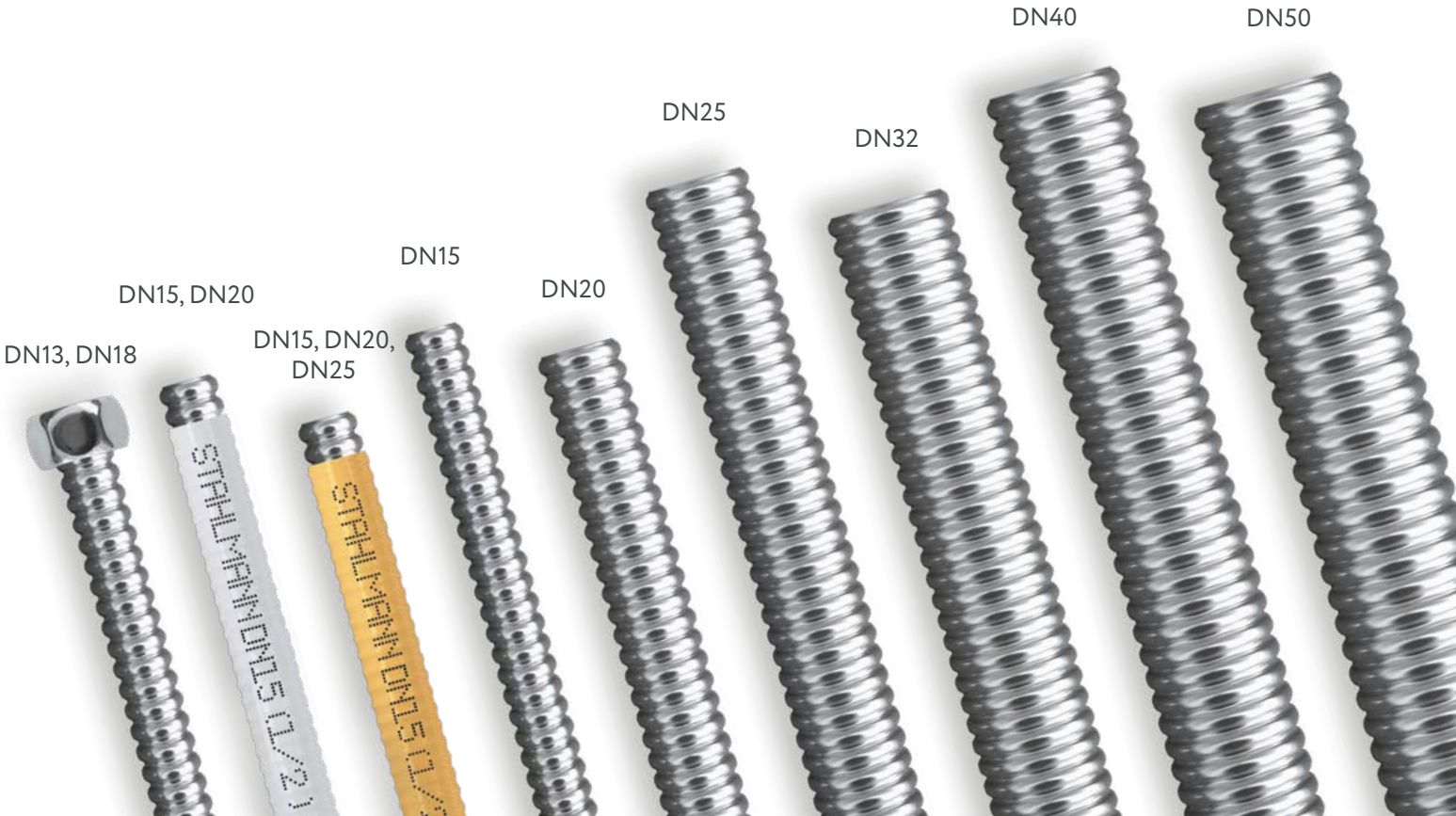
Laying of heating system tubes and connectors. The tube is resistant to temperature changes and corrosion, resistant to hydraulic impacts and has an improved heat transfer rating. Convenient for laying in confined spaces.

Water underfloor heating

Due to its high thermal conductivity, Stahlmann tube is ideal for underfloor heating applications. Due to high flexibility of material, challenging configurations can be assembled with minimal effort. The tubes are resistant to freezing, do not require additional flushing and have a low linear expansion coefficient.

Air conditioning and ventilation

Tubing of fan coil units and air handling units. Annealed corrugated tubes provide quick installation and reliable connection.



Advantages

- **A universal solution** for utility systems
- **Easy to cut and bend,** for easy installation
- Bending **does not alter the cross-section,** no microcracking and no mechanical stress on the metal occurs
- Annealed tubes **have improved plasticity and flexibility** and a significant safety margin for multiple bending
- **Resistant to aggressive environments**
- Linear expansion coefficient when heated is **20 times lower** than in plastic tubes – an ideal solution for heating systems
- **Zero oxygen permeability –** the tube does not allow oxygen into the tube. Oxygen presence advances corrosion of other components of the heating system made of ordinary steel, such as radiators or boiler heat exchangers. Hence, protection from oxygen translates into prolonged service life of the whole system.
- **Environmental safety,** compatibility with drinking water, no risk of harmful substances being released when exposed to temperature fluctuations

Features of annealed corrugated tubes

Annealed corrugated tubes are flexible and easy to install, preventing unnecessary strain on the metal at the folds. Ideal for installation in challenging conditions.

Features of unannealed corrugated tubes

Ideal for straight stretches of long pipelines due to greater rigidity compared to annealed tubes.

Specifications

Parameter	Tube size (nominal bore)					
	DN15	DN20	DN25	DN32	DN40	DN50
Internal tube size, mm	14.1	21.0	27.0	32.0	42.0	53.5
Wall thickness, mm	0.3				0.35	
Corrugation crests, min. per 100 mm	20	19	18	18	14	13
External tube size, mm	18.1	25.6	32.0	37.6	48.1	59.9
Operating temperature at 1.5 MPa, °C	150				130	
Maximum short-term temperature, °C	400					
Operating pressure, MPa	1.5				1	
Minimum bending radius of an annealed tube, mm	30	40	50	80	120	150
Minimum bending radius of an unannealed tube, mm	40	50	60	90		
Maximum (collapse) pressure at 20 °C, MPa	21					
Linear expansion coefficient 10^{-6}, 1/°C	17					
Thermal conductivity coefficient, W/m*K	17					
Service life, minimum	30 years					

Stahlmann Corrugated Stainless Steel Tubes for Gas Supply

Stahlmann tubes bend easily without the need for special tools, without any effect on the clear opening, and without the development of microcracks and putting mechanical stress on the metal

Stahlmann corrugated tubes in a yellow PE jacket are intended for use in gas supply systems. They can be used in internal gas supply pipelines or for connecting gas installations.

Stahlmann can be easily mounted within minutes, even in restricted spaces, without any decline of quality and reliability. For the complete assembly of a pipeline, an ordinary tube cutter and two spanner wrenches are needed.

For connections, Stahlmann dielectric gas brass fittings with an insulating ring are available. The ring prevents the metal parts of the fitting from coming into contact with the tube, ensuring safe operation of the pipeline.

Specifications

Parameter	Tube size (nominal bore)		
	DN15	DN 20	DN25
Internal tube size, mm	14.1	21	27
External tube size, mm	19.1	26.6	33
Wall thickness, mm	0.3		
Insulation material	polyethylene		
Insulation thickness, mm	0.5		
Corrugation crests, min. per 100 mm	20	19	18
Operating temperature at 1.5 MPa, °C	90		
Min. temperature without pressure, °C	-40		
Maximum short-term temperature, °C	110		
Operating pressure, MPa	1.5		
Min. bending radius, mm	40	50	60
Maximum (collapse) pressure at 20 °C, MPa	21		
Linear expansion coefficient 10^{-6}, 1/°C	17		
Thermal conductivity coefficient, W/m*K	17		
Service life, minimum	20 years		

Stahlmann Corrugated Stainless Steel Tubes for Water Supply

High reliability, convenient and quick installation. Stahlmann tubes in a white jacket can be bent easily without the need for special tools and preserve their shape, without kinking and clear opening reduction

Corrugated tubes in a white polyethylene jacket are intended for water supply and heating applications in residential and office buildings.

Stahlmann can be easily mounted within minutes, even in restricted spaces, without any decline of quality and reliability.

It is easy to secure a tube in the desired position without additional tools and equipment.

Tubes are connected by robust and reliable quick-assembly brass fittings for 100% leak-proof performance.

Specifications

Parameter	Tube size (nominal bore)	
	DN15	DN20
Internal tube size, mm	14.1	21
External tube size, mm	19.1	26.6
Wall thickness, mm	0.3	
Insulation material	polyethylene	
Insulation thickness, mm	0.5	
Corrugation crests, min. per 100 mm	20	19
Operating temperature at 1.5 MPa, °C	90	
Min. temperature without pressure, °C	-40	
Maximum short-term temperature, °C	110	
Operating pressure, MPa	1.5	
Min. bending radius, mm	40	50
Maximum (collapse) pressure at 20 °C, MPa	21	
Linear expansion coefficient 10^{-6}, 1/°C	17	
Thermal conductivity coefficient, W/m*K	17	
Service life, minimum	20 years	

Stahlmann Corrugated Stainless Steel Tubes for Flared Connection

Flexible connections on the basis of Stahlmann corrugated tubes ensure reliable and tight connection of water installations

Corrugated tubes Stahlmann are used for making flexible connections in water installations.

Flexible connections based on corrugated tubing provide high reliability and long service life. For 100% leak-proof performance, use original Stahlmann union nuts and gaskets.

Specifications

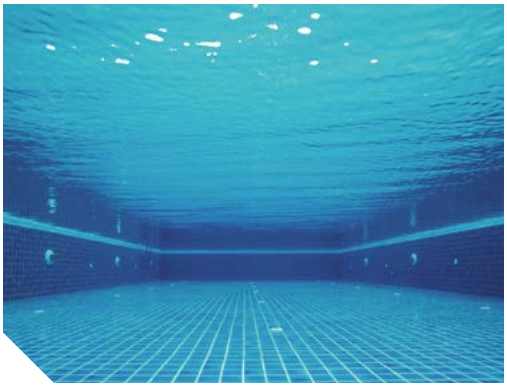
Parameter	Tube size (nominal bore)	
	DN13	DN18
Internal tube size, mm	12.4	16.0
Wall thickness, mm	0.3	
Corrugation crests, min. per 100 mm	21.5	20.5
External tube size, mm	16.1	20.0
Operating temperature at 1.5 MPa, °C	150	
Minimum temperature without pressure, °C	-60	
Operating pressure, MPa	1.5	
Minimum bending radius of an annealed tube, mm	33	45
Maximum (collapse) pressure at 20 °C, MPa	21	
Linear expansion coefficient 10^{-6}, 1/°C	17	
Thermal conductivity coefficient, W/m*K	17	
Service life, minimum	30 years	

CORRUGATED STAHLMANN TUBE 316L STAINLESS STEEL

Applications

Heat exchangers

Improved heating capacity, flexibility, corrosion and high temperature resistance make Stahlmann corrugated stainless steel 316L tubes the perfect choice for industrial and domestic heat exchangers.



Swimming pools and buildings in maritime climate

Due to increased corrosion resistance to chlorine compounds, where 304 stainless steel pipe cannot be used, it is possible to install utilities in maritime climates.

Industrial facilities, including energy, food, pharmaceutical and chemical production facilities

Excellent for use as piping in manufacturing due to high corrosion resistance to a wide range of chemicals.

Installation of fiber optic and network cables in data centers and tunnels

Ideal for use as a sealed metal hose when laying electrical and communications networks. The corrugated tube will reliably protect the cable from mechanical and thermal effects, as well as from the effects of aggressive environments.

Advantages

- **Molybdenum** as a component makes the steel more resistant to corrosion in seawater, food acids, and caustic chlorine.
- **Increased heat resistance.** 316L steel does not lose its properties even at temperatures up to 600 °C and has better creep resistance at high temperatures.
- **Improved mechanical properties** at below-freezing temperatures.

Specifications

Parameter	Tube size (nominal bore)					
	DN15	DN20	DN25	DN32	DN40	DN50
Internal tube size, mm	14.1	21.0	27.0	32.0	42.0	53.5
Wall thickness, mm	0.3				0.35	
Corrugation crests, min. per 100 mm	20	19	18	18	14	13
External tube size, mm	18.1	25.6	32.0	37.6	48.1	59.9
Operating temperature at 1.5 MPa, °C	150				130	
Maximum short-term temperature, °C	400					
Operating pressure, MPa	1.5				1	
Minimum bending radius of an annealed tube, mm	30	40	50	80	120	150
Minimum bending radius of an unannealed tube, mm	40	50	60	90		
Maximum (collapse) pressure at 20 °C, MPa	21					
Linear expansion coefficient 10^{-6}, 1/°C	17					
Thermal conductivity coefficient, W/m*K	17					
Service life, minimum	30 years					

For gas supply systems

Parameter	Tube size (nominal bore)		
	DN15	DN20	DN25
Internal tube size, mm	14.1	21	27
External tube size, mm	19.1	26.6	33
Wall thickness, mm	0.3		
Insulation material	polyethylene		
Insulation thickness, mm	0.5		
Corrugation crests, min. per 100 mm	20	19	18
Operating temperature at 1.5 MPa, °C	90		
Min. temperature without pressure, °C	-40		
Maximum short-term temperature, °C	110		
Operating pressure, MPa	1.5		
Min. bending radius, mm	40	50	60
Maximum (collapse) pressure at 20 °C, MPa	21		
Linear expansion coefficient 10^{-6}, 1/°C	17		
Thermal conductivity coefficient, W/m*K	17		
Service life, minimum	20 years		

Flaring Tool

1. When assembling flexible connections, we recommend using the universal Stahlmann flaring tool

- Compatible with tubes DN13 and DN18 , interchangeable head pieces are included
- Does not require the use of a hammer
- In-house manufacturing

How to make a flexible connection:

1. Use a roller tube cutter to cut off a portion of the corrugated tube of the required length for flaring.
2. Open the flaring tool's head piece and insert the corrugated tube so that the first corrugation of the tube extends beyond the stopper.
3. Close the head piece. With 5–6 return movements of the flaring tool handle, shape the end of the tube so that the first corrugation is flared.
4. Remove the tube from the tool.
5. Insert the corrugated tube into the head piece so that the second corrugation of the tube extends beyond the stopper. *Sequential flaring of the first and second corrugations gives a smoother tube end and a more reliable connection, compared to the two corrugations flared at once.* ***Important!*** *Put on both locknuts before flaring the second end of the tube.*
6. Flare the other end of the tube by following Steps 2–5. During the flaring process, the corrugated tube is shaped to form a stop ring for the cap locknut. After flaring, insert Stahlmann locknut gaskets of the matching diameter into the ends of the tube and tighten the locknuts with a wrench to the desired connection point.

Stahlmann Corrugated Tube Range

- Annealed
- Unannealed
- Annealed in a jacket (white, yellow)
- For flared connection

Nominal diameter: DN13, DN15, DN18, DN20, DN25, DN32, DN40, DN50

Shipped as: convenient coils (10, 20, 30, 50, 100)

Ordering information

Corrugated tube, CSST304 Stahlmann DN15, annealed, 10m

- tube type
- coil length
- tube material
- nominal diameter

Name	Order code
Corrugated tube CSST316L Stahlmann DN13, annealed, 20m	SP3161300020-E
Corrugated tube CSST316L Stahlmann DN18, annealed, 20m	SP3161800020-E
Corrugated tube CSST316L Stahlmann DN15, annealed, 10m	SP3161500010-E
Corrugated tube CSST316L Stahlmann DN15, annealed, 30m	SP3161500030-E
Corrugated tube CSST316L Stahlmann DN15, annealed, 50m	SP3161500050-E
Corrugated tube CSST316L Stahlmann DN15, annealed, 100m	SP3161500100-E
Corrugated tube CSST316L Stahlmann DN20, annealed, 10m	SP3162000010-E
Corrugated tube CSST316L Stahlmann DN20, annealed, 20m	SP3162000020-E
Corrugated tube CSST316L Stahlmann DN20, annealed, 30m	SP3162000030-E
Corrugated tube CSST316L Stahlmann DN20, annealed, 50m	SP3162000050-E
Corrugated tube CSST316L Stahlmann DN20, annealed, 100m	SP3162000100-E
Corrugated tube CSST316L Stahlmann DN25, annealed, 20m	SP3162500020-E
Corrugated tube CSST316L Stahlmann DN25, annealed, 30m	SP3162500030-E
Corrugated tube CSST316L Stahlmann DN32, annealed, 10m	SP3163200010-E
Corrugated tube CSST316L Stahlmann DN32, annealed, 20m	SP3163200020-E
Corrugated tube CSST316L Stahlmann DN40, annealed, 10m	SP3164000010-E
Corrugated tube CSST316L Stahlmann DN50, annealed, 10m	SP3165000010-E
Corrugated tube CSST316L Stahlmann DN15, annealed, yellow jacket, 10m	SP3161502010-E
Corrugated tube CSST316L Stahlmann DN15, annealed, yellow jacket, 30m	SP3161502030-E
Corrugated tube CSST316L Stahlmann DN15, annealed, yellow jacket, 50m	SP3161502050-E
Corrugated tube CSST316L Stahlmann DN20, annealed, yellow jacket, 10m	SP3162002010-E
Corrugated tube CSST316L Stahlmann DN20, annealed, yellow jacket, 30m	SP3162002030-E
Corrugated tube CSST316L Stahlmann DN20, annealed, yellow jacket, 50m	SP3162002050-E
Corrugated tube CSST316L Stahlmann DN25, annealed, yellow jacket, 10m	SP3162502010-E
Corrugated tube CSST316L Stahlmann DN25, annealed, yellow jacket, 30m	SP3162502030-E
Corrugated tube CSST316L Stahlmann DN25, annealed, yellow jacket, 50m	SP3162502050-E

Name	Order code
Corrugated tube CSST304 Stahlmann DN13, annealed, 20m	SP3041300020-E
Corrugated tube CSST304 Stahlmann DN18, annealed, 20m	SP3041800020-E
Corrugated tube CSST304 Stahlmann DN15, annealed, 10m	SP3041500010-E
Corrugated tube CSST304 Stahlmann DN15, annealed, 30m	SP3041500030-E
Corrugated tube CSST304 Stahlmann DN15, annealed, 50m	SP3041500050-E
Corrugated tube CSST304 Stahlmann DN15, annealed, 100m	SP3041500100-E
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Corrugated tube CSST304 Stahlmann DN25, annealed, 20m	SP3042500020-E
Corrugated tube CSST304 Stahlmann DN25, annealed, 30m	SP3042500030-E
Corrugated tube CSST304 Stahlmann DN32, annealed, 10m	SP3043200010-E
Corrugated tube CSST304 Stahlmann DN32, annealed, 20m	SP3043200020-E
Corrugated tube CSST304 Stahlmann DN40, annealed, 10m	SP3044000010-E
Corrugated tube CSST304 Stahlmann DN50, annealed, 10m	SP3045000010-E

Product range

Corrugated tubes (304 stainless steel)

Coil length / Nominal diameter	DN15	DN20	DN25	DN32	DN40	DN50	DN13	DN18
10 m	+	+		+	+	+		
20 m		+	+	+			+	+
30 m	+	+	+					
50 m	+	+						
100 m	+	=						

Corrugated tubes (316L stainless steel)

Coil length / Nominal diameter	DN15		DN20		DN25		DN32	DN40	DN50	DN13	DN18
Tube type	annealed	annealed, yellow jacket	annealed	annealed, yellow jacket	annealed	annealed, yellow jacket	annealed	annealed	annealed	annealed	annealed
10 m	+	+	+	+		+	+	+	+		
20 m			+		+		+			+	+
30 m	+	+	+	+	+	+					
50 m	+	+	+	+		+					
100 m	+										

Stahlmann Fittings

Special design based on a high-strength self-tightening ring

To ensure the tight installation of Stahlmann corrugated tube-based systems, we offer an extensive range of original fittings.

Fittings are made of high quality CW617N brass.

The distinctive feature of the fittings is their custom design developed by SST and allowing the part to be fitted to the tube in a matter of seconds.

To install the fitting, simply insert the tube into it and tighten the locknut. No disassembly of the fitting is required.

All Stahlmann fittings are certified. Thanks to the high-quality materials used in the manufacturing of Stahlmann fittings, they provide a high degree of dust and moisture protection, temperature resistance (to both high and low temperatures), resistance to sparks, rodents, fungus, mold.

Specifications

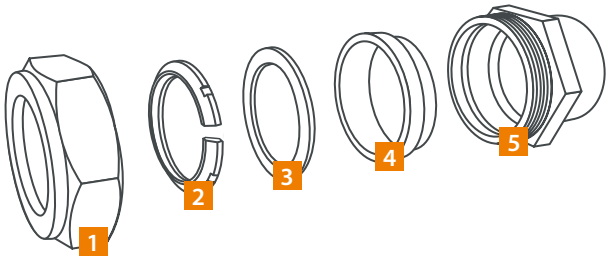
Parameter	Fitting size for water supply						Fitting size for gas supply		
	DN15	DN20	DN25	DN32	DN40	DN50	DN15	DN20	DN25
Body and locknut material	Brass CW617N								
Body and locknut coating*	Nickel		-						
Thread size, inches	½	¾	1	1¼	1½	2	½	¾	1
Operating temperature, °C	-50 ... +110 (-50 ... +160**)						-20 .... +100		
Operating pressure, MPa	1.5	1.2	1.0	1.0	0.6	0.4	1.5	1.2	1.0
Maximum short-term temperature, °C	150						-		
Service life, minimum	30 years								
Warranty	2 years								

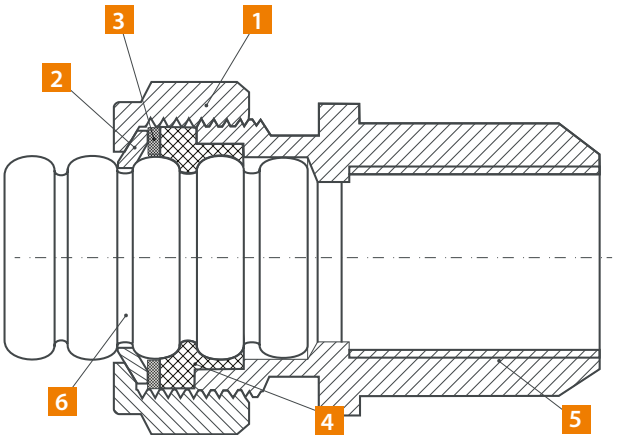
* – fittings can be either coated or uncoated
** – when using high-temperature silicone gaskets (to be ordered separately)

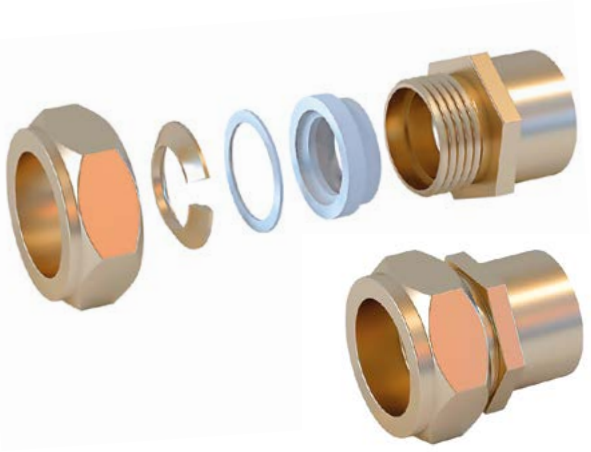
Advantages

- Manufacturing method – hot forging
- Material of the fitting and locking ring is CW617N brass (58–59% copper, providing maximum strength and ductility)
- Locking ring of 304 stainless steel
- Both nickel-plated and uncoated fittings are available

Quick-Assembly Fitting Design

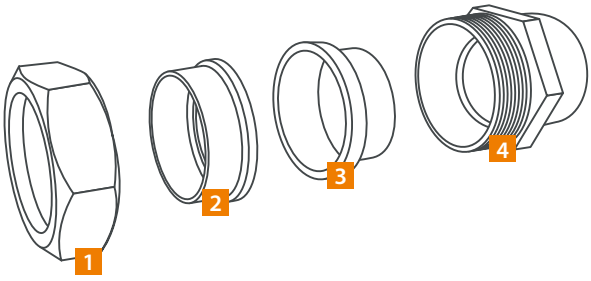


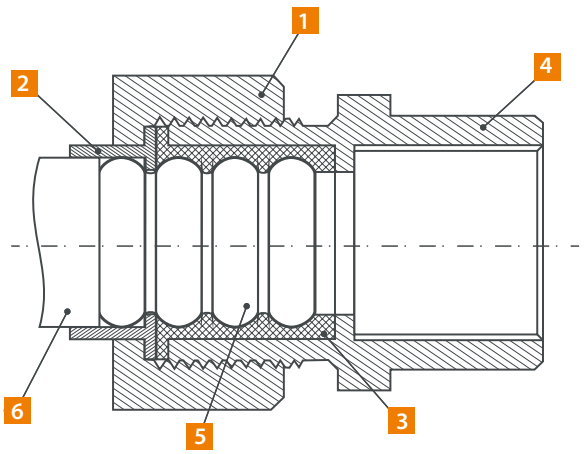




1. Union nut
2. Locking ring (CW617N brass)
3. Locking ring (stainless steel)
4. Silicone gasket
5. Body
6. Corrugated tube

Design of Fittings for Gas Supply





1. Union nut
2. Dielectric gasket made of polyamide PA66 (nylon) with fiberglass (30%)
3. Sealing gasket made of Fluoroelastomer (FPM)
4. Body
5. Stainless steel corrugated tube, no jacket
6. Stainless steel corrugated tube, yellow jacket

Stahlmann Fitting Range

Fitting (F)

15x ½ EF	20x ¾ EF
15x ½ НП EF	20x ¾ НП EF
15x ¾ EF	25x1 EF
20x½ EF	32x1¼ EF

15 x ¾ EF Eurocone fitting for connecting a corrugated tube to a water floor heating manifold

Fitting (M)

15x ½ EF	20x ¾ EF
15x ½ НП EF	20x ¾ НП EF
15x ¾ EF	25x1 EF
32x1¼ EF	20x½ EF

Union

15x15 EF	20x15 EF
20x20 EF	25x15 EF
25x25 EF	25x20 EF
32x32 EF	

Tee fitting (F)
15 x ½ x 15 EF
20 x ¾ x 20 EF
25 x 1 x 25 EF
32 x 1¼ x 32 EF

Tee fitting (M)
15 x ½ x 15 EF

Equal Tee fitting
15 x 15 x 15 EF
20 x 20 x 20 EF
25 x 25 x 25 EF

Elbow fitting
15 x ½ EF
20 x ¾ EF
25 x 1 EF

Union nut
½
¾

Silicone gasket for union nuts
½
¾

Elbow fitting (M)
15x ½ EF

Elbow fitting (Wall Plate)
15 x ½ EF
20 x ¾ EF

Fitting (F) gas
15 x ½
20 x ¾
25 x 1

Fitting (M) gas
15 x ½
20 x ¾
25 x 1

Silicone gasket

DN15	DN25
DN20	DN32

High temperature gasket

DN15	DN25
DN20	DN32

Locking ring, brass

DN15	DN25
DN20	DN32

Ball valve (M)
15 x ½ NP EF

Ball valve (F)
15 x ½ NP EF

Fasteners for automatic fire extinguishing systems

Complete fasteners for automatic fire extinguishing systems

Tube bracket
Stahlmann Bracket L

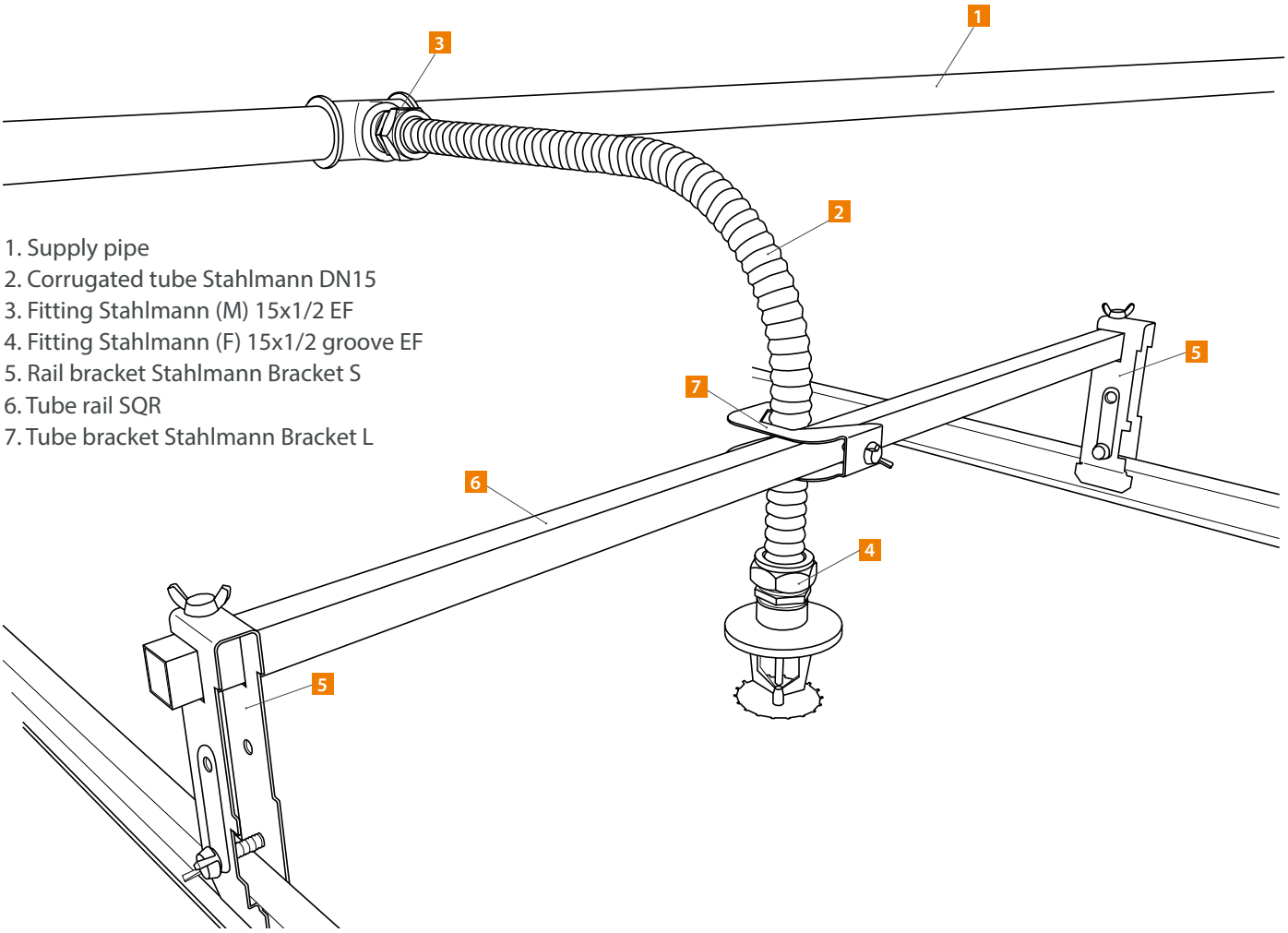
Rail bracket
Stahlmann Bracket S

Tube rail SQR

15x ½ groove EF
(grooved fitting for fire extinguishing systems)

Clamp for 15x½"
Stahlmann fitting

Stahlmann fastener system assembly diagram for Armstrong ceilings



1. Supply pipe
2. Corrugated tube Stahlmann DN15
3. Fitting Stahlmann (M) 15x1/2 EF
4. Fitting Stahlmann (F) 15x1/2 groove EF
5. Rail bracket Stahlmann Bracket S
6. Tube rail SQR
7. Tube bracket Stahlmann Bracket L

Fittings for corrugated tubes and accessories	Order code
Fitting Stahlmann (F) 15x1/2 EF	SSFL1501/2BEF-E
Fitting Stahlmann (F) 15x1/2 NP EF	SSFL1501/2NEF-E
Reducing fitting Stahlmann (F) 15x3/4 EF	SSFL1503/4BEF-E
Eurocone fitting Stahlmann (F) 15x3/4 EF	SSFL1503/4BEFE-E
Fitting Stahlmann (F) 20x3/4 EF	SSFL2003/4BEF-E
Reducing fitting Stahlmann (F) 20x1/2 EF	SSFL2001/2BEF-E
Fitting Stahlmann (F) 20x3/4 NP EF	SSFL2003/4NEF-E
Fitting Stahlmann (F) 25x1 EF	SSFL250001BEF-E
Fitting Stahlmann (F) 32x1 1/4 EF	SSFL3211/4BEF-E
Fitting Stahlmann (F) 40x1 1/2 EF	SSFL4011/2BEF-E
Fitting Stahlmann (F) 50x2 EF	SSFL500002BEF-E
Fitting Stahlmann (M) 15x1/2 EF	SSML1501/2BEF-E
Fitting Stahlmann (M) 15x1/2 NP EF	SSML1501/2NEF-E
Reducing fitting Stahlmann (M) 15x3/4 EF	SSML1503/4BEF-E
Fitting Stahlmann (M) 20x3/4 EF	SSML2003/4BEF-E
Reducing fitting Stahlmann (M) 20x1/2 EF	SSML2001/2BEF-E
Fitting Stahlmann (M) 20x3/4 NP EF	SSML2003/4NEF-E
Fitting Stahlmann (M) 25x1 EF	SSML250001BEF-E
Fitting Stahlmann (M) 32x1 1/4 EF	SSML3211/4BEF-E
Fitting Stahlmann (M) 40x1 1/2 EF	SSML4011/2BEF-E
Fitting Stahlmann (M) 50x2 EF	SSML500002BEF-E
Union Stahlmann 15x15 EF	SSWL15/150BEF-E
Union Stahlmann 20x20 EF	SSWL20/200BEF-E
Union Stahlmann 25x25 EF	SSWL25/250BEF-E
Union Stahlmann 32x32 EF	SSWL32/320BEF-E
Reducing union Stahlmann 20x15 EF	SSWL20/150BEF-E
Reducing union Stahlmann 25x15 EF	SSWL25/150BEF-E
Reducing union Stahlmann 25x20 EF	SSWL25/200BEF-E
Union Stahlmann 40x40 EF	SSWL40/400BEF-E
Union Stahlmann 50x50 EF	SSWL50/500BEF-E
Tee fitting Stahlmann (F) 15x1/2x15 EF	STFL1501/215BEF-E
Tee fitting Stahlmann (F) 20x3/4x20 EF	STFL2003/420BEF-E
Tee fitting Stahlmann (F) 25x1x25 EF	STFL25000125BEF-E
Tee fitting Stahlmann (F) 32x1 1/4x32 EF	STFL3211/432BEF-E
Tee fitting Stahlmann (M) 15x1/2x15 EF	STML1501/215BEF-E
Equal Tee fitting Stahlmann 15x15x15 EF	STWL15/15/150BEF-E
Equal Tee fitting Stahlmann 20x20x20 EF	STWL20/20/200BEF-E
Equal Tee fitting Stahlmann 25x25x25 EF	STWL25/25/250BEF-E
Elbow fitting Stahlmann 15x1/2 (F)	SEFL1501/2BEF-E
Elbow fitting Stahlmann 20x3/4 (F)	SEFL2003/4BEF-E

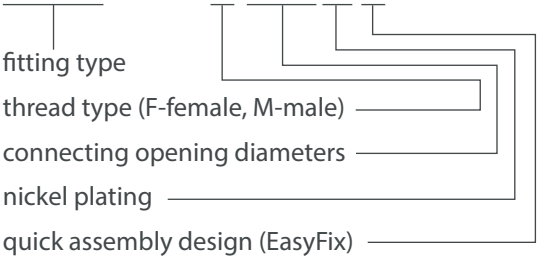
Fittings for corrugated tubes and accessories	Order code
Elbow fitting Stahlmann 25x1 (F)	SEFL250001BEF-E
Elbow fitting Stahlmann (M) 15x1/2 EF	SEML1501/2BEF-E
Elbow fitting (Wall Plate) Stahlmann (F) 15 x 1/2 EF	SEFL1501/2FBEF-E
Elbow fitting (Wall Plate) Stahlmann (F) 20x3/4 EF	SEFL2003/4FBEF-E
Fitting Stahlmann (F) gas 15x1/2	SSFG1501/2BGZ-E
Fitting Stahlmann (F) gas 20x3/4	SSFG2003/4BGZ-E
Fitting Stahlmann (F) gas 25x1	SSFG250001BGZ-E
Fitting Stahlmann (M) gas 15x1/2	SSMG1501/2BGZ-E
Fitting Stahlmann (M) gas 20x3/4	SSMG2003/4BGZ-E
Fitting Stahlmann (M) gas 25x1	SSMG250001BGZ-E
Locking brass ring Stahlmann, DN15	SA065015-E
Locking brass ring Stahlmann, DN20	SA065020-E
Locking brass ring Stahlmann, DN25	SA065025-E
Locking brass ring Stahlmann, DN32	SA065032-E
Silicone gasket Stahlmann, DN15	SA010015-E
Silicone gasket Stahlmann, DN20	SA010020-E
Silicone gasket Stahlmann, DN25	SA010025-E
Silicone gasket Stahlmann, DN32	SA010032-E
High temperature gasket Stahlmann, DN15	SA001015-E
High temperature gasket Stahlmann, DN20	SA001020-E
High temperature gasket Stahlmann, DN25	SA001025-E
High temperature gasket Stahlmann, DN32	SA001032-E
Union nut Stahlmann 1/2	SA0301/2-E
Union nut Stahlmann 3/4	SA0303/4-E
Silicone gasket for union nuts Stahlmann 1/2	SA0201/2-E
Silicone gasket for union nuts Stahlmann 3/4	SA0203/4-E
Ball valve Stahlmann (M) 15x1/2 NP EF	SVLM1501/2NEF-E
Ball valve Stahlmann (F) 15x1/2 NP EF	SVLF1501/2NEF-E
Fitting Stahlmann (F) 15x1/2 groove EF	SSFL1501/2GEF-E

Fasteners for automatic fire suppression systems	Order code
Tube bracket Stahlmann Bracket L	SA040000G-E
Rail bracket Stahlmann Bracket S	SA050000G-E
Tube rail SQR	SA070000-E
Clamp for 15x½" Stahlmann fitting	SA0800151/2G-E

Tools	Order code
Telescopic tube cutter	SI001-E
Flaring tool Stahlmann	SI010-E

Ordering information

Fitting Stahlmann (F) 15x1/2 NP EF



Stahlmann WHS is a complete water underfloor heating kit based on the Stahlmann corrugated tube 304 stainless steel

Stahlmann WHS complete kits for water underfloor heating are specially designed for installation in rooms up to 10 square meters in cottages, townhouses, hotels.

Bathroom

WC

Kitchen

Entrance hall

Advantages

Complete kits

All components are matched to work together perfectly.

No pumps and mixing units required

The ideal solution for water underfloor heating in areas up to 10 square meters.

Lifetime Warranty

From the manufacturer of corrugated stainless steel tubes.

Maximum electricity savings

Does not consume electricity during operation.

Easy heating control

Easy to maintain.

High efficiency

Heat transfer compared to plastic tubes is 20% higher.

Easy installationм

The tube is easy to cut and bend without special tools, no welding required for joints.

Remarkable flexibility

Permissible bending radius of 30 mm enables installation of complex pipelines, inaccessible for other tube types.

Maximum strength and reliability

When bending, the passage section is not disturbed, no microcracks are formed and no mechanical stress takes place on the metal.

Zero oxygen permeability

Maximum long life of both the underfloor heating and the entire heating system of the house as a whole.

Frost-resistant

The ideal solution for homes in colder areas.

The inner surface of the tube has no tendency to accumulate deposits

Due to the use of polished stainless steel strip.

Low coefficient of linear expansion

Stahlmann tube is 20 times more resistant to deformation than a plastic tube during heating and cooling processes, therefore it lasts longer

Eco-friendly

Stahlamnn tube does not give off harmful substances into the environment

Stahlmann WHS kit

The kit includes:

- Thermostatic valve Stahlmann MTR021 — 1 pc
- Eurocone fitting Stahlmann (F) 15x3/4 EF — 2 pcs
- Corrugated tube Stahlmann DN15, annealed:
  - for Stahlmann WHS4 — 20 m
  - for Stahlmann WHS6 — 30 m
  - for Stahlmann WHS10 — 50 m

All elements are matched to each other and ready to install to ensure maximum reliability and comfort in the room.

Corrugated tube made of stainless steel serves as a heating element of water underfloor heating. Designed for distribution of the thermal liquid and effective transfer of its heat over the entire surface of the floor of the heated room. Easy to install, does not require welding.

Stahlmann WHS kits are connected to the main heating circuit of the home without the use of a distribution manifold and pump-mix unit. The heat transfer medium is hot water, distilled water or glycol mixtures.

Specifications

KIT	Stahlmann WHS4	Stahlmann WHS6	Stahlmann WHS10
Heating area	up to 4m²	from 4 to 6 m²	from 6 to 10m²
Length of corrugated tube, m	20	30	50
Maximum temperature of the working fluid, °C	70		
Ambient temperature during system operation, °C	from +5 to +50		
Heating medium temperature control range, °C	from +10 to +40		
Maximum working pressure, MPa	1		
Diameter of threaded connections of the thermostatic valve	¾", Eurocone		
Corrugated tube material	304 Stainless steel		
Fitting material	Brass CW617N		
Service life of corrugated tube, minimum	30 years		
Service life of fittings, minimum	30 years		
Service life of thermostatic valve, minimum	15 years		

Stahlmann PT painted corrugated tube

Elegance. Simplicity. Reliability. Versatility.

Stahlmann PT painted corrugated tubes are a unique product line of the SST Group. The product is based on time-proven Stahlmann 304 high-alloy stainless steel flexible corrugated tube.

Stahlmann PT painted corrugated tube options:

The basic range is available in three colors: white gold (ivory), brown and black. All colored coatings of Stahlmann corrugated pipes are resistant to wear and tear and temperature fluctuations from -60 °C to +110 °C.

- White gold

- Brown

- Black

Applications:

Stahlmann PT painted corrugated stainless steel tubes 304 are intended for use in hot and cold domestic and drinking water supply systems, heating, as cable conduits for laying electrical cables indoors and outdoors, where increased protection against mechanical stress and moisture is required (when installing security systems, video surveillance, power supply, lighting), as well as for technological pipelines transporting fluids, non-aggressive to the materials of the pipe. Suitable for concealed and open wiring.

Video surveillance

Power and lighting
indoors and outdoors

Water supply and heating

Security systems

Perfect for wiring

When used as conduits, Stahlmann PT flexible corrugated tube provides high corrosion resistance as well:

Reliable protection from direct sunlight, rain, snow and high humidity

High mechanical resistance

Increased fire and electrical safety

Protection of electrical wiring from unauthorized influence of third parties

Resistant to high temperatures and open flame

Complete sealing

For use in water supply and heating systems

100% safe for humans and the environment; suitable for drinking water supply

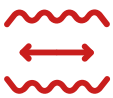
100% reliability. High thermal, frost and UV resistance; resistance to water hammer

High flexibility: good shape retention, resistant to repeated bending

Long service life; complete tube sealing; no rust inside or outside

Ideal for complex pipelines: any tube bending angle with no micro cracks

The tube has a low coefficient of linear thermal expansion: when heated up to +50°C, this parameter is 20 times lower than that of plastic tubes



The inner surface of the tube has no tendency to accumulate deposits as it is made of polished stainless steel tape, and also due to the turbulent flow of fluid

The tube provides zero oxygen permeability and leak-proof performance

Applications:

Stahlmann PT painted corrugated tubes offer a new approach to the design of engineering systems and bring harmony and individuality to any project due to a wide range of customization possibilities in accordance with the customer's preferences.

Unique interior and exterior designs in:

- Cottages
- Stylish apartments
- Wooden houses
- Cafes and restaurants
- Hotels
- Offices

Product range:

Coil length, m	Tube size (nominal diameter)					
	DN15	DN20	DN25	DN32	DN40	DN50
5 m	+	+	+	+	+	+
10 m	+	+	+	+	+	+
20 m	+	+	+	+	+	+
30 m	+	+	+			

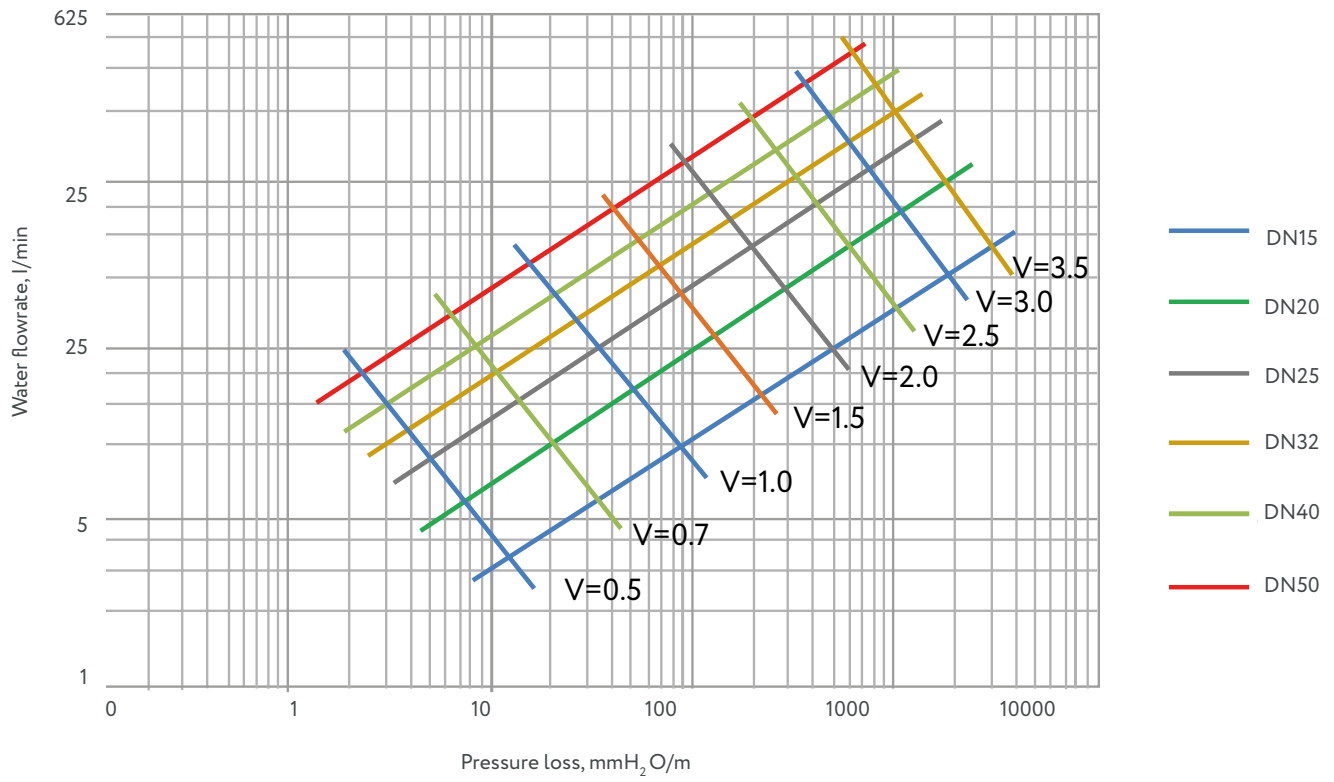
Specifications:

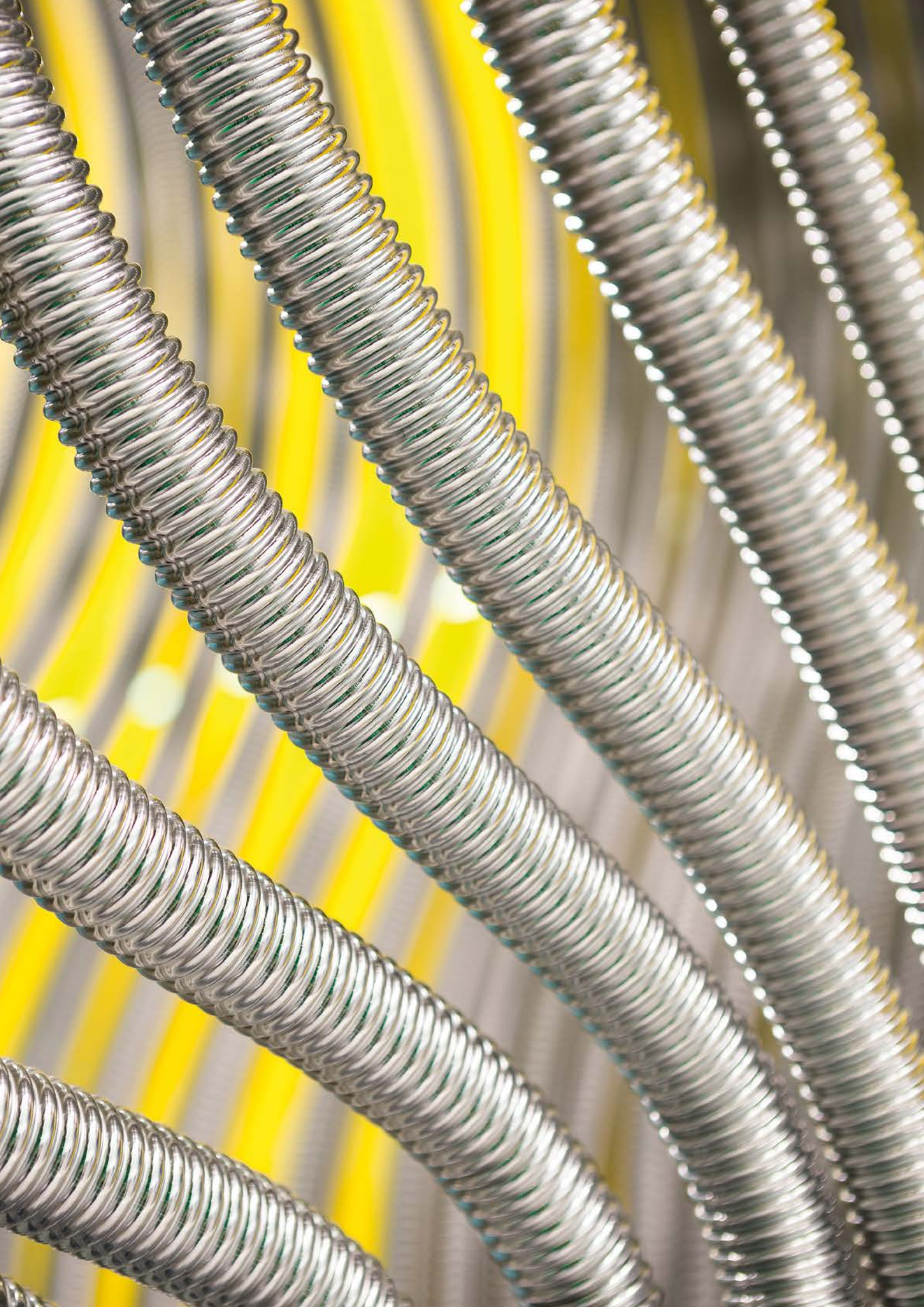
Parameter	Tube size (nominal diameter)					
	DN15	DN20	DN25	DN32	40A	50A
Inner diameter, mm	14.1	21.0	27.0	32.0	42.0	53.5
Wall thickness, mm	0,3					
Corrugation crests, min. per 100 mm	20	19	18	18	14	13
Outer diameter, mm	18.1	25.6	32.0	37.6	48.1	59.9
Operating temperature at 1.5 MPa, °C	90					
Minimum temperature without pressure, °C	-60					
Maximum short-term temperature, °C	110					
Maximum permissible operating pressure, MPa	1.5				1.0	
Paint coating thickness, µm	100					
Minimum bending radius, mm	40	50	60	80	120	150
Coefficient of linear thermal expansion 10-6.1/°C	17					
Thermal conductivity coefficient, W/m°K	17					
Service life, minimum	30 years					

Hydraulic Loss Table for Stahlmann Stainless Steel Corrugated Tubes

Nominal diameter										
DN15	Flow, m³/h	0.3	0.8	1.4	2	2.5	3	3.5	4	4.6
	Drop, bar/m	0.002	0.017	0.0441	0.0834	0.1471	0.1863	0.2648	0.3138	0.3923
DN20	Flow, m³/h	0.4	1.2	2.3	3.4	4.5	5.5	6.5	7.7	8.8
	Drop, bar/m	0.0007	0.0064	0.0196	0.0343	0.0637	0.0932	0.1471	0.1863	0.2354
DN25	Flow, m³/h	0.5	2.2	3.8	5.4	7.1	8.7	10.4	11.7	13.6
	Drop, bar/m	0.0004	0.0059	0.0177	0.0324	0.0461	0.0765	0.1177	0.1471	0.1667
DN32	Flow, m³/h	0.8	2.7	4.6	6.5	8.5	10.4	12.3	14.2	16.4
	Drop, bar/m	0.0004	0.0042	0.0137	0.0206	0.0343	0.0539	0.0686	0.0883	0.1275
DN40	Flow, m³/h	1.7	5.5	9.6	13.9	18	21.9	26	29.8	34.3
	Drop, bar/m	0.0004	0.0034	0.0098	0.0191	0.0308	0.0443	0.0607	0.0782	0.1016
DN50	Flow, m³/h	2.8	8.9	15.7	22.6	29.2	35.5	42.1	48.3	55.6
	Drop, bar/m	0.0003	0.0028	0.0074	0.0144	0.0282	0.0334	0.0457	0.0589	0.0765

Hazen-Williams Equation for Stahlmann Corrugated Tubes





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