



intermetalflex
A **KLINGER** Company

CERTIFICATES

Our certificates include:
ISO 9001 – 2008 by TÜV-Süd
CE Certificate by Bureau Veritas.



BUREAU
VERITAS



5.000

m² manufacturing space



45

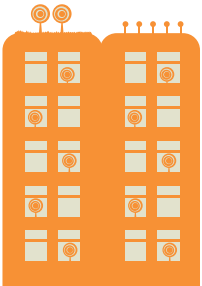
over employees



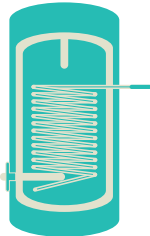
1.000.000

meters of flexible metal hoses

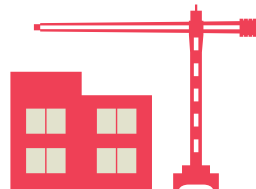
APPLICATIONS



high-rise apartments



boilers



infrastructure



chemical industries



industrial applications



INTERMETALFLEX A.Ş. was established as a German-Turkish joint venture company in 2003, producing Flexible Metal Hoses in İstanbul, Turkey. In late 2016, INTERMETALFLEX A.Ş. became a part of KLINGER Group of Companies.

100% of all manufactured parts are exported to well-known companies in Germany, Austria, Italy, U.K., Sweden, U.S.A., Australia...

Our product range includes boiler hoses, heat exchanger hoses, solar hoses, district heating hoses, and flexible braided and unbraided metal hoses for various applications.

We also produce complete heat exchanger coils with frame, and pre-insulated hoses with high temperature composite insulation.

Size range is DN 06 to DN 150.

Our Metal Hose Production Lines and their special machinery were designed, manufactured, and operated by our own engineering group.

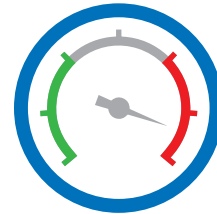
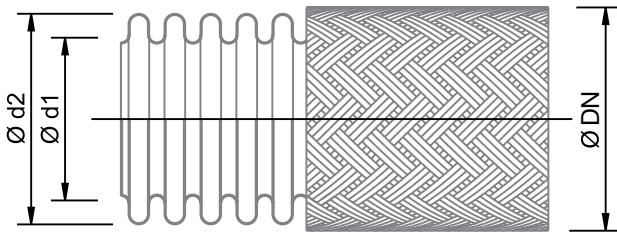


INDUSTRIAL APPLICATION HOSES

MH 201 OG - MH 201 MG



MH 201 OG without braiding
 MH 201 MG with braiding
 Standard Pitch
 Hose Material : AISI316L (1.4404)
 Braid Material : AISI304 (1.4301)
 Sizes: DN 6 – DN 50



DN		Type	d1	d2	Tolerance	Bend Radius		Working P. at 20°C	Weight	Length
mm	inch					Once-only	Frequent			
6	1/4"	MH 201 OG	6,3	9,6	± 0,2	15	80	24	0,074	10-100
		MH 201 MG		10,8		198		0,149		
8	5/16"	MH 201 OG	8,2	12,2	± 0,2	16	125	17	0,087	10-100
		MH 201 MG		13,7		176		0,197		
10	3/8"	MH 201 OG	10,3	14,2	± 0,2	18	128	12	0,103	10-100
		MH 201 MG		15,7		131		0,218		
12	1/2"	MH 201 OG	12,1	16,7	± 0,2	20	138	9	0,117	10-100
		MH 201 MG		18,1		92		0,244		
16	5/8"	MH 201 OG	16,2	21,6	± 0,2	28	160	7	0,177	10-100
		MH 201 MG		23,2		84		0,382		
20	3/4"	MH 201 OG	20,3	26,8	± 0,2	32	168	6	0,253	10-100
		MH 201 MG		28,4		55		0,483		
25	1"	MH 201 OG	25,3	32,3	± 0,3	40	190	3	0,337	10-100
		MH 201 MG		34,4		85		0,747		
32	1 1/4"	MH 201 OG	34,3	41,1	± 0,3	50	255	2,5	0,426	10-100
		MH 201 MG		43,2		105		0,891		
40	1 1/2"	MH 201 OG	40,2	49,8	± 0,3	60	295	2,5	0,706	10-100
		MH 201 MG		52,2		130		1,395		
50	2"	MH 201 OG	50,3	60,4	± 0,4	70	320	1,6	0,895	10-100
		MH 201 MG		62,7		160		1,652		



LARGE DIAMETER HOSES

MH 301 OG - MH 301 MG

MH 301 OG without braiding

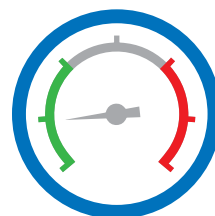
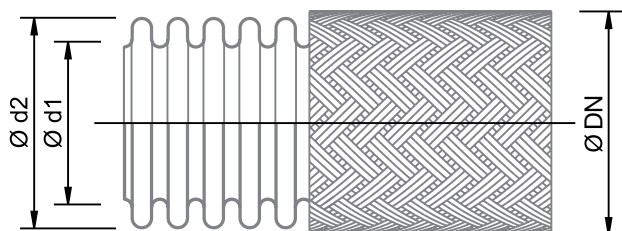
MH 301 MG with braiding

Standard pitch

Hose Material : AISI316L (1.4404)

Braid Material : AISI304 (1.4301)

Sizes: DN 65 – DN 150

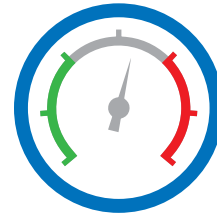
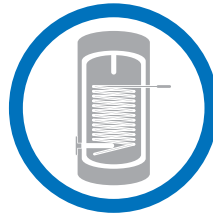
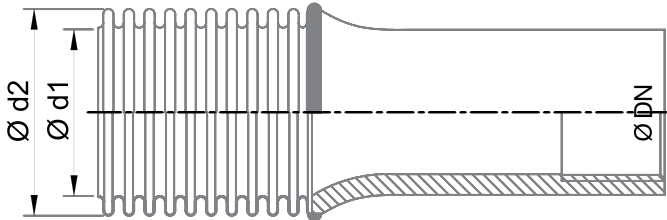


DN		Type	d1	d2	Tolerance	Bend Radius		Wall Thickness	Working Pressure at 20°C	Weight
mm	inch					Once-only Bending	Frequent Bending			
65	2 1/2"	MH 301 OG	65,8	77,9	± 1,0	110	450	0,30	1,2	1,12
		MH 301 MG		81,1		205			25	
80	3"	MH 301 OG	80,5	95	± 1,0	120	520	0,30	1	1,5
		MH 301 MG		98,2		235			16	
100	4"	MH 301 OG	100,2	116,3	± 1,0	165	770	0,40	1,4	2,25
		MH 301 MG		119,5		295			12	
125	5"	MH 301 OG	125,8	144,8	± 1,2	550	1050	0,40	0,8	2,6
		MH 301 MG		148		650			8	
150	6"	MH 301 OG	150	170	± 1,5	725	1325	0,40	0,6	3,2
		MH 301 MG		173,5		860			6	

BOILER HOSES | MH 211K



Wide pitch
 Available with or without end fittings
 Fittings can be produced according to customer specifications.
 Major area of application: **Boilers and Heat Exchanger Coils**
 Hose Material: **AISI316L (1.4404)**
 Sizes: **DN 20 – DN 40**



DN		Type	d1	d2	Tolerance	Working Pressure at 20° C	Surface Area	Weight	Length
mm	inch		mm	mm	mm	bar	m ² /m	kg/m	m
20	3/4"	MH 211 K	20,4	26,7	± 0,3	16	0,130	0,305	10-100
25	1"	MH 211 K	25,4	31,9	± 0,4	12	0,191	0,382	10-100
32	1 1/4"	MH 211 K	34,5	41,1	± 0,4	10	0,221	0,553	10-100
40	1 1/2"	MH 211 K	40,5	49,6	± 0,4	10	0,255	0,800	10-100



HT COMPOSITE PRE-INSULATED HOSES | MH 211



Wide pitch

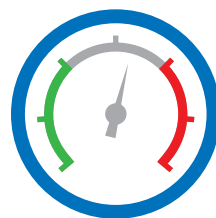
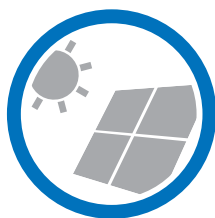
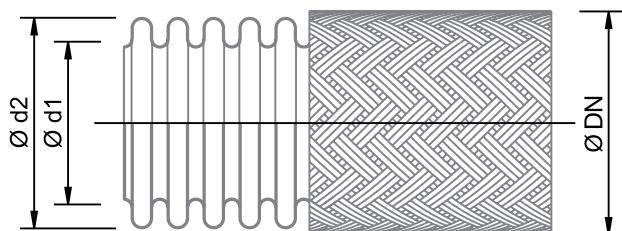
Application: **Solar industry, solar collector to the boiler**

Hose Material : **AISI316L (1.4404)**

Insulation: **Resistant to 150°C continuous temperature 175°C temporary temperature.**

Multilayer insulation consists of:

- High temperature resistant inside layer.
- Middle layer of standart crosslinked PE insulation.
- Weather and UV resistant protective outer layer.



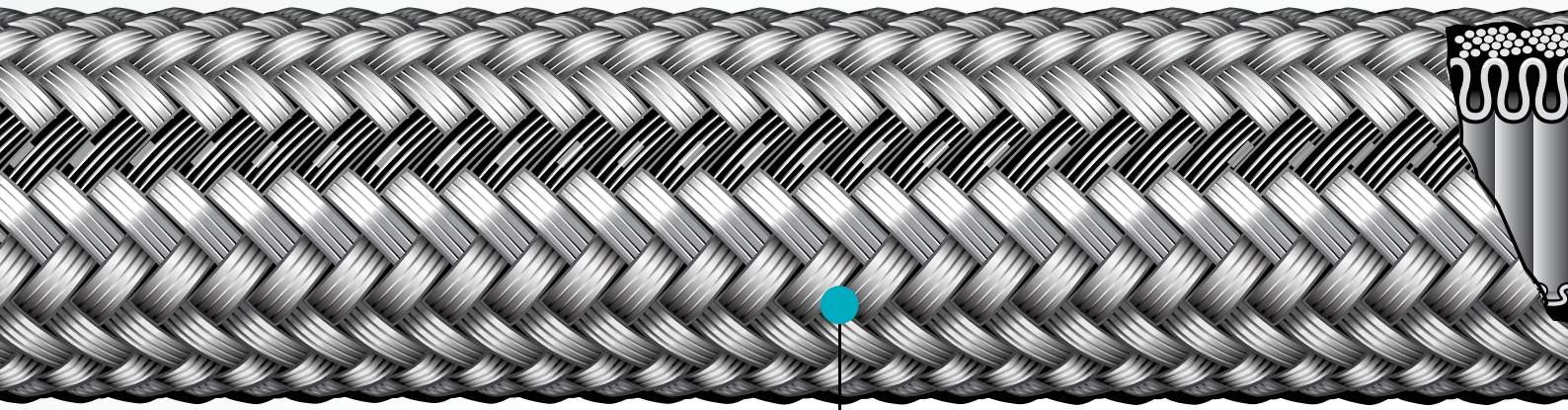
HEAT EXCHANGER COILS MH 211K

Complete Heat Exchanger Coil with frame

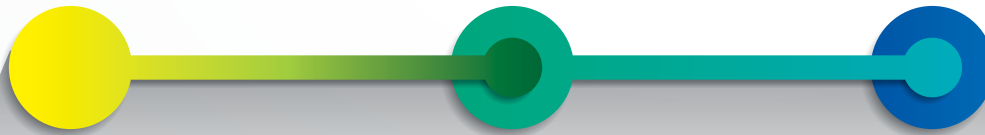
Tailor made according to customer specifications

Fittings can be produced according to customer specifications

Hose Material: **AISI316L (1.4404)**



Braid



FLEXIBLE METAL HOSES INSTALLATION INSTRUCTIONS AND USAGE AREAS

Inspection

Establish an inspection schedule based on system application and replacement history.

Electrostatic Discharge

Static electricity can be generated by fluid passing through the hose. Select hose with sufficient conductivity to ground the static electric charge and allow static dissipation. If static electricity generation is possible within an application, choose static dissipative hose and properly ground to earth.

Vibration

Evaluate amount of system vibration when selecting hose. Metal hose may not be appropriate for systems with constant or severe vibration.

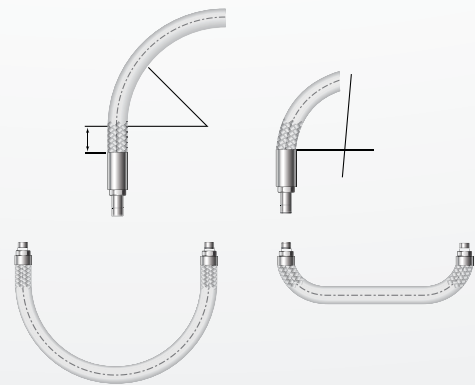
Length

Take into consideration hose movement, system pressurization, and thermal expansion when determining hose length. Installing hose that does not have sufficient length to accommodate these factors may reduce hose life.

Minimum Bend Radius

Follow minimum bend radius requirements for your hose. Installing hose with smaller bends may kink hose and reduce hose life.

Hose rupture or leakage may result from bending too close to the hose/fitting connection.



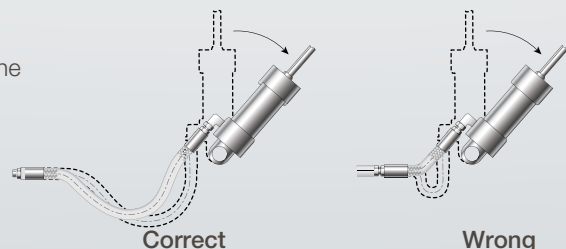
Hose Strain

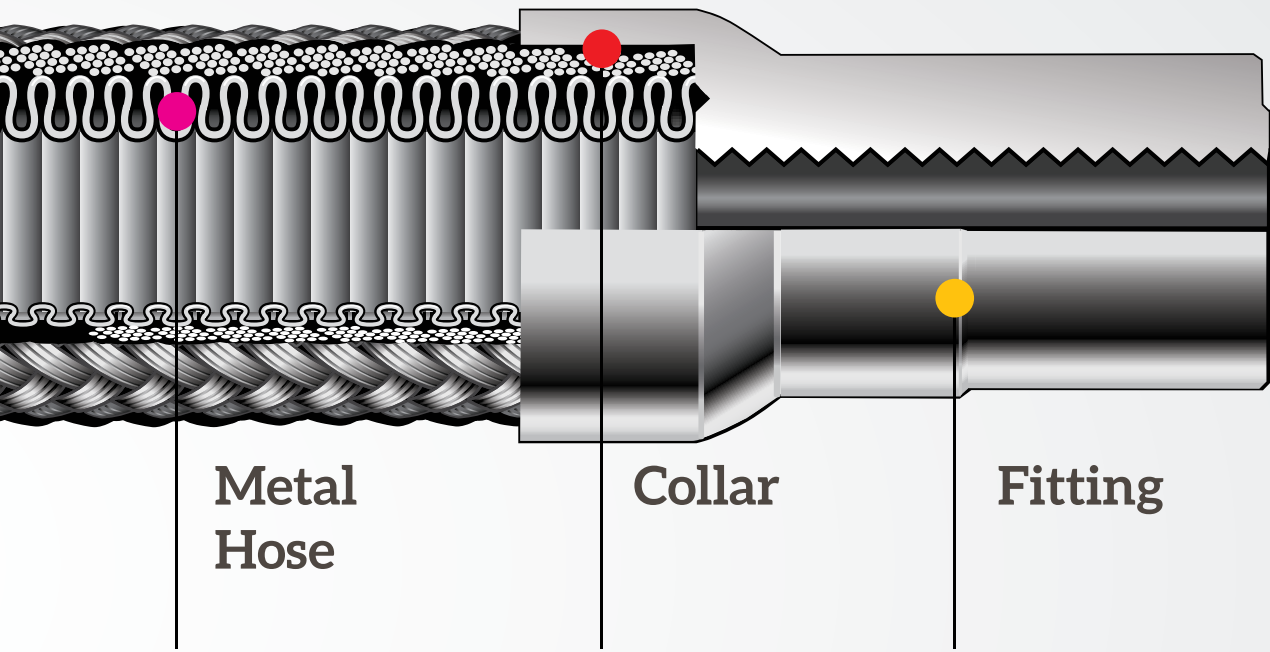
Elbows and adapters can be used to relieve hose strain.



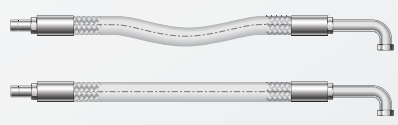
Motion Absorption

Distribute movement and prevent bends smaller than the hose's minimum bend radius by providing sufficient hose length.

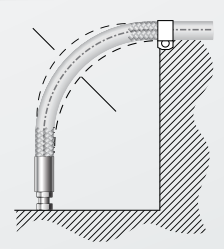




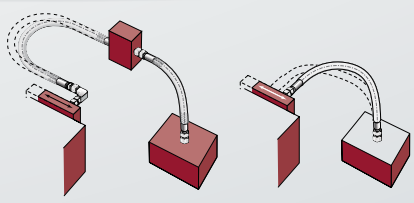
Machine Tolerance
 Allow for changes in length resulting from machine motion and tolerances.



System Pressure Changes
 Allow sufficient hose length to accommodate changing system pressures. Do not connect high- and low pressure hoses.



Bending in One Plane
 Avoid twisting the hose by bending it in one plane only. For a compound bend, use multiple hose pieces or other isolation methods.

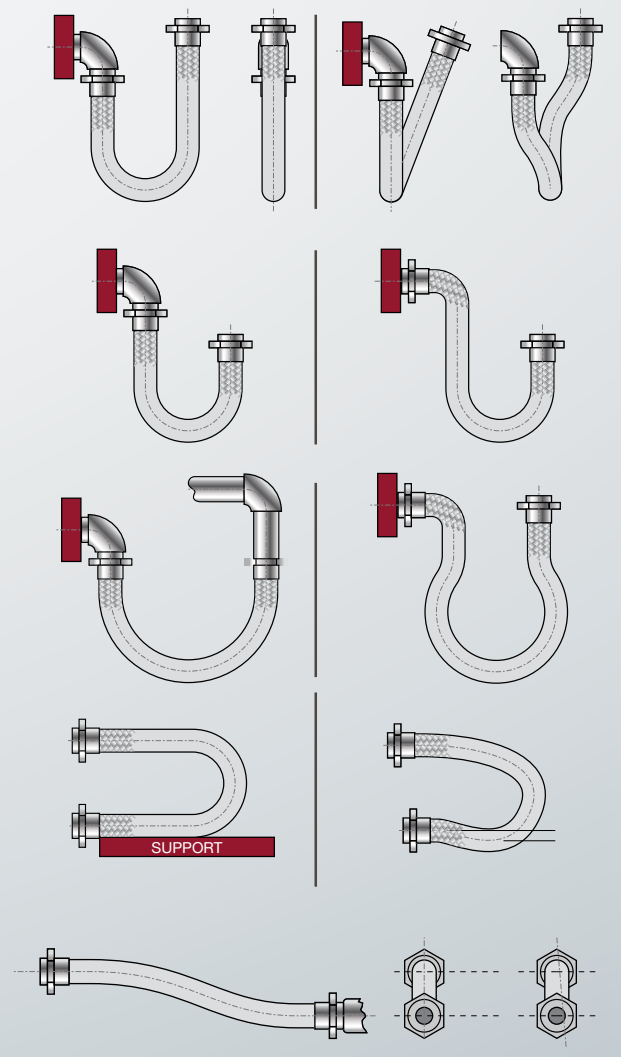


Correct

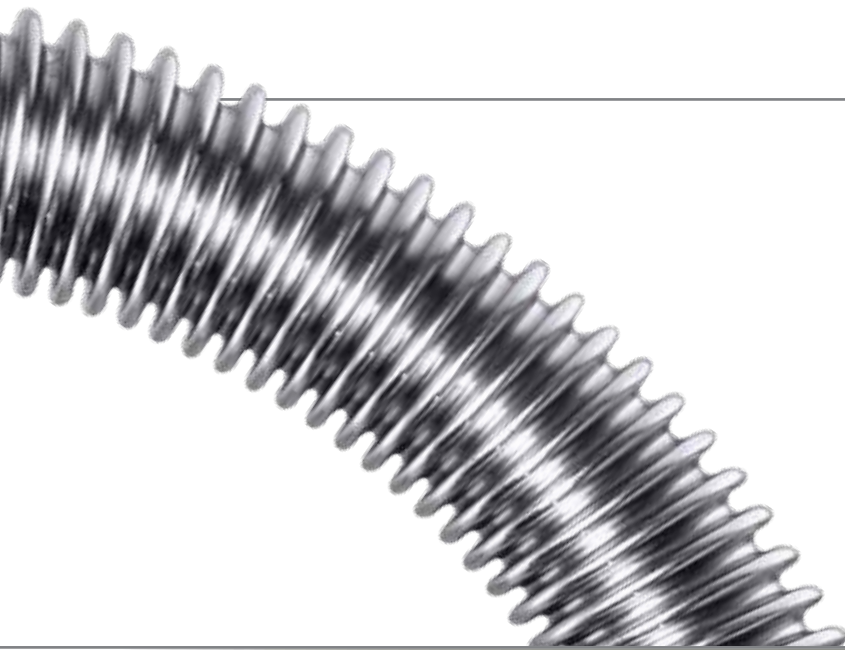
Wrong

Correct

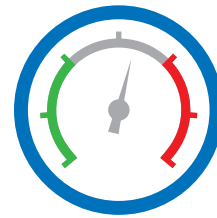
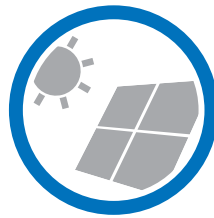
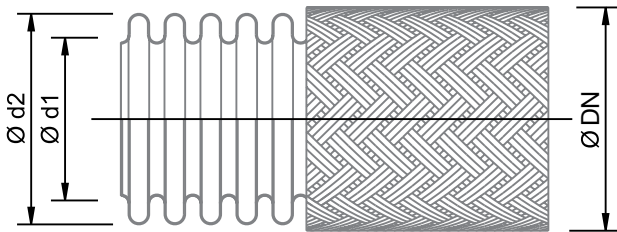
Wrong



SOLAR HOSES | MH 211



Wide pitch
Major area of application: **Solar industry,**
heating systems.
Hose Material : **AISI316L (1.4404)**
Sizes: **DN 12 – DN 50**

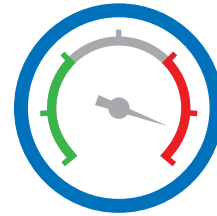
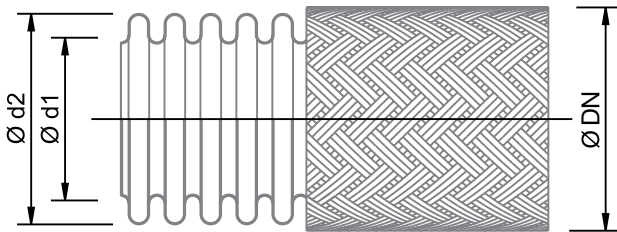


DN		Type	d1	d2	Tolerance	Bend Radius Once-only Bending	Working Pressure at 20° C	Surface Area	Weight	Length
mm	inch		mm	mm	mm		bar	m ² /m	kg/m	m
12	1/2"	MH 211	12,4	16,5	± 0,3	20	21	0,072	0,085	10-100
16	5/8"	MH 211	16,3	21,4	± 0,3	25	16	0,096	0,136	10-100
20	3/4"	MH 211	20,4	26,7	± 0,3	30	10	0,136	0,192	10-100
25	1"	MH 211	25,4	31,9	± 0,4	35	10	0,174	0,273	10-100
32	1 1/4"	MH 211	34,5	41,1	± 0,4	40	4	0,203	0,35	10-100
40	1 1/2"	MH 211	40,5	49,6	± 0,4	50	4	0,285	0,56	10-100
50	2"	MH 211	50,7	60,1	± 0,4	60	3	0,35	0,686	10-100

HIGH PRESSURE HOSES MH 221 OG - MH 221 MG



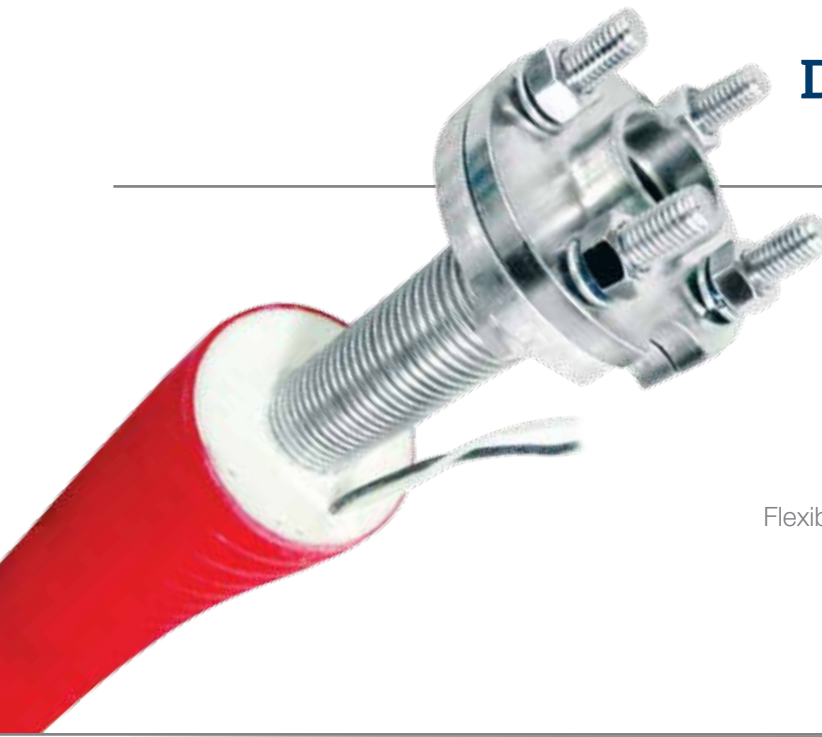
MH 221 OG without braiding
 MH 221 MG with braiding
 Hose Material : AISI316L (1.4404)
 Braid Material : AISI304 (1.4301)
 Sizes: DN 6 – DN 16



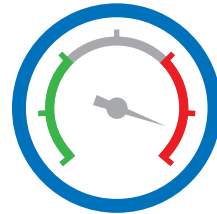
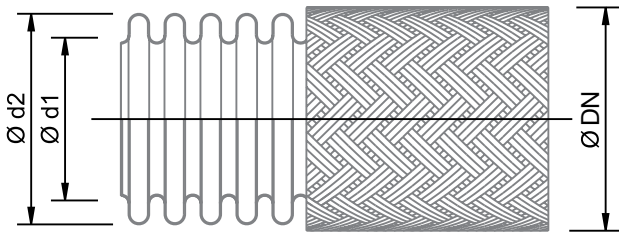
DN		Type	d1	d2	Tolerance	Bend Radius		Working Pressure at 20°C	Weight	Length
mm	inch					Once-only Bending	Frequent Bending			
mm	inch		mm	mm	mm	mm	bar	kg/m	m	
6	1/4"	MH 221 OG	6,1	10,2	± 0,3	15	140	43	0,152	10-100
		MH 221 MG		11,6		25		345		
8	5/16"	MH 221 OG	8,1	12,9	± 0,3	20	180	50	0,213	10-100
		MH 221 MG		14,5		32		265		
10	3/8"	MH 221 OG	10,1	16,1	± 0,3	25	220	33	0,295	10-100
		MH 221 MG		17,6		38		220		
12	1/2"	MH 221 OG	12,1	18,8	± 0,3	30	250	32	0,375	10-100
		MH 221 MG		20,4		45		186		
16	5/8"	MH 221 OG	16,1	24,5	± 0,3	40	300	22	0,585	10-100
		MH 221 MG		26,5		58		185		

DISTRICT HEATING HOSES

DH

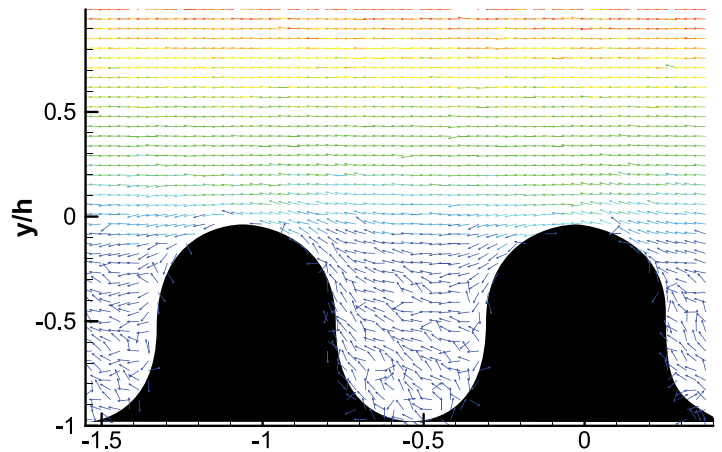
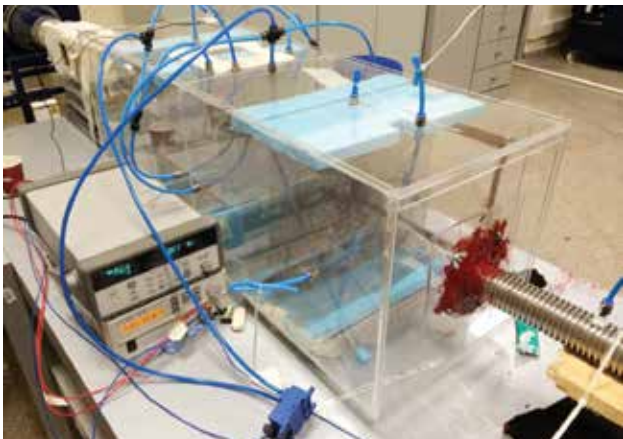
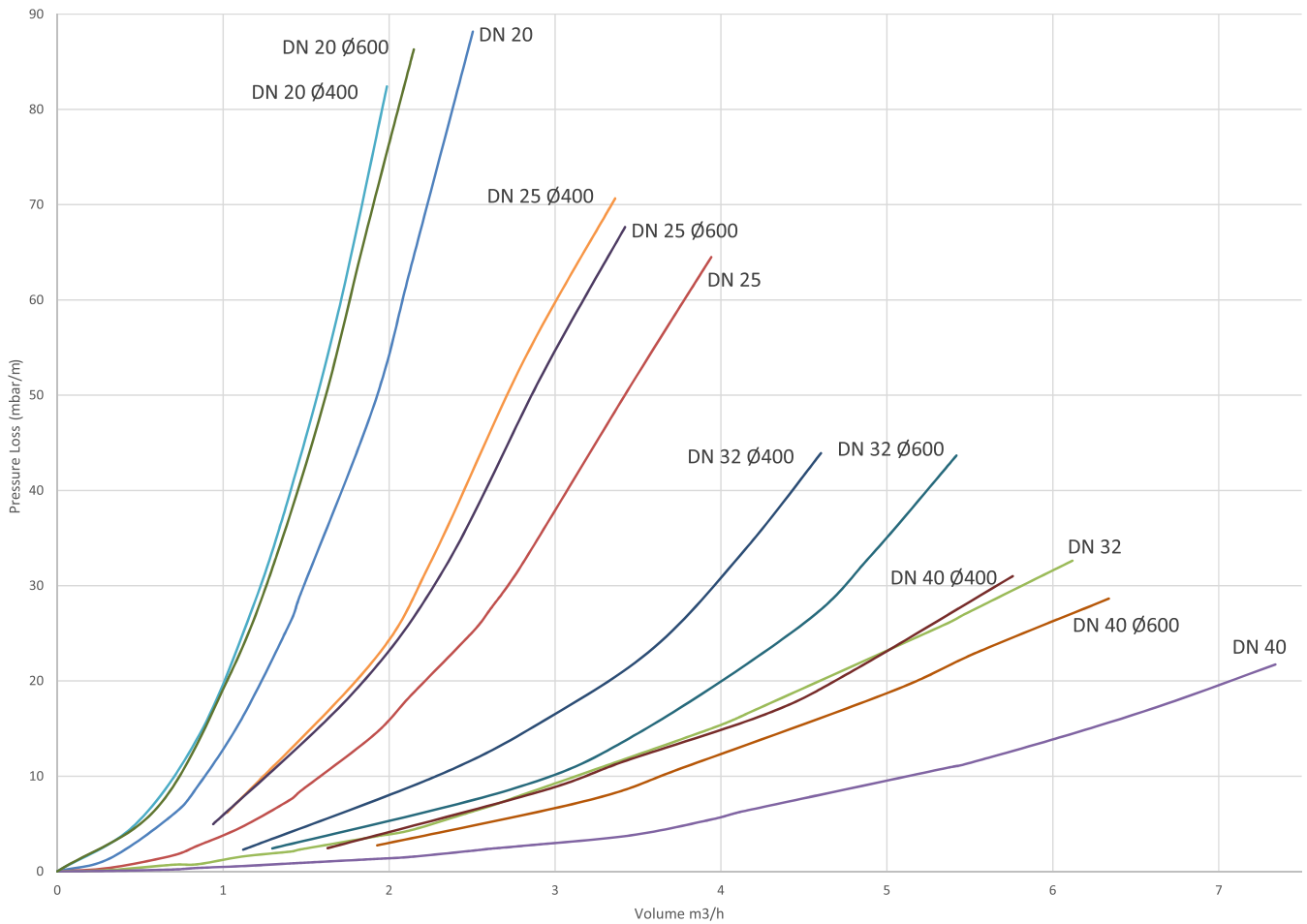


Flexible metal hose with insulation layer and outer plastic pipe.
 Major Area of Application: **District Heating Lines**
 Hose (Service Pipe) Material: **AISI304 (1.4301)**
 Insulation Material: **PUR**
 Outer Pipe: **PE**



DN	Type	d1	d2	Tolerance	Bend Radius Once-only Bending	Wall Thickness	Weight
mm		mm	mm	mm	bar	m ² /m	kg/m
30	DH30	29	34	± 1	200	0,3	0,4
40	DH40	39	44	± 1	200	0,4	0,7
50	DH50	48	55	± 1	250	0,5	1,3
60	DH60	60	66	± 2	300	0,5	1,5
76	DH76	76	85	± 2	400	0,6	2,4
90	DH90	88	98	± 2	450	0,7	3,5
100	DH100	98	109	± 2	600	0,8	4,5
110	DH110	109	119	± 2	650	0,8	4,7
125	DH125	127	139	± 2	800	0,8	5,8
150	DH150	144	156	± 2	950	0,9	7,7

PRESSURE LOSS GRAPH



BLUE LINE: Pressure loss of straight flexible metal hose Type MH211

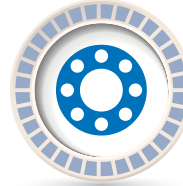
RED LINE: Pressure loss of Ø400 mm coiled flexible metal hose Type MH211

GREEN LINE: Pressure loss of Ø600 mm coiled flexible metal hose Type MH211



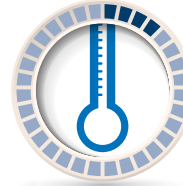
RUBBER EXPANSION JOINTS

flange material



galvanized carbon steel

temperature



110°C

pressure

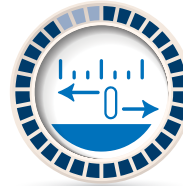


16 barg



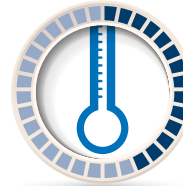
CENTRAL HEATING SYSTEM PIPE EXPANSION JOINTS

movement



50 mm

temperature



400°C

pressure

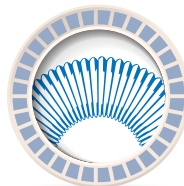


16 barg



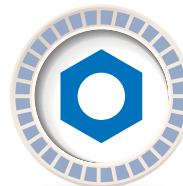
FAN-COIL FLEXIBLE CONNECTORS

hose material



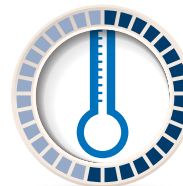
316 L

fitting material



carbon steel

temperature



450°C

pressure

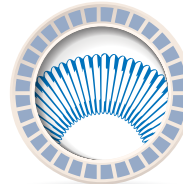


10 barg



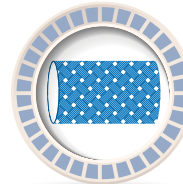
FLEXIBLE METAL HOSES

hose material



AISI316L

braid material



AISI304

fitting types



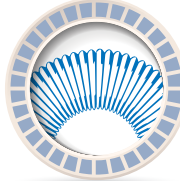
union, nipple, weld ended, flanged





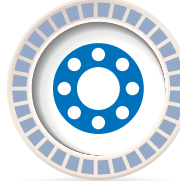
WELD END EXPANSION JOINTS

standard bellows
material



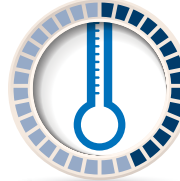
304ss

weld end material



carbon steel

temperature



400°C

pressure

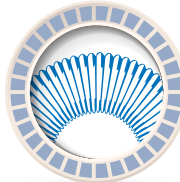


16_{barg}



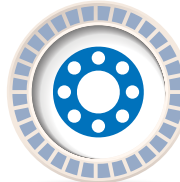
FLOATING FLANGED EXPANSION JOINTS

standard bellows
material



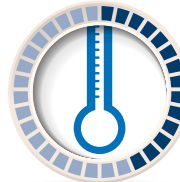
304ss

flange material



galvanized carbon
steel

temperature



400°C

pressure

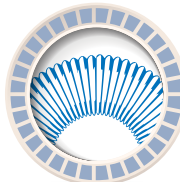


16_{barg}



EXTERNALLY PRESSURIZED EXPANSION JOINTS

standard bellows
material



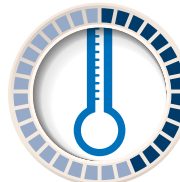
304ss

balance of materials



carbon steel

temperature



400°C

pressure

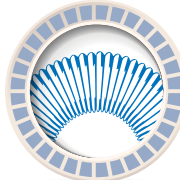


40_{barg}



SEISMIC EXPANSION JOINTS

standard bellows
material



304ss

balance of materials



carbon steel

temperature



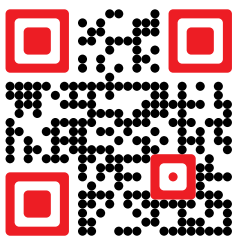
400°C

pressure



16_{barg}





intermetalflex
A **KLINGER** Company

FLEXIBLE METAL HOSES

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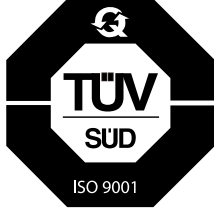
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CERTIFICATES



**BUREAU
VERITAS**



5.000



45



1.000.000

APPLICATIONS

