

Pipes for civil and industrial installations



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Threadable pipes for plumbing systems and other applications

EN 10255 norm

MATERIAL – CARBON STEEL								
STEEL GRADE	STEEL NUMBER	MECHANICAL PROPERTIES			CHEMICAL COMPOSITION % (CAST ANALYSIS)			
		ULTIMATE TENSILE STRENGTH R	YIELD STRENGTH ReH MIN N/mm ²	ELONGATION A MIN %	C	Mn	P	S
					MAX	MAX	MAX	MAX
S 195T	1.0026	320 ÷ 520	195	20	0,20	1,40	0,035	0,030

TOLERANCES				
SERIES	OUTSIDE DIAMETER	WALL THICKNESS	WEIGHT	LENGTH
LIGHT L1	See table of dimensions	+ not limited – 8%	+10% – 8% on each tube	+ 100 mm - 0 mm
MEDIUM - HEAVY	See table of dimensions	± 12,5%*		+ 100 mm - 0 mm

* The maximum tolerance is not applied if the bundle is within the weight tolerance

LIGHT SERIES L1 EN 10255 – UNI-ISO 7/1 THREADABLE, WITH UNI-ISO 50 COUPLING							
THREAD NOMINAL DIAMETER Inches	OUTSIDE DIAMETER		W.T. mm	NOMINAL WEIGHT– kg/m			
	MAX mm	MIN mm		PLAIN ENDS		THREADED WITH COUPLING	
				BLACK	GALVANIZED	BLACK	GALVANIZED
3/8	17,4	16,7	2,0	0,742	0,780	0,748	0,786
1/2	21,7	21,0	2,3	1,08	1,13	1,09	1,17
3/4	27,1	26,4	2,3	1,39	1,45	1,40	1,46
1	34,0	33,2	2,9	2,20	2,28	2,22	2,30
1 1/4	42,7	41,9	2,9	2,82	2,92	2,85	2,95
1 1/2	48,6	47,8	2,9	3,24	3,35	3,28	3,39
2	60,7	59,6	3,2	4,49	4,63	4,56	4,70
2 1/2	76,3	75,2	3,2	5,73	5,91	5,85	6,03
3	89,4	87,9	3,6	7,55	7,76	7,72	7,93
4	114,9	113,0	4,0	10,80	11,08	11,1	11,40

MEDIUM SERIES EN 10255 – UNI-ISO 7/1 THREADABLE, WITH UNI-ISO 50 COUPLING

THREAD NOMINAL DIAMETER Inches	OUTSIDE DIAMETER		W.T. mm	NOMINAL WEIGHT– kg/m			
	MAX	MIN		PLAIN ENDS		THREADED WITH COUPLING	
	mm	mm		BLACK	GALVANIZED	BLACK	GALVANIZED
3/8	17,5	16,7	2,3	0,839	0,876	0,845	0,882
1/2	21,8	21,0	2,6	1,21	1,26	1,22	1,27
3/4	27,3	26,5	2,6	1,56	1,62	1,57	1,63
1	34,2	33,3	3,2	2,41	2,49	2,43	2,51
1 1/4	42,9	42,0	3,2	3,10	3,20	3,13	3,23
1 1/2	48,8	47,9	3,2	3,56	3,67	3,60	3,71
2	60,8	59,7	3,6	5,03	5,17	5,10	5,24
2 1/2	76,6	75,3	3,6	6,42	6,60	6,54	6,72
3	89,5	88,0	4,0	8,36	8,57	8,53	8,74
4	115,0	113,1	4,5	12,2	12,48	12,5	12,80
5	140,8	138,5	5,0	16,6	16,94	17,1	17,30
6	166,5	163,9	5,0	19,8	20,20	20,4	20,80

HEAVY SERIES EN 10255 – UNI-ISO 7/1 THREADABLE, WITH UNI-ISO 50 COUPLING

THREAD NOMINAL DIAMETER Inches	OUTSIDE DIAMETER		W.T. mm	NOMINAL WEIGHT– kg/m			
	MAX	MIN		PLAIN ENDS		THREADED WITH COUPLING	
	mm	mm		BLACK	GALVANIZED	BLACK	GALVANIZED
3/8	17,5	16,7	2,9	1,02	1,06	1,03	1,07
1/2	21,8	21,0	3,2	1,44	1,49	1,45	1,50
3/4	27,3	26,5	3,2	1,87	1,93	1,88	1,94
1	34,2	33,3	4,0	2,93	3,00	2,95	3,02
1 1/4	42,9	42,0	4,0	3,79	3,89	3,82	3,92
1 1/2	48,8	47,9	4,0	4,37	4,48	4,41	4,52
2	60,8	59,7	4,5	6,19	6,33	6,26	6,40
2 1/2	76,6	75,3	4,5	7,93	8,11	8,05	8,23
3	89,5	88,0	5,0	10,3	10,51	10,5	10,90
4	115,0	113,1	5,4	14,5	14,27	14,8	15,10
5	140,8	138,5	5,4	17,9	18,24	18,4	18,70
6	166,5	163,9	5,4	21,3	21,70	21,9	22,30

Standard length

6 m.

End finishing

- with conical thread and coupling
- with conical thread, without coupling
- plain

Tests

Hydrostatic test at 50 bar or equivalent nondestructive electromagnetic test (Eddy Current)

- tensile test
- bending test

Certification

If not requested otherwise when placing the order, a 2.2 test certificate in compliance with norm EN 10204 will be issued.

Surfaces

- black (hot finished)
- hot-dipped galvanized EN 10240 A.1
- with external epoxy coating – Thermo
- with external polyethylene coating – Polycoat

Marking

Black (hot finished) pipes
Continuous marking in indelible black ink with the words:

- TenarisDalmine EN 10255 SL1
- TenarisDalmine EN 10255 SM

SL1 light seamless tube series
SM medium seamless tube series

Galvanized pipes

Galvanizing is by hot-dipping in a completely automated plant in compliance with the UNI EN 10240 norm, which stipulates various levels of quality depending on the pipe application.

Galvanizing carried out by Tenaris conforms to level A.1, qualitatively the highest required by the European standards.

The zinc used is an electrolytic type, with 99.995% purity. Galvanized TenarisDalmine pipes employing the new 'lead-free galvanizing' technology conform to the EN 10240-A1.

Marking

Marking in black paint every 40 cm with the following:

TenarisDalmine senza piombo
lead free

EN 10255 SL1 EN 10240 A.1

TenarisDalmine senza piombo
lead free

EN 10255 SM EN 10240 A.1

SL1 light seamless tube series

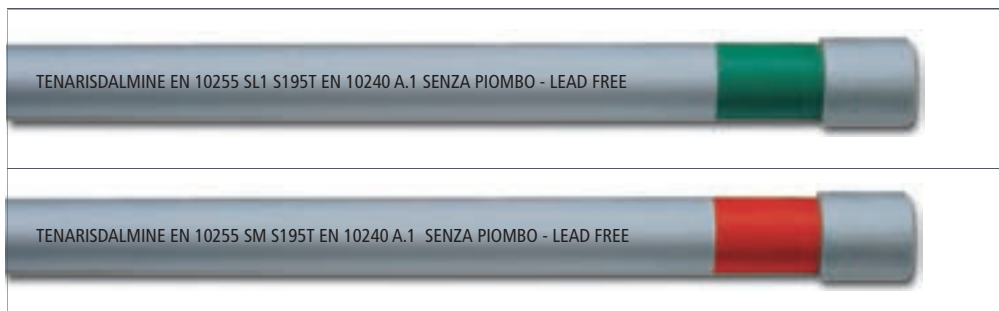
SM medium seamless tube series



DVGW-Registrierungsbescheid
für Erzeugnisse der Wasserversorgung

Zertifizierungsstelle
Certification body

Überwachte Produkte
NW-7101AK2001
NW-7103AN2006



Galvanizing can also be done in accord with the American ASTM A53 standard

Tenaris Thermo® Pipes

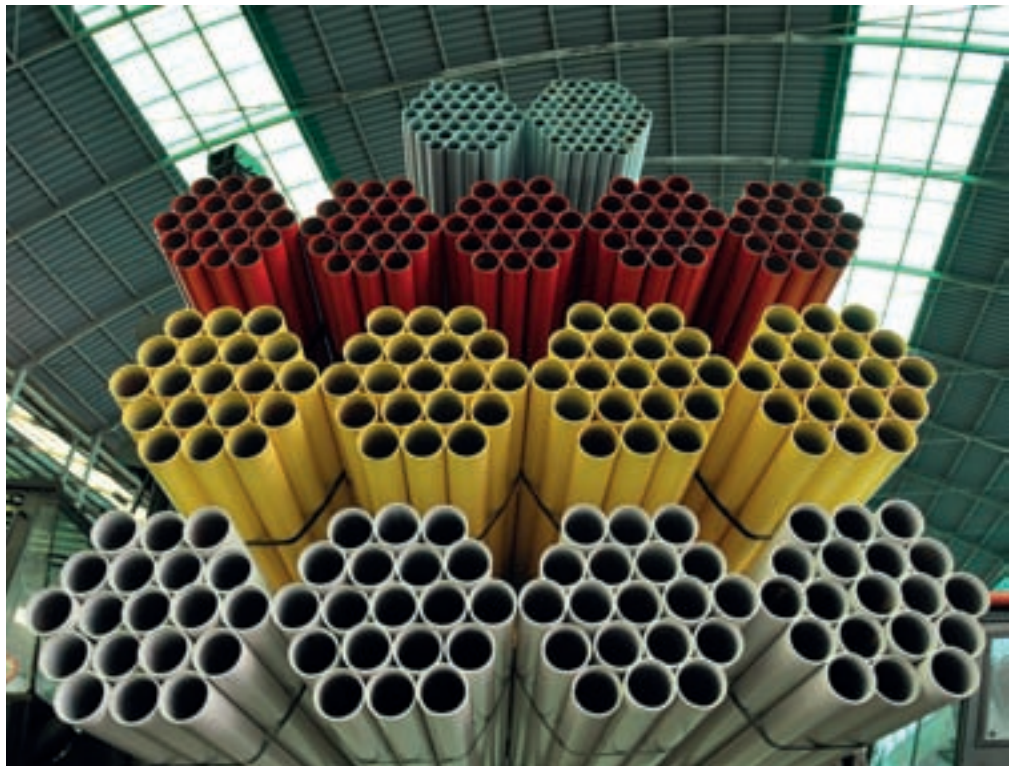
In civil and industrial installations, the color of the pipe must identify the fluid being carried.

Tenaris has created Tenaris Thermo®: pipes in steel, hot-coated with epoxy powder, meaning no painting on site by the installer is necessary and pipe use is identified more easily and safely.

The coating is applied by fusing epoxy powder to the surface of the shotblasted pipe, preheated to about 200°C.

The coating, with a minimum thickness of 50 microns, gives a working temperature of between -10 and +110°C, has excellent adhesion properties and resistance to abrasion, and

allows bending with a standard portable tool with a mandrel having a minimum bending radius of 6 times the external diameter of the pipe.



Tenaris Thermo® red (Ral 3000)
For civil and industrial installations and fireproof systems.

Tenaris Thermo® yellow (Ral 1018) (Ral 1021)
For natural gas distribution.

Tenaris Thermo® green (Ral 6027)
For civil and industrial installations.

Tenaris Thermo® white (Ral 9003)
For civil and industrial installations and transport of comburents.

Tenaris Thermo®

Red – White

Tenaris Thermo EN® 10255

S 195T seamless carbon steel pipes for fireproof systems and civil and industrial installations, hot-coated in epoxy powder, available in a dimensional range of from ½” to 6”.

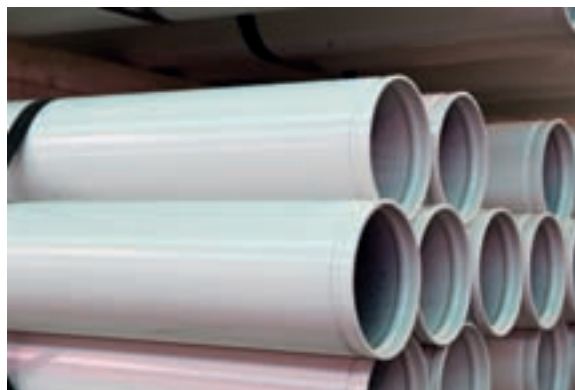
MECHANICAL AND CHEMICAL CHARACTERISTICS

TYPE OF STEEL	MECHANICAL PROPERTIES			CHEMICAL COMPOSITION % (CAST ANALYSIS)				
	ULTIMATE TENSILE STRENGTH R	YIELD STRENGTH ReH	ELONGATION A	C	Mn	Si	P	S
	N/mm ²	Min N/mm ²	Min %	Max	Max	Max	Max	Max
S 195T	320 ÷ 520	195	20	0,20	1,40	-	0,035	0,030

DIMENSIONS – LIGHT SERIES L1 EN10255

ND Inches	OUTSIDE DIAMETER		W.T. mm	NOMINAL WEIGHT kg/m	EXECUTION
	MAX mm	MIN mm			
1/2	21,7	21,0	2,3	1,08	SL1 - WL1
3/4	27,1	26,4	2,3	1,40	SL1 - WL1
1	34,0	33,2	2,9	2,21	SL1 - WL1
1 1/4	42,7	41,9	2,9	2,83	SL1 - WL1
1 1/2	48,6	47,8	2,9	3,26	SL1 - WL1
2	60,7	59,6	3,2	4,52	SL1 - WL1
2 1/2	76,3	75,2	3,2	5,77	SL1 - WL1
3	89,4	87,9	3,6	7,59	SL1 - WL1
4	114,9	113,0	4,0	10,9	SL1 - WL1

Length 6m – plain ends cut perpendicularly to the tube axis





DIMENSIONS – MEDIUM SERIES EN 10255

ND Inches	OUTSIDE DIAMETER		W.T. mm	NOMINAL WEIGHT kg/m	EXECUTION
	MAX mm	MIN mm			
1/2	21,8	21,0	2,6	1,21	MS
3/4	27,1	26,5	2,6	1,56	MS
1	34,2	33,3	3,2	2,41	MS
1 1/4	42,9	42,0	3,2	3,10	MS
1 1/2	48,8	47,9	3,2	3,56	MS
2	60,8	59,7	3,6	5,03	MS
2 1/2	76,3	75,3	3,6	6,45	MS
3	89,5	88,0	4,0	8,40	MS
4	115,0	113,1	4,5	12,21	MS
5	140,8	138,5	5,0	16,64	MS
6	166,5	163,9	5,0	19,77	SM

Length 6 m – plain ends cut perpendicularly to the tube axis

TOLERANCES

SERIES	OUTSIDE DIAMETER	WALL THICKNESS	WEIGHT	LENGTH
LIGHT L1	See table of dimensions	+ not limited – 8%	+10% – 8% on each tube	+ 100 mm - 0 mm
MEDIUM - HEAVY	See table of dimensions	± 12,5%*		+ 100 mm - 0 mm

* The maximum tolerance is not applied if the bundle is within the weight tolerance

Tests

Hydrostatic test at 50 bar or equivalent nondestructive electromagnetic tests (Eddy Current).

- tensile test
- bending test

Marking

Continuous marking in indelible black ink with the words:

TenarisDalmine Thermo®
EN 10255 SL1

TenarisDalmine Thermo®
EN 10255 SM

Certification

If not requested otherwise when placing the order, a 2.2 test certificate in compliance with norm EN 10204 will be issued.

Tenaris Thermo®

Red-White

Tenaris Thermo® EN 10216-1

Seamless P235TR1/TR2 carbon steel pipes for fireproof systems and civil and industrial installations, coated in epoxy resin, available in a dimensional range of outside diameters from 101.6 to 273 mm.

MECHANICAL AND CHEMICAL CHARACTERISTICS

TYPE OF STEEL	MECHANICAL PROPERTIES				CHEMICAL COMPOSITION % (CAST ANALYSIS)					
	ULTIMATE TENSILE STRENGTH R_m MPa*	YIELD STRENGTH R_{eH} MIN MPa*	ELONGATION		C MAX	Mn MAX	Si MAX	P MAX	S MAX	Al MIN
			A MIN % l	t						
P235TR1	360 ÷ 500	235	25	23	0,16	1,20	0,35	0,025	0,020	-
P235TR2	360 ÷ 500	235	25	23	0,16	1,20	0,30	0,025	0,020	0,020

*1MPa = 1N/mm²

DIMENSIONS - EN 10216-1

OD	W.T. mm	NOMINAL WEIGHT kg/m
26,9	2,3	1,3
33,7	2,6	1,99
42,4	2,6	2,55
48,3	2,6	2,93
60,3	2,9	4,11
76,1	2,9	5,24
88,9	3,2	6,76
101,6	3,6	8,73
108	3,6	9,30
114,3	3,6	9,87
133	4,0	12,77
139,7	4,0	13,38
159	4,5	17,20
168,3	5,0	20,13
193,7	5,4	25,14
219,1	6,3	33,13
244,5	6,3	37,09
273	6,3	41,52

Length 4 to 8 m - plain ends cut perpendicularly to the tube axis

Tolerance

On the outside diameter

± 1% with a minimum of 0.5 mm

On the wall thickness

For O.D. ≤ 219.1 mm ± 12.5%

With a minimum of 0.4mm

For O.D. > 219.1 mm:

± 20% when the

WT/O.D. relationship is ≤ 0.025

± 15% when the

WT/O.D. relationship is > 0.025

Certification

If not requested otherwise when placing the order, a 2.2 test certificate in compliance with norm EN 10204 will be issued.

Marking

Continuous marking in indelible black ink with the words:

- TenarisDalmine Thermo®
EN 10216 – 1 P235 TR1

Tests

Hydrostatic test at 70 bar or equivalent nondestructive electromagnetic test (Eddy Current).



Tenaris Thermo® Green

Tenaris Thermo® EN 10255

Seamless S 195T carbon steel pipes for civil and industrial installations, hot-coated in epoxy powder, available in a dimensional range of from 1/2" to 4".

MECHANICAL AND CHEMICAL CHARACTERISTICS

TYPE OF STEEL	MECHANICAL PROPERTIES			CHEMICAL COMPOSITION % (CAST ANALYSIS)				
	ULTIMATE TENSILE STRENGTH R_m	YIELD STRENGTH R_{eH}	ELONGATION A	C	Mn	Si	P	S
	N/mm ²	Min N/mm ²	Min %	Max	Max	Max	Max	Max
S 195T	320 ÷ 520	195	20	0,20	1,40	-	0,035	0,030

DIMENSIONS – LIGHT SERIES L1 EN10255

ND Inches	OUTSIDE DIAMETER		W.T. mm	NOMINAL WEIGHT kg/m	EXECUTION
	MAX mm	MIN mm			
1/2	21,7	21,0	2,3	1,08	SL1 - WL1
3/4	27,1	26,4	2,3	1,40	SL1 - WL1
1	34,0	33,2	2,9	2,21	SL1 - WL1
1 1/4	42,7	41,9	2,9	2,83	SL1 - WL1
1 1/2	48,6	47,8	2,9	3,26	SL1 - WL1
2	60,7	59,6	3,2	4,52	SL1 - WL1
2 1/2	76,3	75,2	3,2	5,77	SL1 - WL1
3	89,4	87,9	3,6	7,59	SL1 - WL1
4	114,9	113,0	4,0	10,90	SL1 - WL1

Length 6m - plain ends cut perpendicularly to the tube axis



Tolerances

On the outside diameter
See table of dimensions

On the wall thickness
+ not limited
- 8%

on the nominal weight
+ 10% - 8% on each tube

on the length
+ 100 - 0 mm

Tests

Hydrostatic test at 50 bar or equivalent nondestructive electromagnetic tests (Eddy Current).
- tensile test
- bending test

Ends

Plain, cut perpendicularly to the tube axis.

Certification

If not requested otherwise when placing the order, a 2.2 test certificate in compliance with norm EN 10204 will be issued.

Marking

Continuous marking in indelible black ink with the words:
TenarisDalmine Thermo®
EN 10255 SL1

Tenaris Thermo®

Yellow - pipeline and plugs

Tenaris Thermo® EN ISO 3183: 2012

Seamless L245 PSL1 carbon steel pipes, hot-coated in epoxy powder, available in a dimensional range of from 3/4" to 4".

MECHANICAL AND CHEMICAL CHARACTERISTICS							
TYPE OF STEEL	MECHANICAL PROPERTIES			CHEMICAL COMPOSITION % (CAST ANALYSIS)			
	ULTIMATE TENSILE STRENGTH	YIELD STRENGTH	ELONGATION	C	Mn	P	S
	R _m	R _{t 0,5}	A				
	Min N/mm ²	Min N/mm ²	Min %	Max	Max	Max	Max
L245 PSL1	415	245	20	0,28	1,2	0,030	0,030

DIMENSIONS - EN ISO 3183					
ND	ND	OD	W.T.	NOMINAL WEIGHT	EXECUTION*
Inches	mm	mm	mm	kg/m	
3/4	20	26,9	2,3	1,40	SL1 - WL1
1	25	33,7	2,9	2,21	SL1 - WL1
1 1/4	32	42,4	2,9	2,83	SL1 - WL1
1 1/2	40	48,3	2,9	3,26	SL1 - WL1
2	50	60,3	3,2	4,52	SL1 - WL1
2 1/2	65	76,1	3,2	5,77	SL1 - WL1
3	80	88,9	3,6	7,59	SL1 - WL1
4	100	114,0	4,0	10,90	SL1 - WL1

*On request up to 10" is available
Length 6 m

Tolerances

On the outside diameter
± 0,75 %

On the wall thickness
Wt < 4 mm +0,6% - 0,5%
Wt > 4 mm < 25 mm
+ 0,15% - 0,125%

On the nominal weight
according to norm
EN ISO 3183: 2012

On the length
+ 100 - 0 mm
on each tube

Ends

Plain, cut perpendicularly to the tube axis.

Tests

The pipes are subjected to tests in conformity to production standards, additional tests must be agreed upon when ordering.

Marking

Continuous marking in indelible black ink with the words:
- TenarisDalmine Thermo®
EN ISO 3183 L245 PSL1



Tubes for pressure applications

EN 10216-1 Norm

MECHANICAL AND CHEMICAL CHARACTERISTICS										
TYPE OF STEEL	MECHANICAL PROPERTIES				CHEMICAL COMPOSITION % (CAST ANALYSIS)					
	ULTIMATE TENSILE STRENGTH R_m	YIELD STRENGTH R_{eH} MIN MPa*	ELONGATION		C	Mn	Si	P	S	Al
			MIN %	t						
P235TR1	360 ÷ 500	235	25	23	0,16	1,20	0,35	0,025	0,020	-
P235TR2	360 ÷ 500	235	25	23	0,16	1,20	0,30	0,025	0,020	0,020

* Upon request different steel types in compliance with the norm can be supplied

Tolerances

On the outside diameter

$\pm 1\%$ o $\pm 0,5$ mm,
the greater of the two values

On wall thickness

For O.D. > 219,1 mm:
 $\pm 20\%$ when the
WT/O.D. relationship is ≤ 0.025
 $\pm 15\%$ when the
WT/O.D. relationship is > 0.025

Lengths

Normally supplied in
production lengths of from 4
to 8m
Different lengths must be
agreed upon.

Surfaces

Usually supplied hot-finished,
without any surface
protection.
If requested, for O.D. up to
273mm, external epoxy resin
coating – Thermo – can be
supplied.

Ends

Plain, cut perpendicularly to
the tube axis.

Tests

Hydrostatic test at 70 bar or
equivalent nondestructive
electromagnetic test (Eddy
Current).

Documentation

If not requested otherwise
when placing the order, a 2.2
test certificate in compliance
with norm EN 10204 will be
issued.

DIMENSIONS AND WEIGHT

OUTSIDE DIAMETER mm	W.T. mm	NOMINAL WEIGHT kg/m	OUTSIDE DIAMETER mm	W.T. mm	NOMINAL WEIGHT kg/m
33,7	2,6	1,99	159	4,5	17,15
42,4	2,6	2,55	168,3	5,0	20,13
48,3	2,6	2,93	193,7	5,4	25,08
60,3	2,9	4,11	219,1	6,3	33,06
70	2,9	4,80	244,5	6,3	37,01
76,1	2,9	5,24	273	6,3	41,44
88,9	3,2	6,76	323,9	8,4	65,36
101,6	3,6	8,70	355,6	8	68,58
108	3,6	9,27	406,4	8,8	86,29
114,3	3,6	9,83	457	10	110,24
133	4	12,72	508	11	134,82
139,7	4,0	13,38	610	12,5	184,19

Seamless and welded pipe for cable ducting

Threaded and galvanized for explosion-proof electric plant (AD-PE)

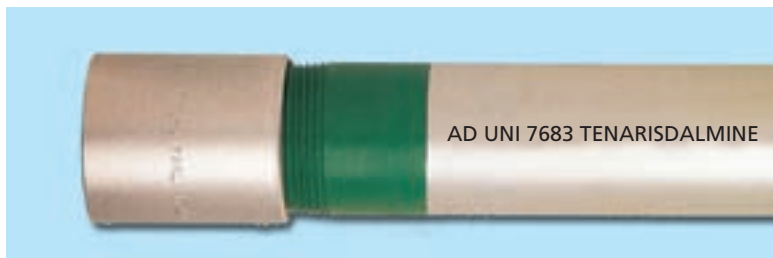
UNI 7683 Norm

MATERIAL UNALLOYED STEEL

TYPE OF STEEL	MECHANICAL PROPERTIES			CHEMICAL COMPOSITION % (CAST ANALYSIS)				
	ULTIMATE TENSILE STRENGTH R_m	YIELD STRENGTH $R_{t 0,5}$	ELONGATION A	C	Mn	Si	P	S
	N/mm ²	Min N/mm ²	Min %	Max	Max	Max	Max	Max
Fe 360	360 ÷ 480	215	24	0,19	0,4 ÷ 0,8	0,35	0,045	0,045

DIMENSIONS – PIPES AND COUPLINGS

NOMINAL THREAD DIAMETER Inches	PIPE DIMENSIONS			WEIGHT OF THREADED PIPE WITH COUPLING kg/m	COUPLING DIMENSIONS (UNI 7684)	
	OUTSIDE DIAMETER		W.T.		DIAMETER	EXTERNAL LENGTH
	MAX mm	MIN mm	mm		MAX mm	MIN mm
1/2	21,7	21,0	2,35	1,19	25	45
3/4	27,1	26,4	2,35	1,50	32	45
1	34,0	33,2	2,90	2,33	39	60
1 1/4	42,7	41,9	2,90	2,99	48	60
1 1/2	48,6	47,8	2,90	3,45	54	60
2	60,7	59,6	3,25	4,83	66	60
2 1/2	76,3	75,2	3,25	6,15	82	70
3	89,4	87,9	3,65	8,15	95	70





Dimensions

The pipes and couplings are produced in the dimensions shown in the table.

Tolerances

For external diameter

See table.

On the wall thickness

+ not limited - 12,5%

On the weight

± 10% on each tube;
± 7,5% for lots of at least 10 t

Length

6 m with tolerances
+ 100 - 50 mm.
3% permissible in lengths of
from 4 to 5.95m

Ends

Conical gas thread UNI 6125
Each pipe is supplied with a
UNI 7684 coupling fitted to one
end, galvanized after biconical
threading, and the other with a
plastic end cap.

Coating

Hot-galvanized
EN 10240

Tests

Hydrostatic test at 50 bar or
equivalent test, with
nondestructive electromagnetic
tests
Tensile and bending tests in
accord with procedures
required by the norm.

Marking

Pipe
Continuous marking in indelible
black ink with the words:
AD UNI 7683
TENARISDALMINE

Coupling

Die stamped with the words:
AD UNI 7684
TENARISDALMINE

Certification

If not requested otherwise
when placing the order, a 2.2
test certificate in compliance
with norm EN 10204 will be
issued.

Use

In places where the danger of
explosion or fire exists, “flame
and explosion-proof (AD-PE)”

Dalmine Polycoat pipes

External coating in extruded polyethylene sheath

UNI 9099 Norm

This coating is produced on a sheath extrusion line; this technology makes it possible to produce a polyolefin coating characterized by total adherence and perfectly uniform thickness.

The coating guarantees the best in terms of:

- high resistance to corrosion
- longer service life
- long life insulation (the dielectric continuity test is carried out in the factory at 25,000 Volts – for pipes coated in bitumen the

corresponding test is carried out at 10,000Volts)

- good resistance to damage in handling
- excellent resistance to interference from nearby metallic structures
- able to be used in highly corrosive environments
- cold bending on site
- easy to repair the coating at joints

The coating is applied to the hot finished surface, after sandblasting, when the pipes are used for natural gas

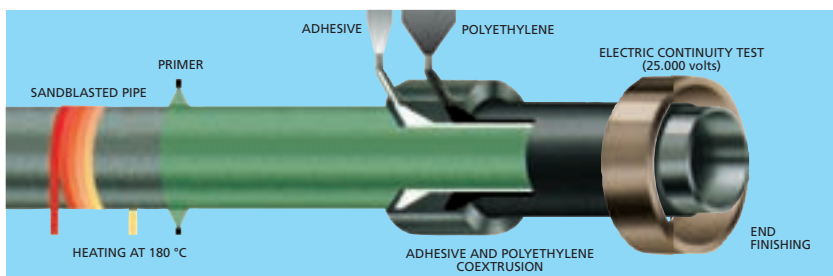
transport; for water pipes the surfaces are galvanized beforehand, according to the EN 10240 A.1 norm, and, if requested, certified. The pipes are marked continuously in blue for water pipes and in yellow for natural gas transport.

EXTERNAL COATING THICKNESS

PIPE DIAMETER		MINIMUM COATING THICKNESS mm	
NOMINAL	OUTSIDE mm	REINFORCED (R)	SPECIAL (S)
≤ 100	≤ 114,3	1,8	2,5
> 100 ≤ 250	> 114,3 ≤ 273	2,0	2,5
> 250 ≤ 500	> 273 ≤ 508	2,2	3,0
> 500 ≤ 700	> 508 ≤ 711	2,5	3,5

Coating on > di 219.1 diameter pipes is achieved during extrusion in lateral bands

Examples of marking and colour identification



Coating composition

- double coated (R2R) made up of two co-extruded layers of adhesive and polyethylene
- triple coated (R3R) made up of a layer of epoxy primer onto which the adhesive and polyethylene layers are co-extruded

Packing

The pipes are packed in hexagonal bundles bound with four steel bands with a

green seal bearing the Tenaris logo.

PIPES FOR PLUMBING INSTALLATIONS

DIAMETER		EN 10255 SL1		EN 10255 SM		EN 10216-1 S		THERMO SL1		POLYCOAT SM		POLYCOAT SL1	
inches	mm	light series 1 n° pipes	kg	medium series pipes	kg	pipes	kg	light series 1 pipes	kg	medium series pipes	kg	light series 1 pipes	kg
3/8	17,1	169	750	169	850	–	–	–	–	–	–	–	–
1/2	21,3	127	820	127	920	–	–	127	820	127	1010	127	910
3/4	26,9	127	1060	127	1190	–	–	127	1065	127	1300	127	1170
1	33,7	91	1200	91	1315	–	–	91	1205	91	1300	91	1300
1 1/4	42,4	61	1030	61	1135	–	–	61	1035	61	1410	61	1110
1 1/2	48,3	61	1190	61	1300	–	–	61	1190	61	1400	61	1280
2	60,3	37	1000	37	1115	–	–	37	1000	37	1190	37	1070
2 1/2	76,1	37	1270	19	735	–	–	37	1280	37	1510	37	1360
3	88,9	37	1680	19	960	–	–	19	865	19	1000	19	910
4	114,3	19	1230	19	1390	19	1125	19	1240	19	1460	19	1300
5	139,7	–	–	7	700	7	650	–	–	7	730	–	–
6	165,1	–	–	7	830	7	840*	–	–	7	870	–	–
8	219,1	–	–	–	–	7	1390	–	–	–	–	–	–
10	273,0	–	–	–	–	7	1745	–	–	–	–	–	–

Length 6 m

The bundle weight is indicative. The actual weight is shown on a label applied to each bundle

* Diameter 168,3 mm

S = SEAMLESS

Installation recommendations

Tenaris Thermo®



The welded joint can be made without removing the coating. Analysis has shown the absence of additional harmful substances in the fumes produced during welding.

Welding can be done with oxyacetylene, arc with covered electrodes or TIG methods.

The coating in the weld area can easily be repaired with

epoxy resin of the same type, applied cold on site with a spatula or brush.

When laying into chase, take care not to damage the epoxy coating. In case the coating is damaged, repair with cold setting epoxy resin.

Comparison between Tenaris Thermo® pipes and pipes coated with normal rust-proofing

The photograph shows the results of a shear test carried out under negative polarization in compliance with norm UNI 9099.

The test involves putting a piece of tube, in which a 6mm diameter hole has been made in the coating, in contact with a saline solution which is afterwards

negatively polarized with a high density electric current.

At the end of the test, at a temperature of 23 °C for 28 days, the area where the coating has peeled is measured.



Pipe Tenaris Thermo®

Pipe coated with rust proofing

Temperature

The generally permitted working temperature is between from -10°C to $+110^{\circ}\text{C}$.

Final inspection

Before putting the pipes into service it is normal procedure to carry out a hydraulic test at a pressure equal to 1.5 times the nominal pressure allowed for the type of pipe chosen.

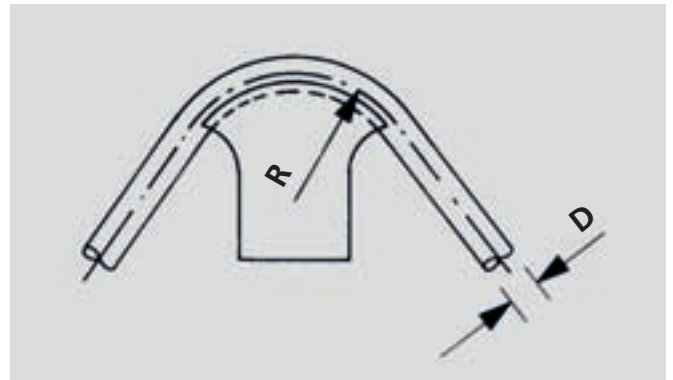
Whenever the test proves negative, in the case of a leak due to some defect in the pipe but not in the joint, inform the Sales Office.

If there is any danger of freezing, empty the system.

Pressures

The permitted pressure is determined by the constructor or end-user, depending on the type of fluid, the safety coefficients, regulations, norms or calculation codes which the installer must satisfy.

Nominal pressures, at room temperature, are given under the indicative headings in the following table.



Bending

Using a standard, portable tool, excellent results can be achieved with a bending radius of >6 times the pipe diameter.

Threading

Manual screw dies or threading machines can be used with the same results. A threader machine requires dies with sharp chasers, a good flow of cutting oil and good alignment between the axis of the die and the pipe, taking care choosing the cutting depth per pass.

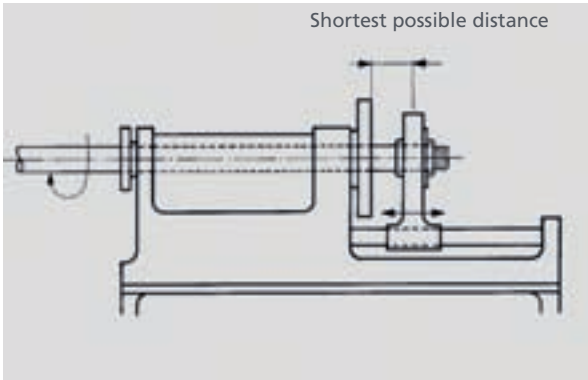
Threaded joints

Water or gas tightness is achieved by covering the thread with the right kind of sealant after having wrapped the threads in hemp or tow lint, or otherwise wrapping Teflon tape round in the direction of the screw thread, taking care to keep the tape tight.

Following this, the steel couplings or cast iron fittings should be tightened sufficiently.

NOMINAL PRESSURE			
PIPES	SERIE		
	LIGHT 1 bar	MEDIUM bar	HEAVY* bar
THREADED	10	16	16
PLAIN	16	25	25

*The greater wall thickness of the heavy series does not mean a greater admissible pressure but is only in order to ensure greater resistance to corrosion and erosion, as well as better rigidity and higher resistance to shock.



Welding

Oxyacetylene welding is recommended with the following settings:

Torch:

Gas flow in l/h between 65 - 80 times the wall thickness of the pipe in mm, welding speed of 3.5m/h average.

Welding wire:

Diameter at least equal to half the pipe wall thickness plus 1 mm.

Preparation of the pipe ends:

for wall thicknesses ≤ 3 mm square, clean cut, for wall thicknesses > 3 mm chamfer at about 45° with a grinder up to about half the wall thickness.

Lay down

- Completely avoid any contact with plaster, heterogeneous or porous materials (mixtures of wood and cement, tile, etc.)
- Prepare the mortar and concrete using good quality cement, washed siliceous sand and fine gravel, pure water. Never use plaster or anti-freezing agents, as the salts, such as chlorides, sulfates, etc., are particularly dangerous.
- Sink the pipe completely into the mortar or concrete mix, which should be thick and homogeneous

If there is any doubt at all that the above suggestions have not been followed completely, protect the pipe by wrapping it in tarpaper or a similar product before sinking the pipe into place.





www.tenaris.com



For additional information, please visit
www.tenaris.com

For technical assistance, please contact
gaswaterandfireextinguishing@tenaris.com