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THE COMPLETE HOT & COLD WATER PIPE SYSTEM

- The Cost Effective Hot and Cold PPR Piping System.
- Highest Quality Imported Fittings.
- Unwavering Commitment to Quality & Reliability.
- Outstanding Pre Sales & Post Sales Support.





Thermoline



**DADEX**

## Introduction

Thermoline is a versatile and comprehensive piping solution for transportation and distribution of hot and cold water supply systems, air-conditioning systems, public landscaping and sports facilities etc.

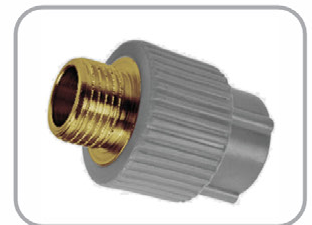
## Material

Thermoline piping system is manufactured from Polypropylene Random Copolymer (PPR). PPR material is extensively used in food and medical industries due to its superior characteristics. It exhibits excellent physical and chemical properties at elevated temperatures. These factors make PPR an ideal material for piping systems for transmission of hot and cold water, potable water and other fluids.

## Standards and Specifications

Thermoline piping system is available in PN 16 and PN 20 rating. The system conforms to the following international standards:

<b>Pipes</b>	DIN 8077-8078
<b>Fittings</b>	DIN 16962



## Available Range

Thermoline piping system is available in grey color in the outside diameters of 20mm, 25mm, 32mm, 40mm, 50mm, 63mm, 75mm, 90mm, and 110mm. Larger diameters upto 250mm can be produced upon request. Complete range of suitable fittings is also available along with special fittings such as flange connections and short by-pass bends.

## Fields of Application

Thermoline piping system is highly recommended for hot and cold water supply in:

- Residence and apartments.
- Hospitals.
- Hotels and Offices.
- School buildings.
- Swimming pools.
- Commercial buildings and plazas.
- Industries



## Features & Benefits

- Approved internationally for supply of drinking water.
- Lightweight, easy to transport, and easy to install.
- Easily joined by heat fusion.
- Metal threaded fitting for durability & performance.
- Smooth internal surface for reduced head loss.
- Resistant to abrasion and corrosion.
- Noise free.
- Resistant to frost.
- Environment friendly.
- Suitable in seismic areas.
- Poor conductor of heat.
- Poor conductor of electricity.



Technical Information  
Dimensions of Thermoline Pipes

Nominal Outside Diameter (mm)	Minimum Wall Thickness	
	PN 16 (mm)	PN 20 (mm)
20	2.8	3.4
25	3.5	4.2
32	4.4	5.4
40	5.5	6.7
50	6.9	8.3
63	8.6	10.5
75	10.3	12.5
90	12.3	15.0
110	15.1	18.3

## Joining Method

### Heat Fusion

Joining of Thermoline piping system is carried out by a method called 'Heat Fusion'. This is done by means of a welding machine. The male and female parts of pipes and fittings are joined together to form a heat fusion joint.

### Welding Guidelines

- Cut the pipe at the right angle with a cutter.
- Chamfers should be given to the outer ends of the pipe by a knife.
- Mark off the welding depth at the pipe end.
- Always clean the pipe and fittings from burrs, dirt and chips before welding.
- Temperature is adjusted to approximately 260°C in the welding machine.
- Simultaneously, heat the ends of both pipe and fitting as per recommended heating time.
- Push the pipe end into the fitting axially and ensures its alignment of assembly within the specified time period.
- After welding heaters of the machine should be cleaned for the next use.

Nominal Outside Diameter (mm)	Welding Depth (mm)	Average Heating Time (Sec)	Average Working Time (Sec)	Average Cooling Time (min)
20	14	6	4	2
25	16	7	4	2
32	18	8	6	4
40	20	12	6	4
50	23	18	6	4
63	26	24	8	6
75	28	30	10	8
90	30	40	11	8
110	33	50	12	8

## Installation Guidelines

### Concealed Installation

Thermoline piping system does not cause any problem when embedded in the wall or floor, because naturally occurring frictional forces prevent the thermal expansion and contraction.



### Fastening Technique for Open Installation

Suspended pipelines requires compensation for thermal changes and this can be achieved by proper placement of fixed and sliding clamps in the installation network.

**a) Fixed Point:** Fixed clamps help limit the uncontrollable movements of the pipelines and divide them into sections. Fixed point spacing must be performed on the basis of pipe diameters. The material used to perform this operation must possess certain characteristics so that it does not damage the external surface of the pipe.

**b) Sliding Point:** Sliding clamps allow the axial movement of the pipe without damaging it. On locating a sliding clamp it has to be ensured that movements of the pipeline are not hindered by the fittings installed next to the them.

## Thermoline Clamp Spaces

Maximum distances of supports of Thermoline PPR - S 3.2 (PN 16) pipe (horizontal pipeline)

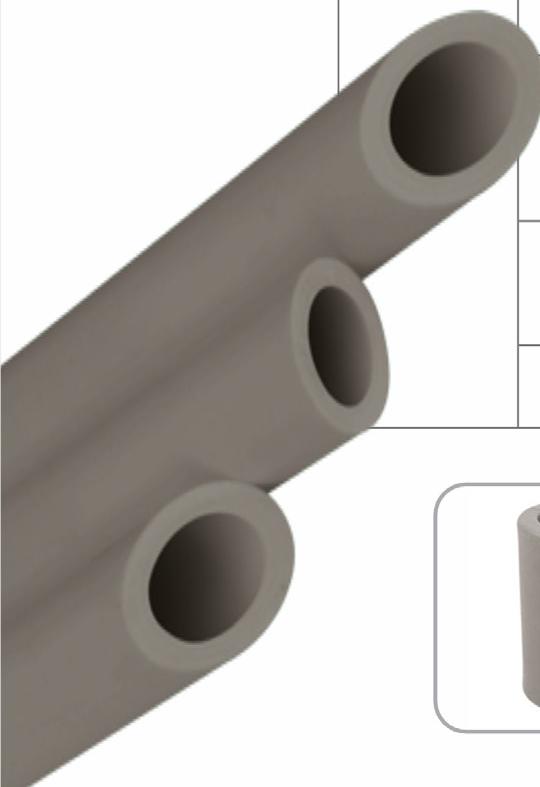
Pipe Ø (mm)	Spacing Distances (in cm) at Temperature of					
	20°	30°	40°	50°	60°	80°
20	90	80	80	80	70	65
25	95	95	95	90	80	75
32	110	105	105	100	95	80
40	120	120	115	105	100	95
50	135	130	125	120	115	100
63	155	150	145	135	130	115
75	170	165	160	150	145	125
90	180	180	170	165	160	135
110	200	195	190	180	175	155

Maximum distances of supports of Thermoline PPR - S 2.5 (PN 20) pipe (horizontal pipeline)

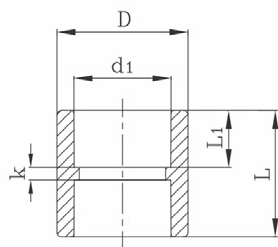
Pipe Ø (mm)	Spacing Distances (in cm) at Temperature of					
	20°	30°	40°	50°	60°	80°
20	95	90	85	85	80	70
25	100	100	100	95	90	85
32	120	115	115	110	100	90
40	130	130	125	120	115	100
50	150	150	140	130	125	110
63	170	160	155	150	145	125
75	185	180	175	160	155	140
90	200	200	185	180	175	150
110	220	215	210	195	190	165

## Allowable Working Pressure for Thermoline Piping System With SF= 1.5 as per DIN 8077:2008-09

<b>SAFETY FACTOR 1.5</b>	Temperature	Time in Operation	Thermoline (PP-RC)	
			S 3.2 (PN 16)	S 2.5 (PN 20)
			SDR 7.4	SDR 6
	[°C]	(Years)	Maximum Allowable Pressure (Bar)	
<b>20</b>		5	22.3	28.1
		10	21.7	27.4
		25	21	26.4
		50	20.4	25.7
		100	19.9	25
<b>30</b>		5	18.9	23.8
		10	18.4	23.2
		25	17.7	22.3
		50	17.2	21.7
		100	16.8	21.1
<b>40</b>		5	16	20.2
		10	15.5	19.6
		25	15	18.8
		50	14.5	18.3
		100	14.1	17.8
<b>50</b>		5	13.5	17
		10	13.1	16.5
		25	12.6	15.9
		50	12.2	15.4
		100	11.8	14.9
<b>60</b>		5	11.3	14.3
		10	11.0	13.9
		25	10.5	13.3
		50	10.2	12.9
<b>70</b>		5	9.5	12.0
		10	9.2	11.6
		25	8.0	10.0
		50	6.7	8.5
<b>80</b>		5	7.6	9.6
		10	6.4	8.1
		25	5.1	6.5
<b>95</b>		1	6.1	7.6
		2	4.1	5.2

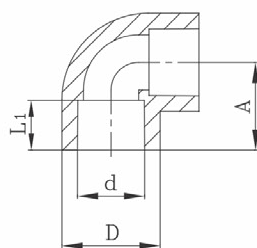


## Socket



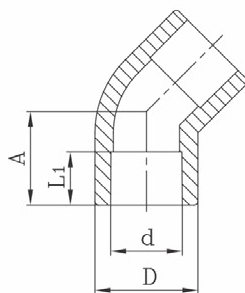
DN	d (mm)	L1(min.) (mm)	D (mm)	L (mm)	k (mm)
20	19,5	14,5	28	33	4
25	24,5	16,0	34	37	4
32	31,5	18,0	42,5	41	4
40	39,4	20,5	53	46	4,5
50	49,4	23,5	66	52	4,5
63	62,5	27,5	83	60	4,5
75	74,7	30,0	100	65	5
90	89,2	33,0	120	71,5	6
110	109,0	37,0	146	80	6
125	124,6	40,0	167	86	6

## Elbow (90°)



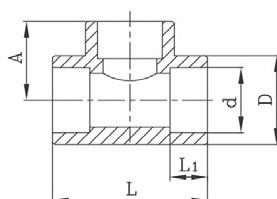
DN	d (mm)	L1(min.) (mm)	D (mm)	A (mm)
20	19,5	14,5	28	25,5
25	24,5	16	33	29,5
32	31,5	18	43,5	35
40	39,4	20,5	53	41,5
50	49,4	23,5	67	50
63	62,5	27,5	83,5	60
75	74,7	30	100	68
90	89,2	33	120	78,5
110	109	37	147	92,5
125	124,6	40	168	102

## Elbow (45°)



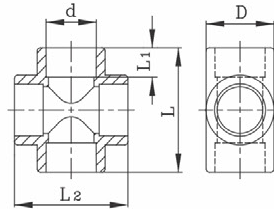
DN	d (mm)	L1(min.) (mm)	D (mm)	A (mm)
20	19,5	14,5	26,5	20
25	24,5	16	33,5	22
32	31,5	18	43,5	32
40	39,4	20,5	52,5	31
50	49,4	23,5	68	35
63	62,5	27,5	84	42,5
75	74,7	30	100	47

## Tee



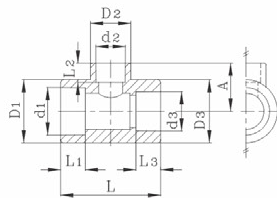
DN	d (mm)	L1(min.) (mm)	D (mm)	L (mm)	A (mm)
20	19,5	14,5	27	51,5	26
25	24,5	16	33	63	30
32	31,5	18	43	72	36
40	39,4	20,5	53	85	43,5
50	49,4	23,5	66,5	100	50
63	62,5	27,5	84,5	119,5	60
75	74,7	30	100	130	73
90	89,2	33	120	158	79
110	109	37	146	186	93
125	124,6	40	167	208	103,5

## Cross Tee



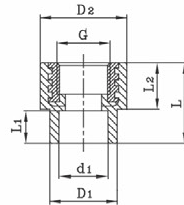
DN	d (mm)	L1(min.) (mm)	D (mm)	L (mm)	L2 (mm)
20	19,5	14,5	26,5	51	51
25	24,5	16	33	60	60
32	31,5	18	42,5	70	70
40	39,4	20,5	53	84	84
50	49,4	23,5	66,5	103,5	103,5

## Unequal Tee



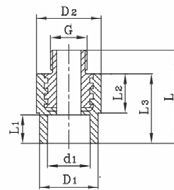
D1	D2	D3	L1(min.) (mm)	D1 (mm)	d2 (mm)	L2(min.) (mm)	D2 (mm)	d3 (mm)	L3(min.) (mm)	D3 (mm)	L (mm)	A (mm)
20x25x20			14,5	33	24,5	16	33,5	19,5	14,5	33	65	37,5
25x20x20			16	35	19,5	14,5	28	19,5	14,5	28	53	27,5
25x20x25			16	33	19,5	14,5	26,5	24,5	16	33	55	28,5
25x25x20			18	33,5	24,5	16	33,5	19,5	14,5	33,5	65	35,5
32x20x20			18	42,5	19,5	14,5	42,5	19,5	14,5	42,5	73,5	40,5
32x20x25			18	43	19,5	14,5	42,5	24,5	16	43	73,5	40,5
32x20x32			18	42,5	19,5	14,5	27	31,5	18	42,5	60	31,5
32x25x20			18	42,5	24,5	16	42,5	19,5	14,5	42,5	73,5	40
32x25x25			18	43	24,5	16	43	24,5	16	43	66	40
32x25x32			18	43	24,5	16	34	31,5	18	43	103	35
32x50x32			18	65	49,4	23,5	65	31,5	18	65	65,5	54,5
40x20x40			20,5	53	19,5	14,5	33	39,4	20,5	53	70	38,5
40x25x40			20,5	53	24,5	16	33	39,4	20,5	53	70	38,5
40x32x40			20,5	53	31,5	18	43	39,4	20,5	53	80	41
40x50x40			20,5	66	49,4	23,5	65,5	39,4	20,5	66	103	54,5
50x20x50			23,5	66,5	19,5	14,5	33	49,4	23,5	66,5	85	44
50x25x50			23,5	66,5	24,5	16	33	49,4	23,5	66,5	85	44
50x32x32			23,5	66,5	31,5	18	65,5	31,5	18	66,5	103	55,5
50x32x40			23,5	66	31,5	18	65,5	39,4	20,5	66	103	54,5
50x32x50			23,5	65	31,5	18	51	49,4	23,5	65	90	49,5
50x40x32			23,5	66,5	39,4	20,5	66	31,5	18	66,5	103	55,5
50x40x40			23,5	66	39,4	20,5	65,5	39,4	20,5	66	104	55,5
50x40x50			23,5	65	39,4	20,5	52	49,4	23,5	65	90	49,5
50x50x32			23,5	66	49,4	23,5	66	31,5	18	66	103,5	55
50x50x40			23,5	65,5	49,4	23,5	65	39,4	20,5	65,5	103,5	54,5
63x20x63			27,5	84	19,5	14,5	26,5	62,5	27,5	84	80	52
63x25x63			27,5	84	24,5	16	33	62,5	27,5	84	85	52
63x32x63			27,5	84	31,5	18	42,5	62,5	27,5	84	91	52
63x40x63			27,5	83,5	39,4	20,5	53	62,5	27,5	83,5	101	54
63x50x63			27,5	83,5	49,4	23,5	66	62,5	27,5	83,5	112	57
75x20x75			30	100	19,5	14,5	33	74,7	30	100	130	60
75x25x75			30	100	24,5	16	33	74,7	30	100	130	60
75x32x75			30	100	31,5	18	53	74,7	30	100	130	60
75x40x75			30	100	39,4	20,5	53	74,7	30	100	130	60
75x50x75			30	100	49,4	23,5	83,5	74,7	30	100	130	68
75x63x75			30	100	62,5	27,5	83,5	74,7	30	100	130	68
90x75x90			33	120	74,7	30	120	89,2	33	120	158	79
110x90x110			37	146	89,2	33	146	109	37	146	186	93

## Female Threaded Adaptor



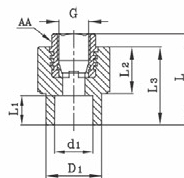
DN	d1 (mm)	L1 (min) (mm)	D1 (mm)	D2 (mm)	L2 (mm)	L (mm)	G (mm)
20x1/2	19,5	14,5	28,5	38,5	24	40,5	1/2"
20x3/4	19,5	14,5	29	42,5	24	40	3/4"
25x1/2	24,5	16	33,5	38	24	40,5	1/2"
25x3/4	24,5	16	33	42,5	24	40,5	3/4"
32x3/4	31,5	18	43	45,5	24,5	44	3/4"
32x1	31,5	18	43	53	28	47,5	1"

## Male Threaded Adaptor



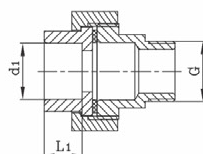
DN	d1 (mm)	L1(min) (mm)	D1 (mm)	D2 (mm)	L (mm)	L2 (mm)	L3 (mm)	G (mm)
20x1/2	19,5	14,5	28,5	35	53	24	40	1/2"
20x3/4	19,5	14,5	29	42,5	53	23,5	40	3/4"
25x1/2	24,5	16	34	39	53	23,5	40	1/2"
25x3/4	24,5	16	33	42	53	24	40	3/4"
32x3/4	31,5	18	43	45	57	24,5	44	3/4"
32x1	31,5	18	43	52,5	62,5	28	47	1"

## Female Threaded Adaptor (Hexagonal Shaped)



DN	d1 (mm)	L1(min) (mm)	D1 (mm)	L2 (mm)	L3 (mm)	L (mm)	G (mm)
40x1 1/4	39,4	20,5	54	25,5	47	61	1-1/4"
50x1 1/2	49,4	23,5	68	29	53,5	67,5	1-1/2"
63x2	62,5	27,5	84	28,5	55	73	2"
75x2 1/2	74,7	30	100	30	59,5	78	2-1/2"
90x3	89,2	33	120,5	44	75,5	92	3"
110x4	109	37	147	48	84	102	4"

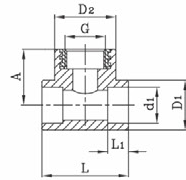
## Male Threaded Adaptor (Hexagonal Shaped)



DN	d1 (mm)	L1(min) (mm)	D1 (mm)	L2 (mm)	L3 (mm)	L (mm)	G (mm)
40x1 1/4"	39,4	20,5	54	25	47	81	1-1/4"
50x1 1/2"	49,4	23,5	68	29	53,5	87,5	1-1/2"
63x2"	62,5	27,5	84	28,5	55	98	2"
75x2 1/2"	74,7	30	100	30	59,5	105	2-1/2"
90x3"	89,2	33	120,5	43,5	76	118	3"
110x4"	109	37	147	48	84,5	129,5	4"

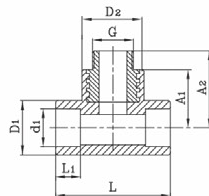


## Female Threaded Tee



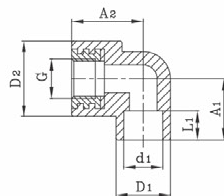
DN	d1 (mm)	L1(min) (mm)	D1 (mm)	D2 (mm)	A (mm)	L (mm)	G (mm)
20x1/2	19,5	14,5	27	38,5	35	51,5	1/2"
20x3/4	19,5	14,5	28,5	43	36	60,5	3/4"
25x1/2	24,5	16	33	38	37	60	1/2"
25x3/4	24,5	16	35	43	37,5	60	3/4"
32x1	31,5	16	43	53,5	43	70	1"

## Male Threaded Tee



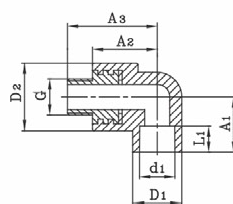
DN	d1 (mm)	L1(min) (mm)	D1 (mm)	D2 (mm)	A1 (mm)	A2 (mm)	L (mm)	G (mm)
20x1/2	19,5	14,5	27	38,5	35	47,5	51,5	1/2"
20x3/4	19,5	14,5	28,5	43	36,5	49,5	60,5	3/4"
25x1/2	24,5	16	33	38	37	50,5	60	1/2"
25x3/4	24,5	16	35	43	37,5	50,5	60	3/4"
32x1	31,5	16	43	53,5	43	58	70	1"

## Female Threaded Elbow



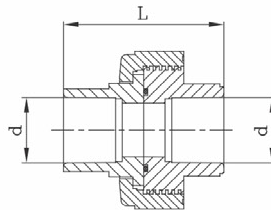
DN	d1 (mm)	L1(min) (mm)	D1 (mm)	D2 (mm)	A1 (mm)	A2 (mm)	G (mm)
20x1/2	19,5	14,5	28,5	38,5	31,5	36	1/2"
20x3/4	19,5	14,5	29	40	31	35,5	3/4"
25x1/2	24,5	16	33,5	38,5	32	38	1/2"
25x3/4	24,5	16	33,5	43	32	40	3/4"
32x3/4	31,5	18	44	57,5	34	45	3/4"
32x1	31,5	18	43,5	54	34	45	1"

## Male Threaded Elbow



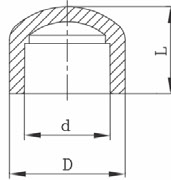
DN	d1 (mm)	L1(min) (mm)	D1 (mm)	D2 (mm)	A1 (mm)	A2 (mm)	A3 (mm)	G (mm)
20x1/2	19,5	14,5	28,5	38,5	31,5	36	49	1/2"
20x3/4	19,5	14,5	29	40	31	36	48	3/4"
25x1/2	24,5	16	33,5	38,5	32	38	51	1/2"
25x3/4	24,5	16	33,5	43	32	40	53	3/4"
32x3/4	31,5	18	43,5	57,5	34,5	45	58	3/4"
32x1	31,5	18	43,5	54	34,5	45	62	1"

## Manchon Union PN 10



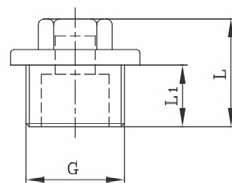
DN	d (mm)	L (mm)
20	19,5	41
25	24,5	51
32	31,5	63
40	39,4	71
50	49,4	74

## End Cap



DN	d (mm)	D (mm)	L (mm)
20	19,5	28,5	25,5
25	24,5	34,5	29
32	31,5	43	32
40	39,4	53,5	37,5
50	49,4	67	43,5
63	62,5	85	52
75	74,7	100,5	58
90	89,2	121	64
110	109	146,5	71,5

## Male Threaded End Cap



DN	L1 (mm)	L (mm)	G (mm)
20x1/2	11	34	1/2"
25x3/4	11	31	3/4"
32x1	20	40	1"



**DADEX**

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