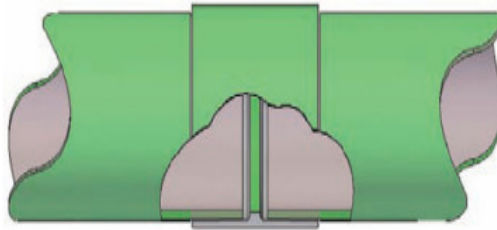


Green Thread Marine

System:	Epoxy resin
Pressure range:	up to 18 bar
Temperature:	max. 110°C
Chemical barrier:	0,5 mm chemical barrier
Connection type:	plain ends for bonding with socket DN 25-DN 300



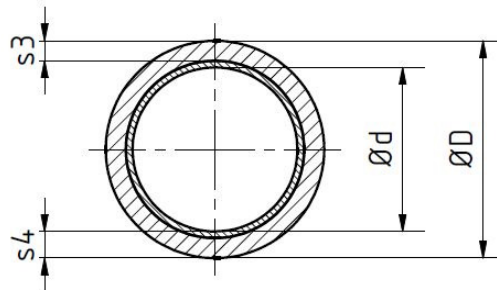
socket / spigot for bonding
DN 350-DN 500



Approvals:	American Bureau of Shipping Bureau Veritas Det Norske Veritas Germanischer Lloyd's United States Coast Guard CCS-China Classification Society Korean Register Nippon Kaiji Kyokai Class NK
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Green Thread Marine 175

Description: Green Thread Marine 175
 Connection: DN 25-DN 300 plain ends
 DN 350-DN 600 socket / spigot
 Standard: ISO Dimensions
 Diameter: DN 50 - 600
 Pressure class: 12 bar
 Max. Temperature: 110°C

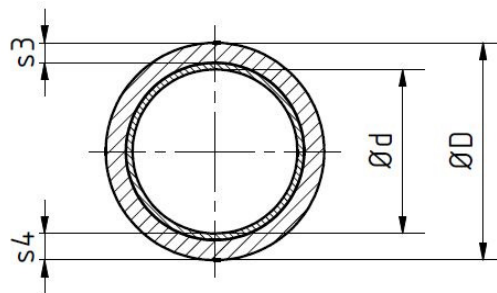


Diameter DN	Ø d [mm]	S4 [mm]	Ø D [mm]	S3 [mm]	Pipe volume [l/m]	Pipe ends	Weight [kg/m]
50	54,6	4,7	63,7	4,2	2,3	plain	1,34
80	83,3	4,8	93,0	4,3	5,5	plain	2,08
100	108,7	4,8	118,4	4,3	9,3	plain	2,68
150	161,3	5,8	172,7	5,3	20,4	plain	4,61
200	212,3	6,1	224,5	5,6	35,4	plain	6,40
250	263,1	7,1	277,6	6,6	54,4	plain	8,93
300	311,9	8	328,2	7,5	76,5	plain	12,35
350	356,6	8,9	374,4	8,4	99,9	Socket/Spigot	15,63
400	407,4	9,9	427,2	9,4	130,3	Socket/Spigot	19,79
450	452,8	10,9	474,5	10,4	161,1	Socket/Spigot	23,96
500	503,6	11,9	527,6	11,4	199,4	Socket/Spigot	29,17
600	605,5	14,0	633,5	13,5	288,0	Socket/Spigot	41,52

Delivery length DN 25 = 4 m; Delivery length from DN 40 = 6 m

Green Thread Marine 250

Description: Green Thread Marine 250
 Connection: DN 25-DN 300 plain ends
 DN 350-DN 600 socket / spigot
 Norm: ISO Dimensions
 Diameter: DN 25 - 600
 Pressure class: 18 bar
 Max. Temperature: 110°C

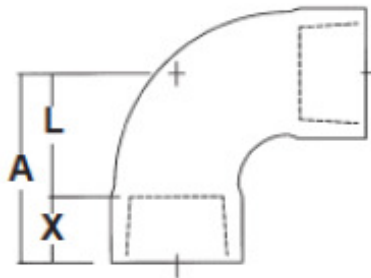


Diameter DN	Ø d [mm]	S4 [mm]	Ø D [mm]	S3 [mm]	Pipe volume [l/m]	Pipe ends	Weight [kg/m]
25	25,0	4,2	34,0	3,7	0,51	plain	0,59
40	38,1	5,4	49,8	4,9	1,14	plain	1,19
50	54,6	4,7	63,7	4,2	2,3	plain	1,34
80	83,3	4,8	93,0	4,3	5,5	plain	2,08
100	108,7	4,8	118,4	4,3	9,3	plain	2,68
150	161,3	5,8	172,7	5,3	20,4	plain	4,61
200	212,3	7,6	227,3	7,1	35,4	plain	7,89
250	263,1	8,9	280,9	8,4	54,4	plain	11,61
300	311,9	10,4	332,5	9,9	76,5	plain	15,92
350	356,6	11,7	379,5	11,2	99,9	Socket/Spigot	20,39
400	407,4	13,2	433,6	12,7	130,3	Socket/Spigot	26,19
450	452,8	14,5	481,6	14,0	161,1	Socket/Spigot	32,00
500	503,6	15,7	535,4	15,2	199,4	Socket/Spigot	39,14
600	605,5	18,8	642,9	18,3	288,0	Socket/Spigot	55,81

Delivery length DN 25 = 4 m; Delivery length from DN 40 = 6 m

Elbow 90°

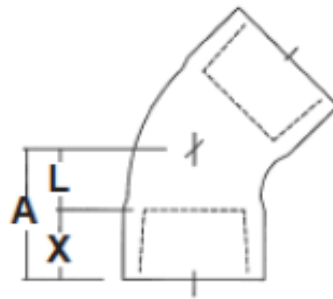
Description: Elbow 90°
 Connection: cylindrical socket
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: Green Thread 175: 10 bar
 Green Thread 250: 18 bar



DN	L [mm]	Green Thread 175			Green Thread 250		
		A [mm]	X [mm]	Weight ca.[kg]	A [mm]	X [mm]	Weight ca.[kg]
25	64	92	29	0,5	92	29	0,5
40	83	114	32	0,5	114	32	0,5
50	76	122	46	0,5	122	46	0,5
80	114	160	46	1	160	46	1
100	152	198	46	2	198	46	2
150	229	292	64	4	292	64	4
200	165	241	76	6	241	76	6
250	203	305	102	9	305	102	9
300	216	318	102	16	318	102	16
350	330	476	146	22	514	184	24
400	349	508	159	27	559	210	32
450	381	562	181	48	613	232	57
500	406	610	203	58	660	254	70
600	483	718	235	109	787	305	132

Elbow 45°

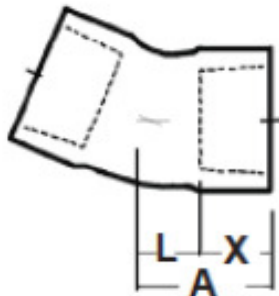
Description: Elbow 45°
 Connection: cylindrical socket
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: Green Thread 175: 10 bar
 Green Thread 250: 18 bar



DN	L [mm]	Green Thread 175			Green Thread 250		
		A [mm]	X [mm]	Weight ca.[kg]	A [mm]	X [mm]	Weight ca.[kg]
25	22	51	29	0,5	51	29	0,5
40	29	60	32	0,5	60	32	0,5
50	35	81	46	0,5	81	46	0,5
80	51	97	46	1	97	46	1
100	64	110	46	1	110	46	1
150	95	159	64	2	159	64	2
200	76	152	76	4	152	76	4
250	89	191	102	5	191	102	5
300	102	203	102	8	203	102	8
350	165	311	146	18	349	184	21
400	171	330	159	23	381	210	29
450	203	384	181	35	435	232	40
500	213	416	203	45	461	254	54
600	259	494	235	79	562	305	86

Elbow 22,5°

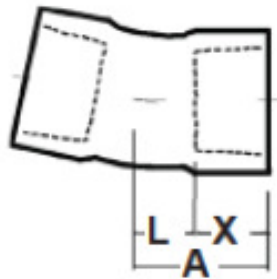
Description: Elbow 22,5°
 Connection: cylindrical socket
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: Green Thread 175: 10 bar
 Green Thread 250: 18 bar



DN	Green Thread 175				Green Thread 250		
	L [mm]	A [mm]	X [mm]	Weight ca.[kg]	A [mm]	X [mm]	Weight ca.[kg]
25							
40							
50	29	74	46	0,5	74	46	0,5
80	35	83	46	0,5	83	46	0,5
100	43	89	46	1	89	46	1
150	57	122	64	1	122	64	1
200	73	150	76	3	150	76	3
250	89	191	102	4	191	102	4
300	104	205	102	7	205	102	7
350	117	263	146	15	301	184	18
400	120	279	159	19	330	210	25
450	137	318	181	30	368	232	33
500	142	345	203	38	396	254	43
600	177	413	235	63	483	305	73

Elbow 11,25°

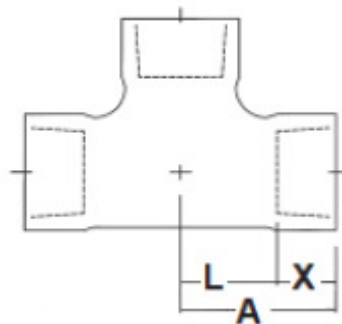
Description: Elbow 11,25°
 Connection: cylindrical socket
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: Green Thread 175: 10 bar
 Green Thread 250: 18 bar



DN	L [mm]	Green Thread 175			Green Thread 250		
		A [mm]	X [mm]	Weight ca.[kg]	A [mm]	X [mm]	Weight ca.[kg]
25							
40							
50	20	66	46	0,5	66	46	0,5
80	24	70	46	1	70	46	1
100	28	74	46	1	74	46	1
150	35	99	64	2	99	64	2
200	43	119	76	4	119	76	4
250	51	152	102	5	152	102	5
300	57	159	102	8	159	102	8
350	89	235	146	13	273	184	16
400	92	250	159	17	301	210	22
450	106	287	181	27	338	232	30
500	108	311	203	34	362	254	63
600	140	375	235	54	445	305	64

Tee

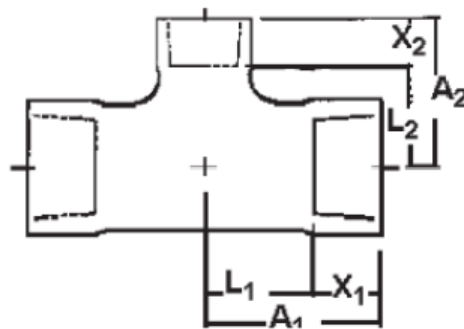
Description: Tee
 Connection: cylindrical socket
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: Green Thread 175: 10 bar
 Green Thread 250: 18 bar



DN	Green Thread 175				Green Thread 250		
	L [mm]	A [mm]	X [mm]	Weight ca.[kg]	A [mm]	X [mm]	Weight ca.[kg]
25	41	70	29	0,5	70	29	0,5
40	60	92	32	0,5	92	32	0,5
50	67	113	46	1	113	46	1
80	92	138	46	2	138	46	2
100	105	151	46	2	151	46	2
150	143	206	64	5	206	64	5
200	465	241	76	9	241	76	9
250	203	305	102	13	305	102	13
300	216	318	102	16	318	102	16
350	330	476	146	27	514	184	39
400	349	508	159	41	559	210	57
450	397	578	181	67	629	232	93
500	432	635	203	90	686	254	127
600	457	692	235	152	762	305	218

Tee reduced 175

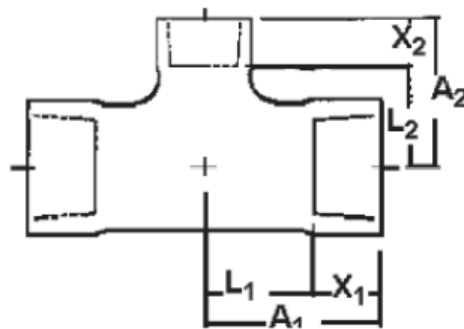
Description: Tee rduced
 Connection: cylindrical socket
 System: Green Thread Marine 175
 Diameter: DN 25 - 600
 Pressure class: 10 bar



DN1	DN2	L1 [mm]	L2 [mm]	A1 [mm]	A2 [mm]	X1 [mm]	X2 [mm]	Weight ca.[kg]
40	25	60	60	92	89	32	29	1
50	40	67	67	113	98	46	32	1
50	25	67	67	113	95	46	29	1
80	50	92	86	138	132	46	46	2
80	40	92	86	138	117	46	32	2
100	80	105	105	151	151	46	46	3
100	50	105	105	151	151	46	46	3
150	100	143	143	206	189	64	46	5
150	80	143	143	206	189	64	46	3
150	50	143	143	206	189	64	46	5
200	150	165	178	241	241	76	64	7
200	100	165	178	241	224	76	46	6
200	80	165	178	241	224	76	46	6
250	200	203	216	305	292	102	76	12
250	150	203	216	305	279	102	64	10
300	250	216	254	318	356	102	102	16
300	200	216	254	318	330	102	76	15
350	300	330	264	476	368	146	102	32
350	250	330	267	476	368	146	102	30
400	350	349	343	508	489	159	146	50
400	300	349	292	508	394	159	102	45
450	400	397	368	478	527	181	159	68
450	350	397	368	478	514	181	146	64
500	450	432	406	635	587	203	181	91
500	400	432	406	635	565	203	159	84
600	500	457	445	692	673	235	203	154
600	450	457	445	692	651	235	181	138

Tee reduced 250

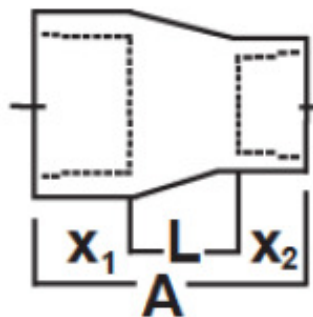
Description: Tee reduced
 Connection: cylindrical socket
 System: Green Thread Marine 250
 Diameter: DN 25 - 600
 Pressure class: 18 bar



DN1	DN2	L1 [mm]	L2 [mm]	A1 [mm]	A2 [mm]	X1 [mm]	X2 [mm]	Weight ca.[kg]
40	25	60	60	92	89	32	29	1
50	40	67	67	113	98	46	32	1
50	25	67	67	113	95	46	29	1
80	50	92	86	138	132	46	46	2
80	40	92	86	138	117	46	32	2
100	80	105	105	151	151	46	46	3
100	50	105	105	151	151	46	46	3
150	100	143	143	206	189	64	46	5
150	80	143	143	206	189	64	46	3
150	50	143	143	206	189	64	46	5
200	150	165	178	241	241	76	64	7
200	100	165	178	241	224	76	46	6
200	80	165	178	241	224	76	46	6
250	200	203	216	305	292	102	76	12
250	150	203	216	305	279	102	64	10
300	250	216	254	318	356	102	102	16
300	200	216	254	318	330	102	76	15
350	300	330	264	514	368	184	102	35
350	250	330	267	514	368	184	102	33
400	350	349	343	559	527	210	184	58
400	300	349	292	559	394	210	102	52
450	400	397	368	629	578	232	210	78
450	350	397	368	629	552	232	184	73
500	450	432	406	686	638	254	232	104
500	400	432	406	686	616	254	210	96
600	500	457	445	737	724	305	254	177
600	450	457	445	762	702	305	232	159

Concentric reducer

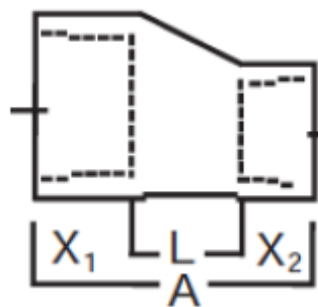
Description: Concentric reducer
 Connection: cylindrical socket
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: Green Thread 175: 10 bar
 Green Thread 250: 18 bar



DN1	DN2	L [mm]	A1 [mm]	X1 [mm]	X2 [mm]	Weight ca.[kg]	A1 [mm]	X1 [mm]	X2 [mm]	Weight ca.[kg]
40	25	37	97	32	29	0,5	97	32	29	0,5
50	40	44	711	46	32	0,5	711	46	32	0,5
50	25	70	144	46	29	0,5	144	46	29	0,5
80	50	64	156	46	46	0,5	156	46	46	0,5
80	40	95	173	46	32	0,5	173	46	32	0,5
100	80	64	156	46	46	1	156	46	46	1
100	50	64	156	46	46	1	156	46	46	1
150	100	121	230	64	46	2	230	64	46	2
150	80	130	240	64	46	2	240	64	46	2
200	150	162	302	76	64	3	302	76	64	3
200	100	164	286	76	46	4	286	76	46	4
250	200	159	337	102	76	5	337	102	76	5
250	150	175	340	102	64	6	340	102	64	6
300	250	184	387	102	102	7	387	102	102	7
300	200	197	375	102	76	8	375	102	76	8
350	300	287	535	146	102	11	573	184	102	13
350	250	300	549	146	102	12	586	184	102	14
400	350	395	700	159	146	20	789	210	184	22
400	300	330	591	159	102	20	641	210	102	22
450	400	394	733	181	159	26	835	232	210	30
450	350	410	737	181	146	25	826	232	184	28
500	450	406	791	203	181	32	892	254	232	40
500	400	410	772	203	159	30	873	254	210	37
600	500	686	1124	235	203	73	1245	305	254	90
600	450	489	905	235	181	59	1026	305	232	68

Eccentric reducer

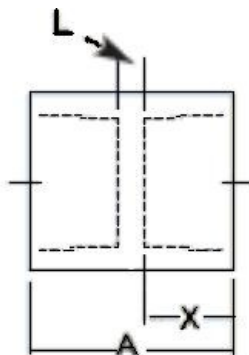
Description: Eccentric reducer
 Connection: cylindrical socket
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: Green Thread 175: 10 bar
 Green Thread 250: 18 bar



DN1	DN2	L [mm]	A1 [mm]	X1 [mm]	X2 [mm]	Weight ca.[kg]	A1 [mm]	X1 [mm]	X2 [mm]	Weight ca.[kg]
40	25	37	97	32	29	0,5	97	32	29	0,5
50	40	44	711	46	32	0,5	711	46	32	0,5
50	25	70	144	46	29	0,5	144	46	29	0,5
80	50	64	156	46	46	0,5	156	46	46	0,5
80	40	95	173	46	32	0,5	173	46	32	0,5
100	80	64	156	46	46	1	156	46	46	1
100	50	64	156	46	46	1	156	46	46	1
150	100	121	230	64	46	2	230	64	46	2
150	80	130	240	64	46	2	240	64	46	2
200	150	162	302	76	64	3	302	76	64	3
200	100	164	286	76	46	4	286	76	46	4
250	200	159	337	102	76	5	337	102	76	5
250	150	175	340	102	64	6	340	102	64	6
300	250	184	387	102	102	7	387	102	102	7
300	200	197	375	102	76	8	375	102	76	8
350	300	287	535	146	102	11	573	184	102	13
350	250	300	549	146	102	12	586	184	102	14
400	350	395	700	159	146	20	789	210	184	22
400	300	330	591	159	102	20	641	210	102	22
450	400	394	733	181	159	26	835	232	210	30
450	350	410	737	181	146	25	826	232	184	28
500	450	406	791	203	181	32	892	254	232	40
500	400	410	772	203	159	30	873	254	210	37
600	500	686	1124	235	203	73	1245	305	254	90
600	450	489	905	235	181	59	1026	305	232	68

Coupling

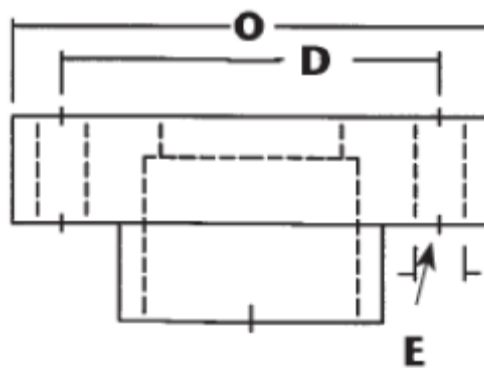
Description: Coupling
 Connection: cylindrical socket
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: Green Thread 175: 10 bar
 Green Thread 250: 18 bar



DN	L [mm]	Green Thread 175			Green Thread 250		
		A [mm]	X [mm]	Weight ca.[kg]	A [mm]	X [mm]	Weight ca.[kg]
25	6	64	29	0,1	64	29	0,1
40	6	70	32	0,2	70	32	0,2
50	10	102	46	0,5	102	46	0,5
80	10	102	46	0,5	102	46	0,5
100	10	102	46	0,5	102	46	0,5
150	13	140	64	1	140	64	1
200	13	165	76	2,3	165	76	2,3
250	13	216	102	2,7	216	102	2,7
300	13	216	102	3,2	216	102	3,2
350	114	406	146	7	483	184	11
400	114	432	159	12	533	210	16
450	127	489	181	16	891	232	23
500	127	533	203	22	635	254	31
600	178	658	235	35	787	305	49

Fix flange

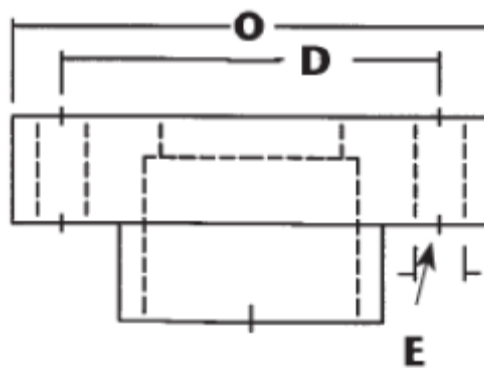
Description: Fix flange
 Connection: DIN/ISO 2501
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: PN 6, PN 10



DN	PN 6				PN 10			
	O [mm]	D [mm]	E [mm]	No.	O [mm]	D [mm]	E [mm]	No.
25	100	75	11	4	115	85	14	4
40	130	100	14	4	150	110	18	4
50	140	110	14	4	165	125	18	4
80	190	150	18	4	200	160	18	8
100	210	170	18	4	220	180	18	8
150	265	225	18	8	285	240	22	8
200	320	280	18	8	340	295	22	8
250	375	335	18	12	395	350	22	12
300	440	389	22	12	445	400	22	12
350	490	445	22	12	505	460	22	16
400	450	495	22	16	565	545	26	16
450	595	550	22	16	615	565	26	20
500	645	600	22	20	670	620	26	20
600	755	705	26	20	780	725	30	20

Fix flange

Description: Fix flange
 Connection: DIN/ISO 2501
 System: Green Thread Marine
 Diameter: DN 25 - 600
 Pressure class: PN 6, PN 10



DN	PN 16				PN 25			
	O [mm]	D [mm]	E [mm]	No.	O [mm]	D [mm]	E [mm]	No.
25	115	85	14	4	115	85	14	4
40	150	110	18	4	150	110	18	4
50	165	125	18	4	165	125	18	4
80	200	160	18	8	200	160	18	8
100	220	180	18	8	235	190	22	8
150	285	240	22	8	300	250	26	8
200	340	295	22	12	360	310	26	12
250	405	355	26	12	425	370	30	12
300	460	410	26	12	485	430	30	16
350	520	470	26	16	555	490	33	16
400	580	525	30	16	620	550	36	16
450	640	585	30	20	670	600	36	20
500	715	650	33	20	730	660	36	20
600	840	770	36	20	845	770	39	20

Physical properties of filament wound epoxy pipes:

	Temperature 24 °C	Temperature 93 °C
	MPa	MPa
Axial Tensile – ASTM D 2105		
Ultimate Stress	71	52,9
Design Stress	17,8	13,2
Modulus of Elasticity	12411	7997
Poisson's Ratio	0,38	
Axial Compression - ASTM D 695		
Ultimate Stress	230	140,5
Design Stress	57,4	35,1
Modulus of Elasticity	8687	4550
Beam Bending - ASTM D 790		
Ultimate Stress	159	118,3
Design Stress	20	14,8
Modulus of Elasticity	15031	8894
Hydrostatic burst - ASTM 1599		
Ultimate Hoop Tensile Stress	319	330
Hydrostatic Design - ASTM 2992		
Procedure A – Hoop tensile Stress Cyclic 150x10 ⁵ Cycles	61	41,9
Procedure B – Hoop tensile Stress Static 20 Year @ 24 °C		101
Coefficient of linear Thermal expansion - ASTM D 696	$2,27 \times 10^{-5}$ mm/mm/°C	
Specific Gravity	1,8	
Hazen-Williams Factor	150	
Thermal Conductivity	0,4 W/(m)(°C)	

Span supports in m at different temperatures

	24 °C		93 °C	
	Green Thread 175	Green Thread 250	Green Thread 175	Green Thread 250
DN 25	3,9 m	3,9 m	3,4 m	3,4 m
DN 40	4,6 m	4,6 m	4,1 m	4,1 m
DN 50	5,0 m	5,0 m	4,3 m	4,3 m
DN 80	5,7 m	5,7 m	5,0 m	5,0 m
DN 100	6,1 m	6,1 m	5,3 m	5,3 m
DN 150	7,0 m	7,0 m	6,2 m	6,2 m
DN 200	7,7 m	8,1 m	6,8 m	7,1 m
DN 250	8,5 m	9,0 m	7,5 m	7,9 m
DN 300	9,2 m	9,8 m	8,1 m	8,6 m
DN 350	9,8 m	10,4 m	8,6 m	9,1 m
DN 400	10,4 m	11,1 m	9,1 m	9,7 m
DN 450	10,9 m	11,7 m	9,6 m	10,2 m
DN 500	11,5 m	12,3 m	10,1 m	10,8 m
DN 600	12,6 m	13,5 m	11,0 m	11,8 m

Density in Kg/m³	2000	1500	1250	1000	750
Correction factor	0,84	0,90	0,95	1	1,07

Example: Density =1500 DN 100 24 °C Green Thread 175 results 6,14 m x 0,93 = 5,67 m span.