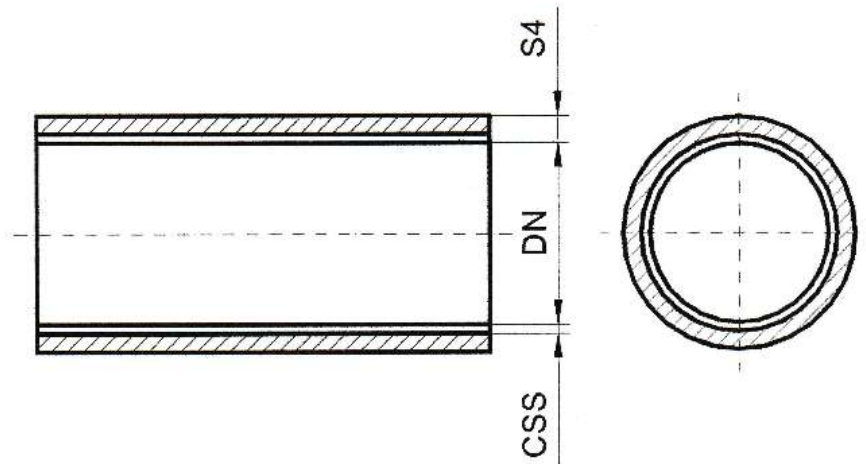
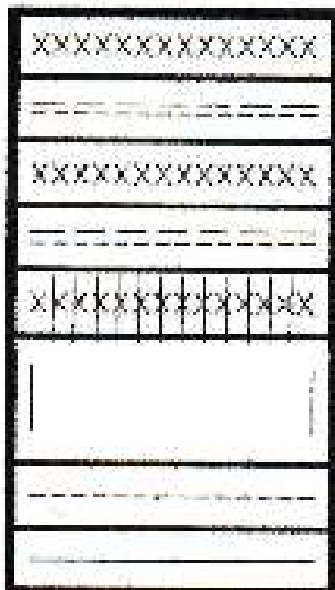


WALL THICKNESS PIPES



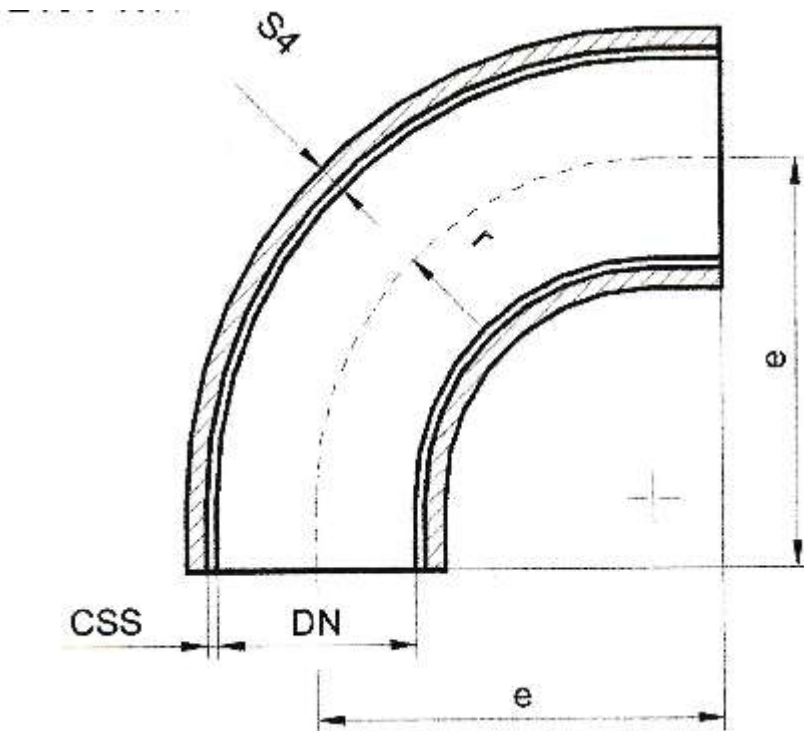
CSS = 2,5 mm
 $A \cdot S = 6$
 $\delta = 165 \text{ N/mm}^2$

DN [mm]	PN2,5 [bar]	PN4 [bar]	PN6 [bar]	PN10 [bar]	PN16 [bar]	PN25 [bar]
25	5,0	5,0	5,0	5,0	5,0	5,0
32	5,0	5,0	5,0	5,0	5,0	5,0
40	5,0	5,0	5,0	5,0	5,0	5,0
50	5,0	5,0	5,0	5,0	5,0	5,3
65	5,0	5,0	5,0	5,0	5,0	6,0
80	5,0	5,0	5,0	5,0	5,1	6,8
100	5,0	5,0	5,0	5,0	5,7	7,8
125	5,0	5,0	5,0	5,0	6,5	9,0
150	5,0	5,0	5,0	5,4	7,3	10,3
200	5,0	5,0	5,0	6,4	8,8	12,8
250	5,0	5,0	5,3	7,3	10,4	15,3
300	5,0	5,0	5,9	8,3	11,9	17,8
350	5,0	5,1	6,5	9,2	13,5	20,3
400	5,0	5,5	7,0	10,1	15,0	22,8
450	5,0	5,9	7,6	11,1	16,6	25,3
500	5,0	6,2	8,1	12,0	18,1	27,8
600	5,3	7,0	9,3	13,9	21,2	
712	5,8	7,8	10,5	16,0	24,7	
800	6,2	8,4	11,5	17,7	27,4	
900	6,7	9,2	12,6	19,6	30,5	
1000	7,1	9,9	13,7	21,5	33,5	



MAT 450
 ROWING E-GLAS 580
 MAT 450
 ROWING E-GLAS 580
 MAT 450
 .
 .
 .
 ROWING C-GLAS 30
 RESIN

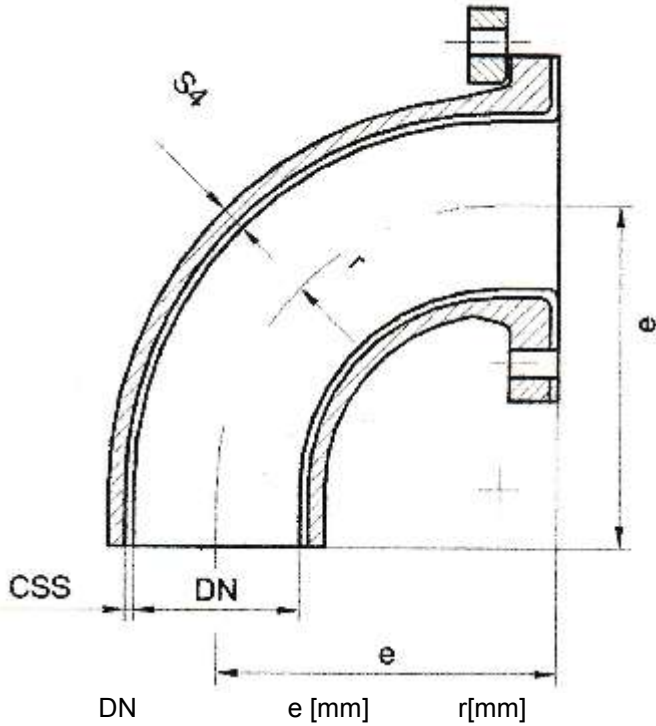
ELBOWS



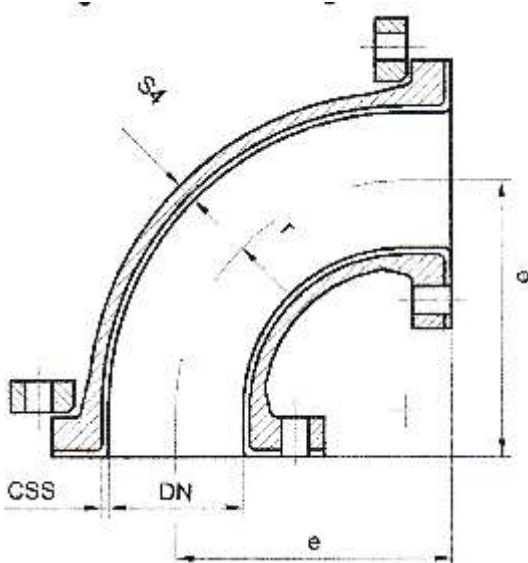
DN	e [mm]	r[mm]
25	110	80
32	130	100
40	150	120
50	180	165
65	140	125
80	165	125
100	205	170
125	245	210
150	285	215
200	365	320
250	450	390
300	525	440
350	600	600
400	680	670
450	820	620
500	830	650
600	950	720
712	1070	1000
800	1250	1200
900	1330	1230
1000	1500	1500
1600	1900	1900

Dimensions different than DIN

S4 ACCORDING TO PIPE THICKNESS



Flanges according to FLANGES DIMENSIONS S4 ACCORDING TO PIPE THICKNESS



25	110	80
32	130	100
40	150	120
50	180	165
65	140	125
80	165	125
100	205	170
125	245	210
150	285	215
200	365	320
250	450	390
300	525	440
350	600	600
400	680	670
450	820	620
500	830	650
600	950	720
712	1070	1000
800	1250	1200
900	1330	1230
1000	1500	1500
1600	1900	1900

25	110	80
32	130	100
40	150	120
50	180	165
65	140	125
80	165	125
100	205	170
125	245	210
150	285	215
200	365	320
250	450	390
300	525	440
350	600	600
400	680	670
450	820	620
500	830	650
600	950	720
712	1070	1000
800	1250	1200
900	1330	1230
1000	1500	1500
1600	1900	1900

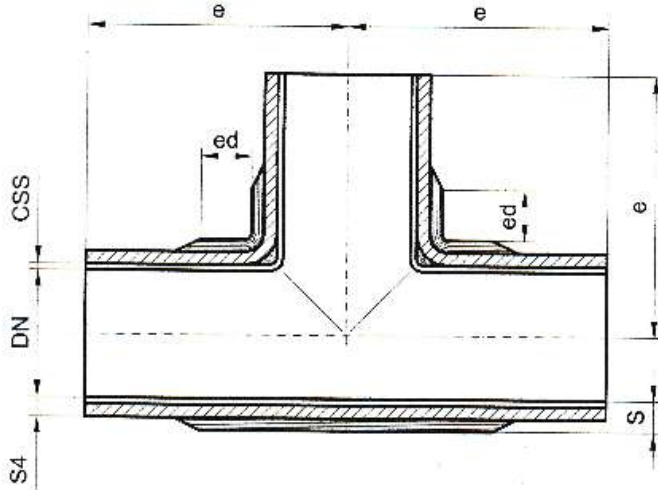
Dimensions different than DIN

TEE

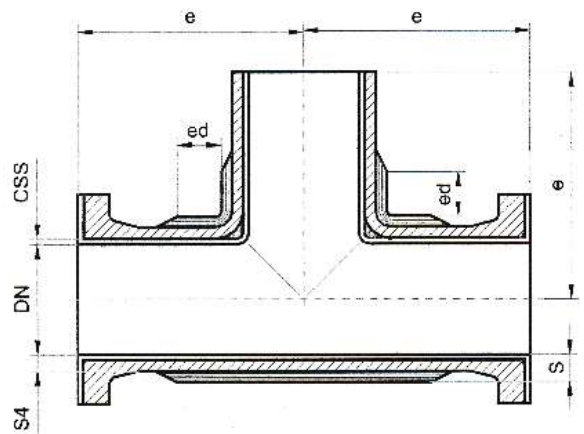
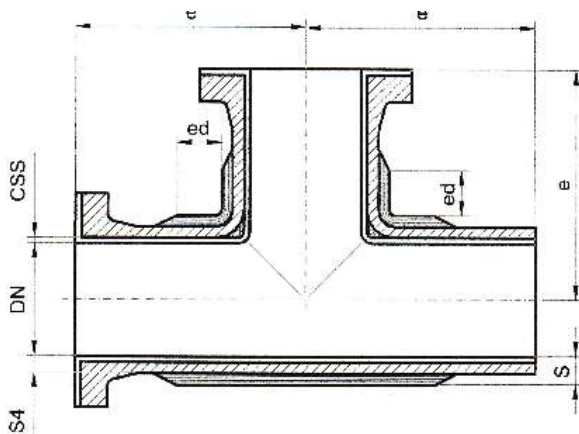
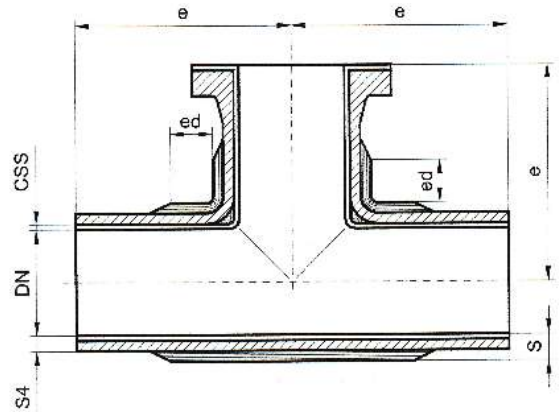
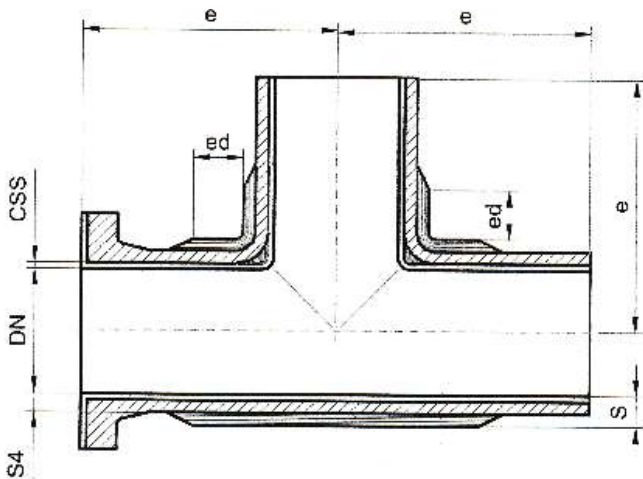
WALL THICKNESS S [mm] = (PIPE THICKNESS x 1,5) + CSS S4 ACCORDING TO PIPE THICKNESS

WALL THICKNESS $CSS=S$ [mm]

Flanges according to FLANGES DIMENSSIONS



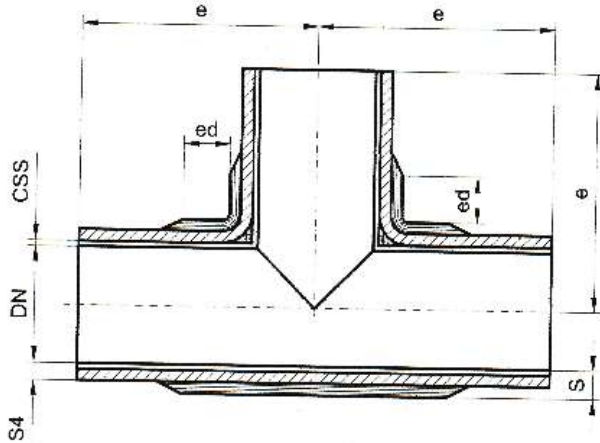
PN	2,5	4	6	10	16	e	ed
DN	[bar]	[bar]	[bar]	[bar]	[bar]	[mm]	[mm]
25	6,25	6,25	6,25	6,25	6,25	110	50
32	6,25	6,25	6,25	6,25	6,25	130	50
40	6,25	6,25	6,25	6,25	6,25	150	50
50	6,25	6,25	6,25	6,25	6,25	180	50
65	6,25	6,25	6,25	6,25	6,25	140	50
80	6,25	6,25	6,25	6,25	6,4	165	50
100	6,25	6,25	6,25	6,25	7,3	205	50
125	6,25	6,25	6,25	6,25	8,35	245	70
150	6,25	6,25	6,25	6,85	9,55	285	70
200	6,25	6,25	6,25	8,2	11,8	365	70
250	6,25	6,25	6,7	9,55	14,1	450	120
300	6,25	6,25	7,45	10,9	16,3	525	120
350	6,25	6,4	8,35	12,55	18,55	600	120
400	6,25	6,85	9,1	13,75	20,8	680	120



TEE DN450-DN1000

WALL THICKNESS S [mm] = (PIPE THICKNESS x 1,5) + CSS

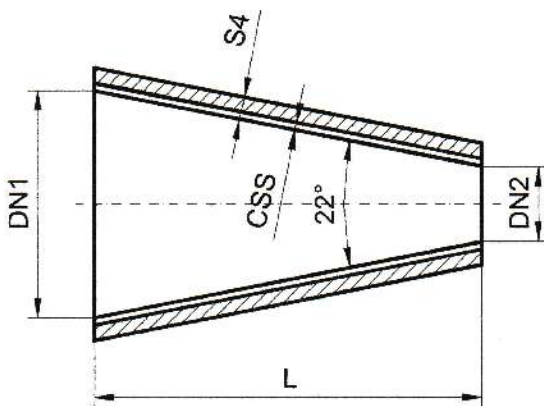
S4 ACCORDING TO PIPES THICKNESS



PN DN	2,5 [bar]	4 [bar]	6 [bar]	10 [bar]	16 [bar]	e [mm]	ed [mm]
450	6,25	7,45	10,00	15,10	23,05	600	120
500	6,25	8,05	10,75	16,45	25,30	650	120
600	6,55	9,10	12,40	19,15		750	140
712	7,30	10,15	14,05	21,85		850	160
800	7,90	11,20	15,70	24,70		950	180
900	8,65	12,25	17,20	27,40		1050	200
1000	9,25	13,30	18,85	30,10		1150	220

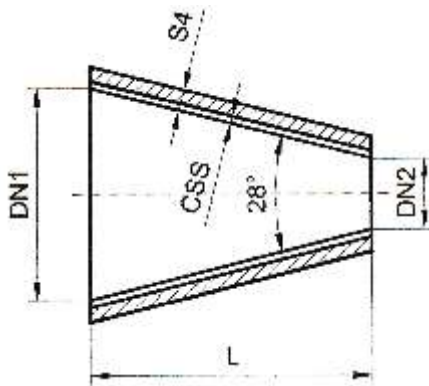
REDUCTION ~22°

S4 ACCORDING TO PIPE THICKNESS



DN1	DN2	L[mm]	DN1	DN2	L[mm]
32	25	18	200	100	257
			200	125	193
			200	150	129
			250	125	322
40	25	39	250	150	257
40	32	21	250	200	129
50	25	64	300	150	386
50	32	46	300	200	257
50	40	26	300	250	129
65	32	85	350	200	386
65	40	64	350	250	257
65	50	39	350	300	129
80	40	103	400	250	386
80	50	77	400	300	257
80	65	39	400	350	129
100	50	129	450	300	386
100	65	90	450	350	257
100	80	51	450	400	129
125	65	154	500	350	386
125	80	116	500	400	257
125	100	64	500	450	129
150	80	180	600	400	514
150	100	129	600	450	386
150	125	64	600	500	257

REDUCTION ~28°



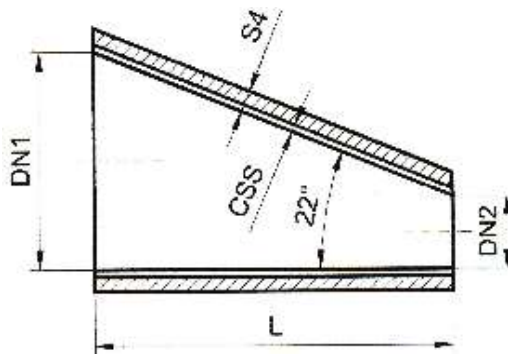
S4 ACCORDING TO PIPE THICKNESS

DN1 DN2 L[mm] DN1 DN2 L[mm]

32	25	14
40	25	30
40	32	16
50	25	50
50	32	36
50	40	20
65	32	66
65	40	50
65	50	30
80	40	80
80	50	60
80	65	30
100	50	100
100	65	70
100	80	40
125	65	120
125	80	90
125	100	50
150	80	140
150	100	100
150	125	50
200	100	201
200	125	150
200	150	100
250	125	251
250	150	201
250	200	100

300	150	301
300	200	201
300	250	100
350	200	301
350	250	201
350	300	100
400	250	301
400	300	201
400	350	100
450	300	301
450	350	201
450	400	100
500	350	301
500	400	201
500	450	100
600	400	401
600	450	301
600	500	201
712	450	525
712	500	425
712	600	225
800	500	602
800	600	401
800	712	176
900	600	602
900	712	377
900	800	201
1000	712	578
1000	800	401
1000	900	201
1100	800	602
1100	900	401
1100	1000	201
1200	900	602
1200	1000	401
1200	1100	201
1300	1000	602
1300	1100	401
1300	1200	201

REDUCTION ~22°



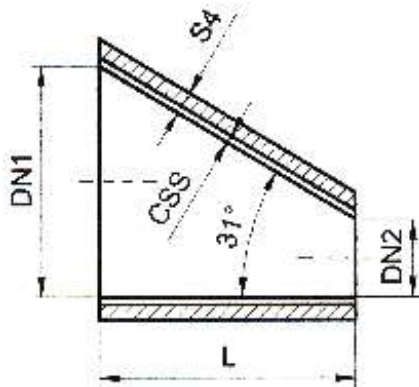
S4 ACCORDING TO PIPE THICKNESS

DN1 DN2 L[mm] DN1 DN2 L[mm]

50	40	25
65	40	62
65	50	37
80	40	99
80	50	74
80	65	37
100	50	124
100	65	87
100	80	50
125	65	149
125	80	111
125	100	62
150	80	173
150	100	124
150	125	62
200	100	248
200	125	186
200	150	124
250	125	309
250	150	248
250	200	124
300	150	371
300	200	248
300	250	124

350	200	371
350	250	248
350	300	124
400	250	371
400	300	248
400	350	124
450	300	371
450	350	248
450	400	124
500	350	371
500	400	248
500	450	124
600	400	495
600	450	371
600	500	248
712	450	648
712	500	525
712	600	277
800	500	743
800	600	495
800	712	218
900	600	743
900	712	465
900	800	248
1000	712	713
1000	800	495
1000	900	248

REDUCTION ~31°

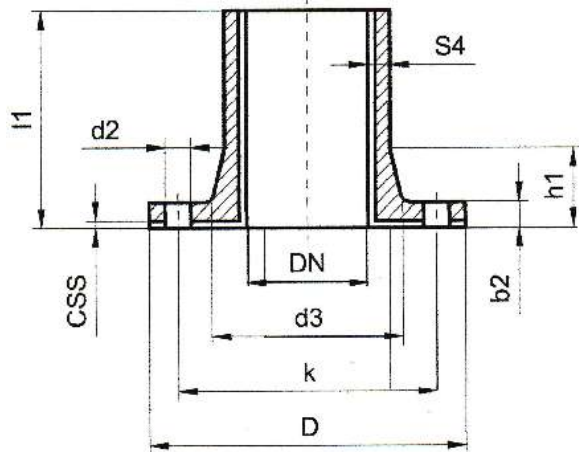


DN1 DN2 L[mm]

32	25	12
40	25	25
40	32	13
50	25	42
50	32	30
50	40	17
65	32	55
65	40	42
65	50	25
80	40	67
80	50	50
80	65	25

100	50	83
100	65	58
100	80	33
125	65	100
125	80	75
125	100	42
150	80	116
150	100	83
150	125	42
200	100	166
200	125	125
200	150	83
250	125	208
250	150	166
250	200	83

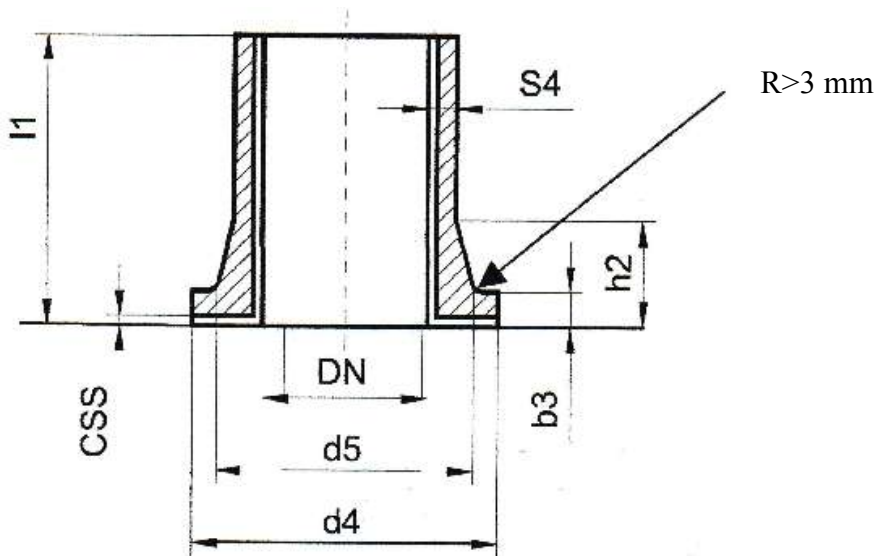
FIXED FLANGES FF
S4 ACCORDING TO PIPE THICKNESS



DN [mm]	I ₁ [mm]	D [mm]	d ₃ [mm]	d ₂ [mm]	k [mm]	h ₁ [mm]	PN2,5	PN4	PN6	PN10	PN16
							b ₂ [mm]	b ₂ [mm]	b ₂ [mm]	b ₂ [mm]	b ₂ [mm]
25	150	115	50	14	85	30	14	14	14	14	17
32	150	140	58	18	100	32	16	16	16	16	20
40	150	150	68	18	110	35	17	17	17	17	20
50	150	165	82	18	125	40	17	17	17	17	21
65	150	185	95	18	145	44	17	17	17	19	23
80	150	200	111	18	160	48	17	17	17	19	24
100	150	220	133	18	180	55	17	17	17	20	24
125	200	250	160	18	210	64	17	17	17	21	27
150	200	285	188	18	240	71	17	17	19	23	30
200	200	340	245	22	295	85	17	17	19	24	36
250	250	395	300	22	350	101	17	17	21	28	42
300	250	445	350	22	400	116	17	18	21	34	49
350	300	505	410	22	460	133	17	19	23	34	56
400	300	565	460	26	515	147	17	21	25	42	63
450	350	615	511	26	565	120	17	21	25	44	69
500	350	670	565	26	620	178	18	22	26	52	76
600	400	780	660	30	725	132	20	24	36	66	91
712	450	895	780	30	840	146	21	26	45	77	106
800	450	1015	875	33	950	168	23	29	39	81	115
900	450	1115	980	33	1050	178	24	30	51	92	129
1000	450	1230	1080	36	1160	194	26	32	57	102	142

Dimensions different than DIN

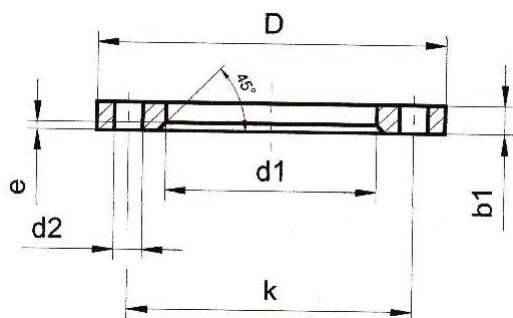
LOOSE FLANGES LF
S4 ACCORDING TO PIPE THICKNESS



DN [mm]	d ₄ [mm]	d ₅ [mm]	l ₁ [mm]	h ₂ [mm]	PN2,5	PN4	PN6	PN10	PN16
					b ₃ [mm]	b ₃ [mm]	b ₃ [mm]	b ₃ [mm]	b ₃ [mm]
25	68	50	150	30	12	12	12	12	12
32	78	58	150	32	14	14	14	14	14
40	88	68	150	35	14	14	14	14	14
50	102	82	150	40	14	14	14	14	14
65	122	95	150	44	14	14	14	14	14
80	138	111	150	48	14	14	14	14	14
100	158	133	150	55	15	15	15	15	15
125	188	160	200	64	15	15	15	16	18
150	212	188	200	71	15	15	15	17	18
200	268	237	200	85	15	15	15	18	30
250	320	293	250	101	15	15	15	19	32
300	370	343	250	116	15	15	15	20	40
350	430	387	300	133	15	15	22	40	56
400	482	441	300	147	15	15	21	43	61
450	538	499	350	160	15	15	21	43	64
500	585	544	350	178	15	15	28	53	73
600	685	648	400	209	15	15	30	60	83
712	800	758	450	243	15	18	48	75	98
800	905	858	450	271	15	17	44	80	109
900	1005	960	450	302	15	18	51	89	120
1000	1110	1060	450	332	16	20	64	102	133

Dimensions different than DIN

FRP rings for LF



DN	D	k	d1	d2	e	holes	bolt	b1
25	115	85	50,5	14	3,5	4	M 12	16
32	140	100	58,5	18	3,5	4	M 16	16
40	150	110	68,5	18	3,5	4	M 16	16
50	165	125	82,5	18	3,5	4	M 16	16
65	185	145	95,5	18	3,5	4	M 16	16
80	200	160	111,5	18	3,5	8	M 16	18
100	220	180	133,5	18	4,5	8	M 16	18
125	250	210	160,5	18	4,5	8	M 16	18
150	285	240	188,5	22	4,5	8	M 20	18
200	340	295	238	22	6	8	M 20	20
250	395	350	294	22	6	12	M 20	22
300	445	400	344	22	6	12	M 20	26
350	505	460	388	22	7	16	M 20	28
400	565	515	442	26	7	16	M 24	32
450	615	565	500	26	7	20	M 24	35
500	670	620	545	26	7	20	M 24	38
600	780	725	650	30	8	20	M 27	36
712	895	840	765	30	8	24	M 27	40
800	1015	950	860	33	8	24	M 30	44
900	1115	1050	962	33	8	28	M 30	48
1000	1230	1160	1062	36	8	28	M 33	52