Thrust Block Area Calculations — 4-INCH PIPE

1. Min. Soil Bearing Capacity (PSF) = 1500 2. Min. Working Pressure (PSI) = 200

THRUST FROM NFPA 24 TABLE A-8-6.2 A BEND FOR:

DEAD END =	1,810	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	1,810	=	3,620	LB	
Ab =	T/Sb	=	3,620 / 1,500	=	2.41	S.F.	
Ab*S.F. =	2.41	X	1.5	=	3.62	S.F.	USE 2' WIDE X 2' HIGH THRUST BLOCK

90° BEND =	2,559	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	2,559	=	5,118	LB	
Ab =	T/Sb	=	5,118 / 1,500	=	3.41	S.F.	
Ab*S.F. =	3.41	X	1.5	=	5.12	S.F.	USE 2.5' WIDE X 2.5' HIGH THRUST BLOCK

45° BEND =	1,385	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	1,385	=	2,770	LB	
Ab =	T/Sb	=	2,770 / 1,500	=	1.85	S.F.	
Ab*S.F. =	1.85	X	1.5	=	2.77	S.F.	USE 2' WIDE X 1.5' HIGH THRUST BLOCK

22 1/2° BEND =	706	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	706	=	1,412	LB	
Ab =	T/Sb	=	1,412 / 1,500	=	0.94	S.F.	
Ab*S.F. =	0.94	X	1.5	=	1.41	S.F.	USE 1.5' WIDE X 1' HIGH THRUST BLOCK

11 1/4° BEND =	355	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	355	=	710	LB	
Ab =	T/Sb	=	710 / 1,500	=	0.47	S.F.	
Ab*S.F. =	0.47	X	1.5	=	0.71	S.F.	USE 1' WIDE X 1' HIGH THRUST BLOCK

Thrust Block Area Calculations — 6-INCH PIPE

1. Min. Soil Bearing Capacity (PSF) = 1500 2. Min. Working Pressure (PSI) = 200

THRUST FROM NFPA 24 TABLE A-8-6.2 A BEND FOR:

DEAD END =	3,739	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	3,739	=	7,478	LB	
Ab =	T/Sb	=	7,478 / 1,500	=	4.99	S.F.	
Ab*S.F. =	4.99	X	1.5	=	7.48	S.F.	USE 3' WIDE X 2.5' HIGH THRUST BLOCK
90° BEND =	5,288	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	5,288	=	10,576	LB	
Ab =	T/Sb	=	10,576 / 1,500	=	7.05	S.F.	
Ab*S.F. =	7.05	X	1.5	=	10.58	S.F.	USE 4' WIDE X 3' HIGH THRUST BLOCK
45° BEND =	2,862	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	2,862	=	5,724	LB	
Ab =	T/Sb	=	5,724 / 1,500	=	3.82	S.F.	
Ab*S.F. =	3.82	X	1.5	=	5.72	S.F.	USE 2.5' WIDE X 2.5' HIGH THRUST BLOCK
22 1/2° BEND =	1,459	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	1,459	=	2,918	LB	
Ab =	T/Sb	=	2,918 / 1,500	=	1.95	S.F.	
Ab*S.F. =	1.95	X	1.5	=	2.92	S.F.	USE 2' WIDE X 1.5' HIGH THRUST BLOCK
11 1/4° BEND =	733	LB	@ 100 PSI				
FOR 150 PSI =	200 / 100	*	733	=	1,466	LB	
Ab =	T/Sb	=	1,466 / 1,500	=	0.98	S.F.	
Ab*S.F. =	0.98	X	1.5	=	1.47	S.F.	USE 1' WIDE X 1.5' HIGH THRUST BLOCK

Thrust Block Area Calculations — 8-INCH PIPE

1. Min. Soil Bearing Capacity (PSF) = 1500 2. Min. Working Pressure (PSI) = 200

THRUST FROM NFPA 24 TABLE A-8-6.2 A BEND FOR:

DEAD END =	6,433	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	6,433	=	12,866	LB	
Ab =	T/Sb	=	12,866 / 1,500	=	8.58	S.F.	
Ab*S.F. =	8.58	X	1.5	=	12.87	S.F.	USE 4' WIDE X 3.5' HIGH THRUST BLOCK

90° BEND =	9,097	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	9,097	=	18,194	LB	
Ab =	T/Sb	=	18,194 / 1,500	=	12.13	S.F.	
Ab*S.F. =	12.13	X	1.5	=	18.19	S.F.	USE 5' WIDE X 4' HIGH THRUST BLOCK

45° BEND =	4,923	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	4,923	=	9,846	LB	
Ab =	T/Sb	=	9,846 / 1,500	=	6.56	S.F.	
Ab*S.F. =	6.56	X	1.5	=	9.85	S.F.	USE 3.5' WIDE X 3' HIGH THRUST BLOCK

22 1/2° BEND =	2,510	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	2,510	=	5,020	LB	
Ab =	T/Sb	=	5,020 / 1,500	=	3.35	S.F.	
Ab*S.F. =	3.35	X	1.5	=	5.02	S.F.	USE 3' WIDE X 2' HIGH THRUST BLOCK

11 1/4° BEND =	1,261	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	1,261	=	2,522	LB	
Ab =	T/Sb	=	2,522 / 1,500	=	1.68	S.F.	
Ab*S.F. =	1.68	X	1.5	=	2.52	S.F.	USE 2' WIDE X 1.5' HIGH THRUST BLOCK

Thrust Block Area Calculations — 10-INCH PIPE

1. Min. Soil Bearing Capacity (PSF) = 1500 2. Min. Working Pressure (PSI) = 200

THRUST FROM NFPA 24 TABLE A-8-6.2 A BEND FOR:

DEAD END =	9,677	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	9,677	=	19,354	LB	
Ab =	T/Sb	=	19,354 / 1,500	=	12.90	S.F.	
Ab*S.F. =	12.90	X	1.5	=	19.35	S.F.	USE 5' WIDE X 4' HIGH THRUST BLOCK

90° BEND =	13,685	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	13,685	=	27,370	LB	
Ab =	T/Sb	=	27,370 / 1,500	=	18.25	S.F.	
Ab*S.F. =	18.25	X	1.5	=	27.37	S.F.	USE 5.5' WIDE X 5' HIGH THRUST BLOCK

45° BEND =	7,406	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	7,406	=	14,812	LB	
Ab =	T/Sb	=	14,812 / 1,500	=	9.87	S.F.	
Ab*S.F. =	9.87	X	1.5	=	14.81	S.F.	USE 4' WIDE X 4' HIGH THRUST BLOCK

22 1/2° BEND =	3,776	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	3,776	=	7,552	LB	
Ab =	T/Sb	=	7,552 / 1,500	=	5.03	S.F.	
Ab*S.F. =	5.03	X	1.5	=	7.55	S.F.	USE 3' WIDE X 3' HIGH THRUST BLOCK

11 1/4° BEND =	1,897	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	1,897	=	3,794	LB	
Ab =	T/Sb	=	3,794 / 1,500	=	2.53	S.F.	
Ab*S.F. =	2.53	X	1.5	=	3.79	S.F.	USE 2' WIDE X 2' HIGH THRUST BLOCK

Thrust Block Area Calculations — 12-INCH PIPE

1. Min. Soil Bearing Capacity (PSF) = 1500 2. Min. Working Pressure (PSI) = 200

THRUST FROM NFPA 24 TABLE A-8-6.2 A BEND FOR:

DEAD END =	13,685	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	13,685	=	27,370	LB	
Ab =	T/Sb	=	27,370 / 1,500	=	18.25	S.F.	
Ab*S.F. =	18.25	X	1.5	=	27.37	S.F.	USE 6' WIDE X 5' HIGH THRUST BLOCK

90° BEND =	19,353	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	19,353	=	38,706	LB	
Ab =	T/Sb	=	38,706 / 1,500	=	25.80	S.F.	
Ab*S.F. =	25.80	X	1.5	=	38.71	S.F.	USE 6' WIDE X 7' HIGH THRUST BLOCK

45° BEND =	10,474	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	10,474	=	20,948	LB	
Ab =	T/Sb	=	20,948 / 1,500	=	13.97	S.F.	
Ab*S.F. =	13.97	X	1.5	=	20.95	S.F.	USE 5' WIDE X 4.5' HIGH THRUST BLOCK

22 1/2° BEND =	5,340	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	5,340	=	10,680	LB	
Ab =	T/Sb	=	10,680 / 1,500	=	7.12	S.F.	
Ab*S.F. =	7.12	X	1.5	=	10.68	S.F.	USE 4' WIDE X 3' HIGH THRUST BLOCK

11 1/4° BEND =	2,683	LB	@ 100 PSI				
FOR 200 PSI =	200 / 100	*	2,683	=	5,366	LB	
Ab =	T/Sb	=	5,366 / 1,500	=	3.58	S.F.	
Ab*S.F. =	3.58	X	1.5	=	5.37	S.F.	USE 2.5' WIDE X 2.5' HIGH THRUST BLOCK