



**TYPE A RESTRAINT**  
FOR 11 1/4° - 22 1/2° VERTICAL BENDS

**TYPE B RESTRAINT**  
FOR 45° VERTICAL BENDS

~~TABLE OF DIMENSIONS~~

	VB		(S)	(d)	(L)
PIPE SIZE NOMIN. DIAMETER - INCH	VERTICAL BEND DEGREES	NO. OF CU FT. OF CONCRETE BLOCKING	SIDE OF CUBE FEET	DIAMETER OF SHACK OR REBAR RODS - INCH	DEPTH OF RODS IN CONCRETE FT.
4"	11 1/4°	8	2.0	5/8"	1.5
					2.0
6"	11 1/4°	8	2.0	5/8"	2.0
					2.0
					2.0
8"	11 1/4°	27	3.0	5/8"	2.0
	22 1/2°	64	4.0	5/8"	2.0
12"	11 1/4°	64	4.0	3/4"	2.0
	22 1/2°	125	5.0	3/4"	3.0
16"	11 1/4°	107	4.25	7/8"	3.0
	22 1/2°	216	6.0	7/8"	4.0
20"	11 1/4°	138	5.17	1"	3.5
	22 1/2°	334	6.94	1"	4.0
24"	11 1/4°	240	6.22	1"	4.0
	22 1/2°	476	7.81	1"	4.0
30"	11 1/4°	369	7.17	1"	4.0
	22 1/2°	733	9.02	1"	4.0

USE ENGINEERS CALCULATIONS

~~TABLE OF DIMENSIONS~~

	VB		(S)	(d)	(L)
PIPE SIZE NOMIN. DIAMETER - INCH	VERTICAL BEND DEGREES	NO. OF CU YD. OF CONCRETE BLOCKING	SIDE OF CUBE FEET	DIAMETER OF SHACK OR REBAR RODS - INCH	DEPTH OF RODS IN CONCRETE IN FEET
4"	45°	3.0	3.0	5/8"	2.0
					2.0
6"	45°	3.0	3.0	5/8"	2.5
					2.5
8"	45°	3.97	4.75	5/8"	2.0
				5/8"	2.0
12"	45°	9.04	6.25	5/8"	4.0
				5/8"	4.0
16"	45°	17.24	7.75	3/4"	4.0
				3/4"	4.0
20"	45°	26.52	92.17	3/4"	4.0
				3/4"	4.0
24"	45°	37.82	10.07	3/4"	4.0
				3/4"	4.0
30"	45°	58.26	11.63	3/4"	4.0
				3/4"	4.0

USE ENGINEERS CALCULATIONS