

**RESTRAINED PIPE TABLE  
FORCE MAINS**

MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)						
TYPE	PIPE SIZE					
	4"	6"	8"	10"	12"	16"
90° BEND	11	16	20	24	28	36
45° BEND	5	7	9	10	11	15
22-1/2° BEND	3	4	4	5	6	8
11-1/4° BEND	2	2	2	3	3	4
PLUG, BRANCH OF TEE, VALVE	25	35	45	54	64	82

**NOTES:**

1. FITTINGS SHALL BE RESTRAINED JOINTS.
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
3. WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS GREATEST LENGTH OF RESTRAINED PIPE.
4. ALL LINE VALVES AND THROUGH RUN OF TEES SHALL BE RESTRAINED.
5. LENGTHS SHOWN IN THE TABLE HAVE BEEN CALCULATED USING THE EBAA IRON RESTRAINT LENGTH CALCULATOR WITH THE FOLLOWING ASSUMPTIONS:  
 WORKING PRESSURE: 70 PSI  
 SOIL DESIGNATION: SM (SAND SILT)  
 SAFETY FACTOR: 2.0 TO 1  
 TRENCH TYPE 3  
 DEPTH OF BURY 3 FT
6. TABLE IS FOR PVC ONLY. RESTRAINED LENGTH FOR ALTERNATE MATERIALS WILL NEED TO BE SUBMITTED TO THE ENGINEERING DIVISION FOR APPROVAL.



**CITY OF COCOA**  
 Brevard County, Florida  
 UTILITIES DEPARTMENT  
 ENGINEERING DIVISION

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DRAWN BY: P. DAVIS	SCALE: NOT TO SCALE
CHECKED BY: K. JOSEPH	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: RESTRAINED PIPE TABLE FORCE MAINS	