



L = Minimum length to be restrained on each side of fitting (ft.)  
 Figures based on 30" bury depth, 150 PSI test pressure  
 Figures apply to poly wrapped pipe

N.T.S.

NOM. PIPE SIZE	ELBOWS (deg.)				VALVES TEES	DEAD END
	11.25	22.50	45	90		
LENGTH IN FEET (L)						
4"	22	22	22	42	50	50
6"	22	22	25	50	67	67
8"	22	22	35	60	85	85
12"	22	22	42	100	125	125
16"	22	30	55	130	150	150
20"	22	33	65	150	160	160

The following joints must be restrained in all applications:

1. Bend – inlet and outlet
2. Tee – inlet and outlets
3. Offsets – inlet and outlet
4. Caps
5. Plugs
6. Dead ends
7. Hydrant runouts shall be restrained as dead ends

NOTES:

1. Water mains larger than 8" will be ductile iron pipe only.
2. Thrust restraint on slipjoint ductile iron pipe shall be U.S. Pipe Field Lock Gaskets for Tyton Joint Pipe or American Fast-Grip Gaskets for American Fastite Pipe, witnessed by Construction Inspector.
3. Thrust restraints on slip joint PVC pipe shall be EBBA iron 1500 Series restrainers, or approved equal.
4. Thrust restraint on Ductile Iron Fittings shall be provided by the use of Megalug Retainers and mechanical joint fittings.
5. No thrust blocks allowed.
6. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP
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**CITY OF CLEARWATER**  
 ENGINEERING DEPARTMENT  
**POTABLE WATER  
 DETAILS**

**RESTRAINED JOINT DETAIL  
 (PVC & DIP)**

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