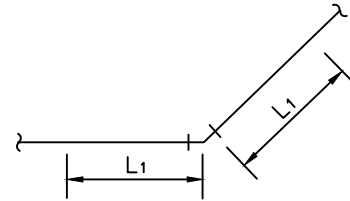
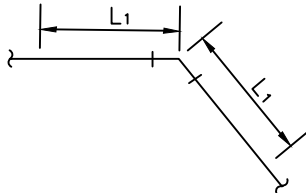


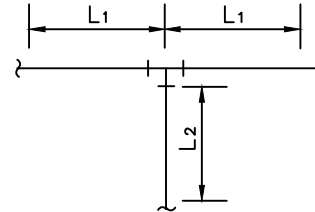
HORIZONTAL BEND



VERTICAL UP BEND

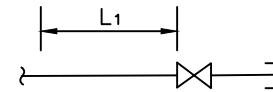


VERTICAL DOWN BEND

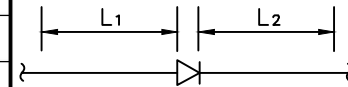


TEE

	MINIMUM RESTRAINT LENGTH	
	L ₁ (ft)	L ₂ (ft)
11.25° HORIZONTAL BEND	2.6	
22.5° HORIZONTAL BEND	5.2	
45° HORIZONTAL BEND	10.9	
11.25° VERTICAL UP BEND	2.6	
22.5° VERTICAL UP BEND	5.2	
45° VERTICAL UP BEND	10.9	
11.25° VERTICAL DOWN BEND	7.2	
22.5° VERTICAL DOWN BEND	14.6	
45° VERTICAL DOWN BEND	30.5	
TEE	18	0
DEAD END	73.5	
REDUCER	110.3	55.6



DEAD END



REDUCER

NOTES:

1. RESTRAINT REQUIREMENTS ARE APPLICABLE TO FITTINGS 12" AND SMALLER.
2. RESTRAINT REQUIREMENTS FOR ANY FITTINGS LOCATED WITH LESS SEPARATION THAN THE SUM OF THEIR MINIMUM RESTRAINT LENGTHS MUST BE EVALUATED ON A CASE BY CASE BASIS. RESTRAINT LENGTHS WILL BE PROVIDED AFTER THE LAYOUT IS FINALIZED.
3. FOR DEAD ENDS, END CAP SHALL BE RESTAINED TO VALVE. MINIMUM RESTRAINT LENGTH STARTS AT VALVE.