



CITY OF NORTH LAS VEGAS UTILITIES DEPARTMENT



Mechanical Joint Restraint Length Calculations

Note: Please click on each slide to move forward.



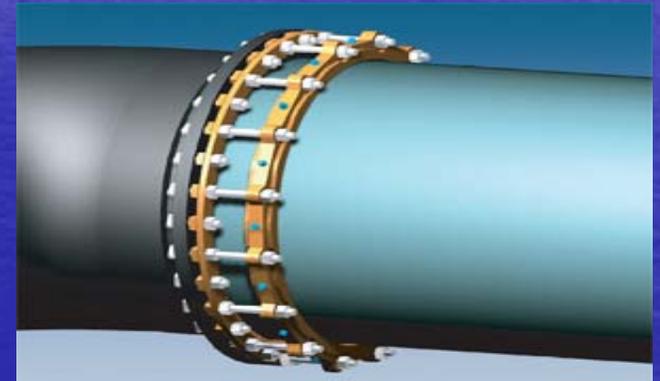
SOURCES OF RESTRAINT LENGTH CALCULATIONS

* EBAA IRON PROGRAM

<http://www.ebaa.com>

* Ductile Iron Pipe Research Association (DIPRA)

<http://www.dipra.org>





Mechanical Joint Restraint Length Calculations

Pipe Materials	:	Refer to civil improvement plans.
Soil Type	:	If soil type is unknown (no geo-tech report), use SC (clayey sands, sand-clay mixtures) for EBAA Iron or sand silt for DIPRA. If soil type is known (with geo-tech report), use soil type called out in the report and submit report along with restraint calculations.
Safety Factor	:	1.5 to 1
Trench Type	:	5
Depth of Bury	:	Refer to depth of cover
Test Pressure	:	200 psi





Mechanical Restraint Calculations (cont'd)

NOTES:

- * Restraint Calculations are required for pipes 12" in diameter and larger. Compute for all fittings (valves, tees, bends, dip sections, etc), unless otherwise required by the Utilities Department.
- * Length of pipe to be restrained (from station to station) must be depicted on the plans.
- * Calculations to be stamped by P.E.





EBAA IRON RESTRAINT PROGRAM

<http://www.ebaa.com>

http://rcp.ebaa.com - Retrained Length Calculator, Version 5 (Web Edition) - Microsoft Internet Explorer provid...

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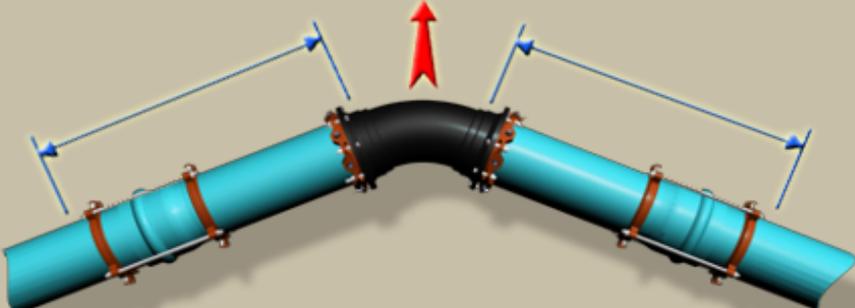
Project Name

Item 1 of 1

Site Location

Pipe Material PVC
Soil Type SC
Safety Factor 1.5 to 1
Trench Type 5
Depth of Bury 4
Test Pressure 200

Fitting Type Horizontal Bend
Nominal Size 16
Bend Angle 45°



Run Calculations

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Ductile Iron Pipe Research Association (DIPRA)

<http://www.dipra.org>

Ductile Iron Pipe Research Association - Thrust Restraint

File Combined Bends Help

Thrust Restraint Design for Ductile Iron Pipe

Type of Fitting:

Angle of Bend: deg.

Diameter of Bend: in.

Laying Condition:

Soil Designation:

Depth of Cover: ft.

Design Pressure: psi

Safety Factor:

Fitting: Horizontal Bend

Unit Frictional Force
495 lbs/ft

Unit Bearing Resistance
1,850 lbs/ft

Required Restrained Length for each side of bend:
21 ft (Bare)
23 ft (Polywrapped)

Press F1 for Context Sensitive Help

Calculate