

Thrust Restraint Design for Ductile Iron Pipe

Type of Fitting:

Combined Vertical Offset (Under Object) ▼

Angle of Bends:

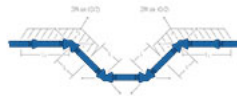
22.5 ▼ deg.

Diameter of Bends:

8 ▼ in.

Known Length (L):

2 ▼ ft.



Laying Condition:

Type 5 ▼

Soil Designation:

Coh-gran ▼

Depth Cover:

5.5 ▼ ft.

Design Pressure:

150 ▼ psi

Safety Factor:

1.5 ▼

Combined Vertical Offset (Under Object)

Unit Frictional Force: 276 lbs/ft

Required restrained length for each side of outermost bends:

L1 = 19 ft

Polyethylene Encased L1 = 28 ft

Thrust Restraint Design for Ductile Iron Pipe

Type of Fitting:

Combined Vertical Offset (Under Object) ▼

Angle of Bends:

22.5 ▼ deg.

Diameter of Bends:

12 ▼ in.

Known Length (L):

2.2 ft.



Laying Condition:

Type 5 ▼

Soil Designation:

Coh-gran ▼

Depth Cover:

5.5 ft.

Design Pressure:

150 psi

Safety Factor:

1.5 ▼

Combined Vertical Offset (Under Object)

Unit Frictional Force: 410 lbs/ft

Required restrained length for each side of outermost bends:

L1 = 28 ft

Polyethylene Encased L1 = 41 ft



Strength and Durability for Life®



Thrust Restraint Design for Ductile Iron Pipe

Type of Fitting:

Combined Vertical Offset (Under Object) ▼

Angle of Bends:

45 ▼

deg.

Diameter of Bends:

8 ▼

in.

Known Length (L):

2

ft.



Laying Condition:

Type 5 ▼

Soil Designation:

Coh-gran ▼

Depth Cover:

5.5

ft.

Design Pressure:

150

psi

Safety Factor:

1.5 ▼

Combined Vertical Offset (Under Object)

Unit Frictional Force: 276 lbs/ft

Required restrained length for each side of outermost bends:

L1 = 42 ft

Polyethylene Encased L1 = 60 ft

**Strength and Durability for Life®**

Thrust Restraint Design for Ductile Iron Pipe

Type of Fitting:

Combined Vertical Offset (Under Object) ▼

Angle of Bends:

45 ▼

deg.

Diameter of Bends:

12 ▼

in.

Known Length (L):

2.2

ft.



Laying Condition:

Type 5 ▼

Soil Designation:

Coh-gran ▼

Depth Cover:

5.5

ft.

Design Pressure:

150

psi

Safety Factor:

1.5 ▼

Combined Vertical Offset (Under Object)

Unit Frictional Force: 410 lbs/ft

Required restrained length for each side of outermost bends:

L1 = 61 ft

Polyethylene Encased L1 = 87 ft



Strength and Durability for Life®



Thrust Restraint Design for Ductile Iron Pipe

Type of Fitting:

Tee

Diameter of Run:

12

in.

Diameter of Branch:

12

in.

Run Length (first joints):

10

ft.

Laying Condition:

Type 5

Soil Designation:

Coh-gran

Depth Cover:

5.5

ft.

Design Pressure:

150

psi

Safety Factor:

1.5

Tee

Unit Frictional Force: 549 lbs/ft

Unit Bearing Resistance: 1,850 lbs/ft

Required restrained length for Tee Branch:

L = 40 ft

Polyethylene Encased L = 57 ft