

Pipeline Crossing Design Report

Project Details

Report Date: June 05, 2025

Generated By: Pipeline Simulation App

Project Title: Untitled Project (Please save your project to name it)

1. Input Parameters

Parameter	Value
Steel grade	330.0
Pipe Type	SMLS
Bored Diameter Option	Considered
Soil Type	Soft to medium clay
Codes and standards	API 1102
Pipe Outside Diameter	1016.0
Pipe Wall Thickness	10.0
Specified Minimum Yield Strength	195.0
Depth of Cover	1.5
Corrosion Allowance	0.0
Operating Pressure	0.0
Operating Temperature	40.0
Impact Factor	1.5
Design Wheel Load From Single Axle	53.4
Soil Unit Weight	18.9
Design Factor	0.72
Design Wheel Load From Tandem Axle	44.5
Modulus of Soil Reaction	3.4
Longitudinal Joint Factor	1.0
Youngs Modulus	210000.0
Resilient Modulus	34.0
Installation Temperature	65.0
Poissons Ratio	0.3
Coefficient of Thermal Expansion	1.44e-05
Earth Load Stiffness Factor	6330.0

Earth Load Burial Factor	0.47
Earth Load Excavation Factor	0.91
Stiffness Factor KHh	19.8
Geometry Factor GHh	0.7
Stiffness Factor KLh	14.8
Geometry Factor GLh	0.64
Road Axle Configuration Factor	1.0
Road Pavement Type Factor	1.0
Fatigue endurance Limit of Girth yield	82.737
Fatigue endurance Limit of Longitudinal Weld	158.57

2. Calculation Results

Output Parameter	Value
Pipe Wall Thickness Including CA	10.000
Bored Diameter	1067.000
Thickness to diameter ratio	0.010
Ratio of bore diameter and pipe diameter	1.050
Ratio of pipe dept and bore diameter	1.406
Applied Design Surface Pressure	0.478
Barlow Stress	0.000
F E SMYS	140.400
Barlow Stress Check	Allowable
Stress due to Earth Load	51.987
Cyclic Circumferential Stress	9.938
Cyclic Longitudinal Stress	6.791
Circumferential Stress S1	61.925
Longitudinal Stress S2	97.987
Effective Stress Seff	85.839
Principle Stress Check	Allowable
Girth Weld Criteria Check	Allowable
Longitudinal Weld Criteria Check	Allowable
Radial Stress	0.000