

Bridge for laying pipelines



Overview

LONG SPAN & BRIDGE CROSSING PIPEHDSS and HP LOK restrained joint pipe are well suited for bridge applications. The deflection capabilities of these joints.

Key Takeaways

Pipeline bridges are specialized structures designed to carry pipelines over obstacles like rivers, roads, or other infrastructure, ensuring safe and continuous transport of liquids or gases.

A pipeline bridge is a bridge specifically constructed to support pipelines when conventional routing—such as underground or on existing bridges—is not feasible. These bridges are commonly used for natural gas, crude oil, water, or centralized heating systems and are designed to maintain a steady flow while minimizing environmental and traffic disruption .

Materials and Design

Pipeline bridges can be made from steel, reinforced concrete, or fiber-reinforced polymer (FRP), depending on load requirements, environmental conditions, and corrosion considerations . They may be designed as suspension bridges for long spans or integrated into existing bridge structures. Walkways for maintenance are often included but are typically restricted to authorized personnel for safety . Key design considerations include:

- Load-bearing capacity to support the pipeline weight and contents.



- Thermal expansion and contraction management using expansion couplings or flexible joints.
- Corrosion protection, especially for metallic pipelines exposed to weather or water .
- Support geometry and spacing to ensure stability and minimize stress on the pipeline .

Construction Methods

Construction methods vary based on the bridge type and site conditions:

- Above-bridge installation: Pipelines are mounted on the bridge structure using supports and hangers, avoiding interference with traffic below .
- Movable or suspended platforms: Used for welding, lifting, and installing pipelines while minimizing road or river disruption .
- Trenchless techniques: For crossings under roads or sensitive areas, methods like Horizontal Directional Drilling (HDD), microtunneling, or auger boring are employed to reduce surface disturbance .
- Ductile iron pipelines: Often use push-on, mechanical, or restrained joints to accommodate thermal expansion and structural movement .

Advantages

Pipeline bridges offer several benefits:

- Reduced construction difficulty compared to trenching across rivers or urban areas .
- Minimal traffic disruption since work can be performed under or alongside existing infrastructure .
- Long-term durability with proper material selection and corrosion protection .
- Flexibility to adapt to site-specific constraints, including subsea or offshore environments .

Notable Examples

- The Fuji River Pipeline Bridge in Japan, 1,040 meters long, is one of the world's longest pipeline bridges .
- The Hegigio Gorge Pipeline Bridge in Papua New Guinea, at 393 meters high, is among the tallest . Pipeline bridges are essential for ensuring safe, efficient, and reliable transport of fluids across challenging terrains while minimizing environmental and operational impacts. Proper design, material selection, and construction methods are critical for their long-term performance and safety.

Article Content

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Bridge Crossings with Ductile Iron Pipe

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Construction method for laying gas pipelines along bridge

The invention discloses a construction method for laying gas pipelines along a bridge, and belongs to the technical field of building

Bridge crossing pipe laying | Pamline

Every bridge is a special case and must be specifically studied. The initial concern is to ensure that the

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Air Bridge 4 Powerful Benefits

In other words, you need an air bridge. An air bridge is a temporary bridge made out of road

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This document outlines the design philosophy for pipe bridge structures. It covers applicable codes and standards, materials of

Microsoft Word

To locate a pipeline on a bridge, demonstrate that the proposed pipeline on the bridge can be constructed, maintained and is more

Utility or Pipe Support Bridges

Algonquin's Custom Prefabricated Bridges and Modular Bridge Systems can be designed to carry a variety of utility

Design and construction of underwater pipelines crossings

1 Introduction There is a need for the construction of such structures as underwater crossings for pipelines to cross water barriers

Bridge Crossings

General Ductile Iron Pipe is centrifugally cast in 18- and 20-foot nominal laying lengths. Nominal diameters range from 3 to 64 inches,

Pipeline Crossing

Abstract Natural gas pipeline aerial crossing (NGPAC), also called natural gas pipeline bridge, is an important structure for gas

Pipeline bridge

A pipeline bridge carrying the Trans-Alaska Pipeline A pipeline bridge is a bridge for running a pipeline over a river or another

(PDF) Guidelines for Bridge Water Pipe Installations

The guidelines were specifically developed for personnel routinely involved in the planning, design, inspection, and

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A pipeline being lowered into the trench Planning for new capacity must begin far in advance of transporting the first

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EXECUTIVE SUMMARY ew natural gas pipelines crossing existing natural gas pipeline facilities. The Guidelines

Lifecycle of an Enbridge Pipeline

Lifecycle of an Enbridge pipeline With proper design, construction, operation and maintenance, pipelines

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Pipe used in pier and bridge crossing applications where supports will be pre-installed will require pipe to be cut to exact lay-lengths

Armoured vehicle-launched bridge

A Valentine bridgelayers of the 3rd Independent Bridge Building Company, Royal Armoured Corps, spans a

Pipeline River Crossing Construction Methods | Portadam

Pipeline River Crossing Construction Methods Portadam is a great cofferdam option for pipeline crossing.

Quick Guide for Pipeline River Crossing Projects

Proper planning, front-end design, installation, and maintenance are critical components of a successful pipeline river

Pipelay Installation

Watch the preparation work required for installing pipelines offshore.

CGL Crossing Water Safely Fact Sheet

Coastal GasLink takes extra precaution around water bodies. Pipelines can be installed at water bodies through trenched or

What is a Pipe Rack?

Pipe Racks are also known as pipe bridges, pipe ways, and pipeline corridors. Learn about different types and components of pipe

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Applications: Used to connect bare copper wire to water pipe, re-bar, ground rod or copper water tubing for grounding

Pipeline Crossing Analysis – Focus on Road Crossing Design

Pipelines design and construction entails series of technical activities that must be adequately planned, including executing pipeline

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