Ground gas pipe bridge

Overview

Construction method for laying gas pipelines along bridgeThe invention discloses a construction method for laying gas pipelines along a bridge, and belongs.

Key Takeaways

A ground gas pipe bridge is a structure designed to safely support and route gas pipelines over obstacles such as rivers, roads, or other infrastructure, ensuring both mechanical stability and safety compliance.

Construction Methods

Gas pipelines crossing bridges can be installed using specialized construction techniques that minimize disruption and enhance safety. One method involves installing upper and lower operating platforms, combined pulleys, and supporting hanging frames under the bridge to lift, weld, and secure the pipeline without blocking traffic or navigation. This approach reduces construction difficulty, avoids large scaffolding, and lowers costs while maintaining high safety standards.

For polyethylene (PE) gas pipes, design guides recommend using transition fittings to switch from underground PE pipes to steel pipes on the bridge unless a regulatory waiver is obtained. Historical installations in the U. S. have shown that PE pipes can be safely used on bridges with proper design and regulatory compliance.

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Pipe Bridge StructuresPre-engineered modular pipe racks are commonly used to support multiple gas pipelines over obstacles. These structures are fabricated off-site and installed quickly, providing a durable and heavy-duty solution for industrial and municipal gas distribution. Temporary "air bridges" can also be used to allow heavy equipment to cross over buried gas lines while maintaining a safe clearance, typically 48 inches horizontally and 8 inches vertically.

Grounding and Safety

Metallic gas pipelines require bonding to the building's grounding system to prevent electrical hazards. Grounding the gas pipe directly is prohibited due to corrosion risks. Instead, a bonding jumper wire (minimum #6 AWG copper) connects the gas line to the grounding electrode system, creating an equipotential plane and preventing arcing or sparking from electrical faults or lightning strikes.

This ensures both operational safety and compliance with modern building codes.

Key Considerations

Material selection: Steel or PE pipes depending on regulatory approvals and environmental conditions. Structural support: Use of modular racks or hanging frames to maintain pipeline alignment and load distribution. Safety compliance: Proper bonding, pressure testing, and corrosion protection.

Minimizing disruption: Construction methods that avoid blocking traffic or waterways. Prefabrication: Off-site fabrication of pipe racks or platforms can reduce installation time and cost. By combining these engineering, safety, and regulatory practices, ground gas pipe bridges provide a reliable and efficient solution for transporting gas across challenging terrain or infrastructure obstacles.

Article Content

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 operations.

Design Guide for Polyethylene Gas Pipes Across Bridges

Design considerations, basic design equations, examples of gas pipe installations on bridges and example problems of above ground installations are included in this report.

Pipe Bridges | Pre-engineered Modular Pipe Rack

Pre-engineered modular pipe racks are structures designed and

Pipe Bridges and Gantries | Ambrey Baker

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Our pipe bridge and gantry solutions deliver robust, compliant infrastructure that enhances process safety, supports efficient production, and provides long-term operational resilience

Air Bridge | Industrial Timber Products by CarlWood

These bridges are temporary solutions for heavy equipment that needs to cross over expensive (and dangerous!) gas lines and other utilities The

(PDF) Practical Bonding of Industrial Piping in

Ensuring reliable electrical bonding in hazardous areas is critical for safety in oil and gas operations. This article presents a proven method for

Pipe racks or Pipe Bridges are structures designed and built ...

Pipe racks are necessary for arranging the process and service pipelines throughout the plant

GUIDANCE FOR TEMPORARY PIPELINE CROSSINGS

In some instances a temporary bridge/raft system can be used to form a bridge over the pipeline. Systems need to be designed such that any load transferred to the ground is sufficiently far...

Gas Piping Safety: Grounding and Bonding Explained

Proper grounding and bonding play a crucial role in ensuring the safety of your gas piping installation. In this guide, we''ll explain what grounding and bonding are, why they''re essential, and how to

What are Pipe Sleepers or Pipe Tracks?

In the context of oil and gas, pipe sleepers are structural supports at nearly level, designed specifically to support horizontal pipelines. They are essentially longitudinal Profile, often made of

49 CFR Part 192 -

Pipeline means all parts of those physical facilities through which gas moves in transportation, including pipe, valves, and other appurtenance attached to pipe, compressor units,

(PDF) Practical Bonding of Industrial Piping in

Practical Bonding of Industrial Piping in Hazardous Areas: Standards, Implementation, and Field Examples: Field-based grounding

Pipeline bridge

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Pipeline bridges for liquids and gases are, as a rule, only built when it is not possible to run the pipeline on a conventional bridge or under the river. [non-primary source needed] However, as it is more

Is Gas Pipe Grounding Legal?

Is Gas Pipe Grounding Legal? You must not use an underground metal gas piping system as a grounding electrode. So, what''s the confusion all about? The controversy behind bonding and

Grounding and Bonding of Gas Piping

Conclusion: Natural gas and electricity don''t mix. A gas leak in conjunction an electrical spark may be fatal but if we inadvertently energize a metal gas pipe

pipe-bridge – Servog Consult Services

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LONG SPAN & BRIDGE CROSSING PIPE

Long Span Pipe & Bridge Crossing Submittal Document (Rev. 01/2024) Materials and specifications are subject to change without notice. Images may be rendered examples and are not necessarily

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