

Article Overview

Connecting a cold-joint flange requires proper alignment, suitable gasket selection, and careful bolt tightening to ensure a leak-free and structurally sound joint.

Step 1: Prepare the Flange Surfaces

Ensure both flange faces are clean, smooth, and free of debris or corrosion. Avoid using metal tools that could damage the surface; a brass wire brush is recommended for cleaning. Inspect the flange for any irregularities that could prevent a proper seal, as uneven surfaces can lead to leaks or stress points during operation .

Step 2: Select the Appropriate Gasket

Choose a gasket material compatible with the conveyed medium and operating conditions. Never reuse old gaskets, and ensure the gasket fits correctly without protruding into the pipe. Misaligned or incorrect gaskets can cause erosion, leakage, or failure under pressure .

Step 3: Align the Flanges

For cold-joint flanges, alignment is critical. If the flange is part of a phased construction or a cold joint in concrete-embedded piping, leave one side slightly loose to allow adjustment. Ensure bolt holes line up and the flange faces are parallel. Misalignment can cause uneven stress and compromise the seal .

Step 4: Insert Bolts and Washers

Use bolts and washers appropriate for the flange type and material. Insert bolts through the flange holes, placing washers on both sides if required. For dissimilar materials, adjust bolt torque to avoid overloading weaker components .

Step 5: Tighten Bolts in a Cross Pattern

Tighten bolts gradually in a diagonal or star pattern to evenly compress the gasket. Start with light torque and progressively increase to the recommended specification. This prevents uneven stress, flange warping, and potential leaks .

Step 6: Verify the Joint

After tightening, check the flange for proper alignment and ensure the gasket is seated evenly. If the system is pressurized, monitor for leaks and adjust torque if necessary. For cold joints in concrete or phased

Cold-joint flange connection

construction, consider using dowels or continuous reinforcement to maintain structural integrity .

Additional Considerations

- o For water, wastewater, or chemical applications, include water stops or sealing elements at the joint to prevent leakage .
- o Avoid keyed joints in cold-joint scenarios, as they are prone to spalling and require extra labor .
- o Always follow safety protocols when working with pressurized systems, ensuring bolts are loosened or tightened in a manner that directs any escaping medium away from personnel . By following these steps--surface preparation, proper gasket selection, careful alignment, and controlled bolt tightening--you can achieve a secure and reliable cold-joint flange connection suitable for industrial or construction applications .

What is a flange and how do you pick the right one? A guide to flange types, design,

In this study, a novel pipe-flange connection method based on cold work is evaluated using the finite element method.

Learn the correct methods for making flange connections and avoid common mistakes with bolts and gaskets.

In this paper a new method of connecting pipe to flange without welding is presented. This method is a cold forming

A cold joint in concrete is an area or surface with a structural discontinuity caused by the delayed concrete

Cold joint in concrete a structure can be occurred due to the lack of attention of the supervision team or unawareness of the setting

Comprehensive guide to piping flanges covering all 6 major types: slip-on, weld neck, socket weld, lap-joint, threaded,

A flange joint is a detachable, force- and form-fit connection of two components using matching flanges that are

A Comprehensive Guide to Flange Basics Flanges link pipes, valves, and other elements in

Flanges are used when the piping joint needs dismantling. These are used mainly at equipment"s, valves and

DNV, ABS, Lloyd"s Register & PED approved, Quickflange(TM) delivers permanent cold work flange-to-pipe connections. For over 20

Cold-joint flange connection

With proper design and installation all of these approaches can provide leak tight joints down even at superfluid helium temperatures

TE's broad portfolio of electrical joints combines technologies from cold to heat shrink, including gel, resin and other insulation

Ring-type joint flanges (RTJ flanges) play a key role in multiple industrial fields due to their unique design and sealing

The finite element results show that a high load carrying capacity can be achieved for the cold work pipe-flange

How do pipe flanges work? Flanges are used to bolt piping components together, such as

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