

How to test the loss of a cold-joint sub-interface



Overview

In addition to GPR, there are other non-destructive testing methods that can be used to evaluate cold joints in concrete, such as ultrasonic pulse velocity (UPV), impact echo, and rebound hammer (Schmidt hammer) testing. This article focuses on smooth concrete interfaces, which have their layers cast at different times (cold-joint interface). By analysing the results of different experimental push-off tests, presented in the literature, a novel analytical method was developed for the previously described concrete. Abstract: The behaviour of the interface between two concrete layers, subjected to shear, is a complex process that is influenced by many different parameters. How Does GPR Work?

GPR technology utilises electromagnetic radiation to detect and image. This study investigated the effects of cold joints on the strength and some durability properties of concrete. We will review how structural engineers and quality control laboratories can utilize NDT methods to assess the quality and integrity of concrete on or around the cold joint.

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This research explores the application of ensemble spiking neural network models for predicting interface shear strength in concrete structures, a crucial parameter in civil engineering.



Test blocks, measuring 5 m × 4 m × 2 m with cold joints, were cast on site and subjected to shear tests. Additionally, a three-dimensional four-phase meso-model was developed, considering ...



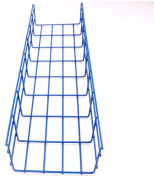
Checklist in ACI 306.1 can be used to add appropriate modifications to the contract documents. This document guides the specifier, contractor, and concrete producer through the recommendations that ...



We will review how structural engineers and quality control laboratories can utilize NDT methods to assess the quality and integrity of concrete on or around the cold joint.



GPR technology is an effective non-destructive testing method for detecting cold joints in concrete and assessing the quality and integrity of concrete around the joint area.



This analytical method is mostly suitable for determining the behaviour of the interface between the layers of normal concrete with a smooth interface surface with and without transverse connectors, ...



This study examines the impact of cold joints on the strength and stiffness of reinforced concrete beam-column connections through experimental testing on two specimens, one monolithically poured and ...



Concrete specimens with and without cold joints were subjected to drying-wetting, freezing-thawing and high temperatures (300, 600 and 900 °C) and subsequently tested for weight losses and splitting ...

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