

# What's under the surface? We can tell you.

## Subsurface Investigation Cores & Boreholes

Infrastructure Management &  
Pavement Engineering



# Why do we need cores and boreholes?

Cores and boreholes allow us to assess materials and thicknesses below the ground's surface. Stantec operates a truck-mounted drilling rig that can extract cores and/or advance boreholes. Coring extracts samples of the asphalt or concrete to enable accurate thickness measurement. Boreholes are used to investigate the materials underlying the hard surface. This includes granular and subgrade materials. The samples retrieved from cores or boreholes can be tested in a laboratory to identify and qualify material characteristics.

The drilling rig is highly efficient in extracting cores, and advancing boreholes. The rigs are equipped with tools and materials for backfilling and compacting boreholes to meet agency requirements.

Core and borehole data is largely accepted by highway agencies as the most reliable data for pavement thickness determination. It can provide data for interpolating between gaps in as-built databases and pavement design decisions. In GPR processing it is used to ground truth.

## How it works

The coring rig can drill into asphalt concrete and/or Portland cement concrete up to depths of 600mm (24 inches) and diameter up to 200mm (8 inches).

The coring rig can also be used for boring by switching the drill piece. It can drill into the same materials as the coring rig for depths up to three meters, allowing it to penetrate the granular material below.



# Applications

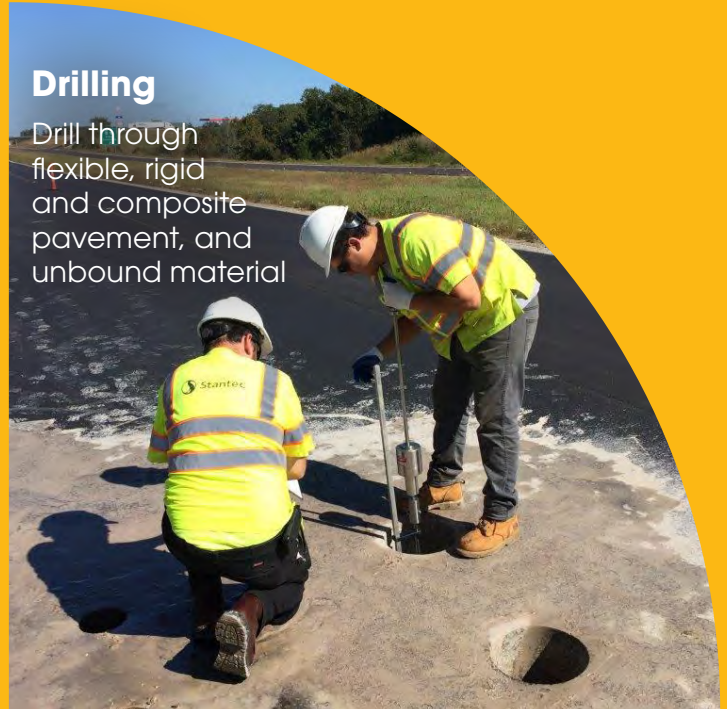
## Data Collection

Collect the thickness and depths of the surface and sub-surface layers



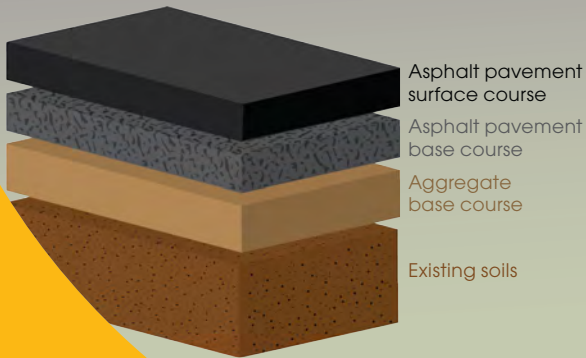
## Drilling

Drill through flexible, rigid and composite pavement, and unbound material



## Material Structure

Determine the condition and quality of each layer





## Sampling

Obtain samples of sub-surface layers for laboratory testing





# Benefits


 Mounted and mobile coring machines and augers for location flexibility

 Most reliable data for pavement layer types and thickness

 Ground truth information

 Provide samples for laboratory testing

 Fill in the gaps in as-built databases

 Visual inspection of core materials and condition

## Design with community in mind

We're active members of the communities we serve. That's why at Stantec, we always *design with community in mind*.

We collaborate across disciplines and industries to bring buildings, energy and resource, and infrastructure projects to life. Our work—professional consulting in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics—begins at the intersection of **community**, **creativity**, and **client relationships**.

Since 1954, our local strength, knowledge, and relationships, coupled with our world-class expertise, have allowed us to go anywhere to meet our clients' needs in more creative and personalized ways. With a long-term commitment to the people and places we serve, Stantec has the unique ability to connect to projects on a personal level and **advance the quality of life in communities** across the globe. Stantec trades on the TSX and the NYSE under the symbol STN.

