

CASE STUDY

CN's Brampton Intermodal Yard Utilizes N-12® Pipe for Expansion

Brampton, ON

OWNER

Canadian National Railway Company,
Montreal, QC

ENGINEER

AECOM, Mississauga, ON

CONTRACTOR

Coco Paving Inc., Toronto, ON

INSTALLATION DATE

November 2010

PRODUCTS

640 m (2,100') of 150 mm (6") N-12 perf and solid
190 m (640') of 300 mm (12") N-12
380 m (1,260') of 450 mm (18") N-12
85 m (280') of 525 mm (21") N-12
61 m (200') of 750 mm (30") N-12
190 m (640') of 900 mm (36") N-12

CHALLENGE

Canadian National Railway's (CN) Brampton terminal is Canada's largest rail intermodal hub and a key component in CN's distribution network. Due to growing container volumes, CN expanded the intermodal's size in an undeveloped parcel of land. A new stormwater conveyance system was therefore required under the new paved area.

The yard would see constant fork lift traffic to move the containers, which would also be stacked on the system. This traffic would project major live loads over the stormwater system.

SOLUTION

Advanced Drainage Systems' N-12 high-density polyethylene (HDPE) pipe had undergone railway loading tests the previous year. Based on industry research, the pipe can be buried at depths up



adspipe.com

ADS

to 9.1 m (30 ft). These depths, based on the pipe's strength and backfill compaction, would be fully compliant with the cover requirements for the intermodal yard.

Coco Paving, Inc., which had successfully used N-12 pipe on prior infrastructure projects, recommended the HDPE system because it met all performance criteria. Its strength could withstand the significant live loads generated by forklifts and stacked containers, while its light weight allowed for faster, easier installation compared with traditional materials.

Installation of over 1,500 m (5,000') took place in November, when temperatures in Brampton can be very cool. The HDPE pipe performed well under these conditions, as it does not become brittle or crack in low temperatures the way PVC pipe can.

PRODUCT DESCRIPTIONS

N-12 is a high-density polyethylene pipe manufactured by Advanced Drainage Systems, Inc., (ADS) for gravity-flow storm drainage applications. N-12, which is available in diameters from 100-1,500 mm (4"-60"), offers exceptional hydraulics and strength. N-12 provides superior corrosion and abrasion resistance in a lightweight, corrugated design. A polyethylene bell minimizes joint distortion and eliminates chipping and cracking that is common to concrete bells. Available in 6 m (20') lengths, N-12 provides lower installation costs and faster installation than traditional materials. N-12 can be utilized for storm drains, culverts, cross drains, ditch enclosures and retention/detention.



adspipe.com

