

# Armored Vehicle Service Bay

Gagetown, NB, Canada

PRODUCT USED:  
**Hard-Cem®**

## OWNER:

Department of National Defence

## DESIGNER:

3 ASG Engineer Branch

## CONTRACTOR:

Bluestone Contracting Ltd.

## READY-MIX SUPPLIER:

Northside Ready Mix

## BACKGROUND

The 5th Canadian Division Support Base Gagetown (also known as CFB Gagetown) is a Canadian Forces base and training facility located in southwestern New Brunswick. It was built in 1958 and is still standing today as an operational training area for Canadian forces. More specifically, it acts as a combat training center and home to Land Force Command, where brigade- and division-size armored, infantry, and artillery units exercise. The main units involved include the 5th Canadian Division, 5th Canadian Division Support Group, 2nd Battalion, Royal Canadian Regiment, and 4 Engineer Support Regiment.

Over the years of their activity there, they noticed that the concrete floors from the maintenance facilities nearby had deteriorated significantly. Having been subjected to severe mechanical abrasion for years from heavy armored vehicles, tools, and equipment used in routine service and maintenance, the concrete floors had worn down. That in turn led to lost operational efficiency for the armored vehicle services bay, making the area a hazard for both people and equipment. As a result, the facility had to be taken out of service while its existing slab was removed. And the 3 ASG Engineer Branch at CFB Gagetown now needed to find a solution that would protect the service bay from deterioration.

## SOLUTION

Presented with Hard-Cem, the 3 ASG Engineer Branch accepted it as their durability solution. The appeal of it was that Hard-Cem's full-depth concrete hardening is able to extend the service life of concrete in high-traffic areas that are subject to long-term abrasion from vehicular wear. Moreover, because Hard-Cem is fully compatible with conventional admixtures and can be used in any mix design, it allowed the designer working with the branch to incorporate additional admixtures for a superior abrasion-resistant concrete floor. All of which turned out a twenty-centimeter-thick (eight-inch-thick) reinforced slab that was poured to form concrete with 35 MPa (5,000 psi).



# Armored Vehicle Service Bay

Gagetown, NB, Canada

PRODUCT USED:  
**Hard-Cem®**

By using Hard-Cem to increase the abrasion resistance of the concrete floor, the floor's load-carrying capabilities and mechanical functionality increased. That ensured the facility would require fewer repairs and would be cleaner and safer. In short, the newly constructed abrasion-resistant floor was a cost-effective durability solution in the long run.

Based on this success, Hard-Cem was repeat specified at CFB Gagetown to expand a light-armored vehicle facility of 7,900 m<sup>2</sup> (85,000 ft<sup>2</sup>).

*Note: Tracked vehicles maintained at CFB Gagetown incorporate rubber treads to reduce point load impact on concrete. Hard-Cem is not a replacement for steel wear plates or rails, which are the most prevalent wear mitigation design features used in concrete flatwork directly subjected to tracked machinery traffic. Hard-Cem has been successfully used in tracked equipment facilities where rubber treads, steel plates, or rails were used to resist direct wear from the tracked equipment.*

