



**DOWAKSA** CarbonWrap®

## CASE STUDY

THE HOPKINTON BRIDGE  
HOPKINTON, MASSACHUSETTS

### UNIQUE DESIGN USED TO ENCAPSULATE BRIDGE

#### Problem

Leakage from the expansion joints in the Hopkinton Bridge had completely eroded the cover concrete on the cap beam and the bent underneath. Major spalling and severe corrosion of the rebar were present all over the columns and the bent cap. The Massachusetts Department of Transportation approached DowAksa CarbonWrap® for a design-build approach to the repair and upgrading of this structure.

#### Solution

DowAksa CarbonWrap® designed and installed a unique solution, combining carbon laminates and fabric to strengthen the bridge for shear and flexural forces. Special high-strength polymer concrete was used to repair and patch all spalls in advance of wrapping with carbon fabric. A unique design concept was utilized in this bridge as a showcase to stop corrosion. The approach consisted of completely encapsulating the bridge, preventing any oxygen or electrolytes from getting into the concrete structure beneath the wrap to starve the system of the primary elements of an electrochemical corrosion.



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