Sheffield Junction Intersection upgrade benefits from high-performance waterproofing

The ELIMINATOR® system helps keep rail traffic moving on large scale rail project

Project	Sheffield Junction Intersection, USA
Client	Kansas City Terminal Railway Corporation
Contractor	Transystems Corp
Authorised Contractor (Waterproofing Applicator)	Venture Construction
Credit List additional actions	ELIMINATOR® Bridge Deck Waterproofing System
GCP Solutions	

Project

Solving traffic bottlenecks

Over the years, increases in rail traffic through the Sheffield Junction Intersection had led to bottlenecks, and idle freight trains mean loss of profits. This was affecting not only Kansas City traffic but also traffic on the Union Pacific and Kansas City Southern railroads. The solution was a new three-mile long rail flyover at the intersection.

Relocating a cold water chilling system

TranSystems Corporation's innovative approach to install 80-ft precast and prestressed beams won the American Consulting Engineers Council's Honour Award in 2001. The development itself, however, was faced with many difficulties. The intersection is in the middle of an industrial part of the city. This meant that the engineers had to relocate a cold water chilling system for a nearby steel plant and cope with the problems of argon, nitrogen and natural gas carrier lines.

For much of the project, there was insufficient space for a site to store the massive steel beams and concrete spans. In addition, deliveries could only take place at certain times since there were restrictions as to when the trucks could use adjacent roads.

Application of waterproofing membrane accelerates project completion

The specifiers selected the ELIMINATOR® bridge deck waterproofing system from Stirling Lloyd (now GCP Applied Technologies) for what was then the largest US rail project to date. The ELIMINATOR® system was chosen based on its track record for longevity, as well as its ability to help lower future maintenance costs.

Once the bridge was in place, PAR1 primer was used to prime the new surface, and this was then covered with two coats of the ELIMINATOR® waterproofing system, which is based on unique ESSELAC® technology.

Due to the fast curing of the membrane, the track contractor was able to bring in equipment within 24 hours to put down ballast and lay track. As the waterproofing of the bridge was carried out in the winter, the ELIMINATOR® system's ability to cure under adverse weather conditions meant that the project could go ahead despite the cold wet weather of a Missouri winter.

Thanks to the speed of application of the waterproofing solution, the contractor was able to finish the project two months ahead of schedule. The project was clearly a success, with the speed of rail traffic through Kansas City increasing from 15 to 50 miles an hour.

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