

Case Study: Wisconsin Department of Transportation

Steve Martinez, Structural Maintenance Specialist for the Wisconsin Department of Transportation, had several joints on a bridge approach that were in need of repair. There was polymer concrete on either side of the joints that was failing and pieces had begun breaking away. Moisture was able to penetrate these cracks and freeze thaw combined with heavy traffic exacerbated the problem.

When reviewing what material to use for this repair Steve wanted something that was going to have an excellent bond to the concrete and was tough enough to handle the large volume of traffic. It also had to be impervious to moisture and be able to withstand chemical attack from the salt, oils, and gasoline. The job was going to be done by Milwaukee County Maintenance crews and equipment so it had to be a user-friendly material that required no special equipment. Most importantly though, because these ramps receive such a large volume of traffic during Milwaukee's morning and afternoon rush hours, shut down had to be kept to a minimum. The bridges could only be closed from 9 am until 3pm so the material would have to set up quickly. Steve decided on ICO Quick-Patch, Milamar Coating's three part hybrid patch material designed for very rapid concrete repairs.

At 9am the bridge was closed to traffic and crews immediately started to remove the old patching material and any deteriorated concrete using air hammers. Because of the moisture penetration, salt attack and freeze thaw cycles, a lot more concrete had to be removed than originally anticipated. ICO-Quick Patch can be applied in virtually any thickness so this was not an issue. A large vac truck was used to expedite the removal of the concrete and loose debris.

In order to ensure a quality bond with the concrete extra ICO Quick Patch resin was ordered and used as a primer prior to trowel applying the quick patch. It was quickly brush applied to the prepped concrete. It is not necessary to wait for the primer to cure so the ICO Quick Patch was immediately applied over the wet primer.

A mixing station was set up and all the part A's, Part B's and mixing buckets were set out to ensure a quick and efficient operation. The mixing was done on cardboard to avoid spillage on the roadway. The ICO Quick Patch was mixed in ½ cubic foot batches and trowel applied into the joint. Two of the crew members were called away because a piece of specialty equipment on their truck was needed at another site. The material was easy enough for the remaining experienced maintenance crew to still get all the material applied by 1:00pm. Even with cooler than usual summer temperatures in the low 70's this still allowed plenty of time for the ICO Quick Patch to cure and the ramps to be opened to traffic by the 3:00pm deadline.

