

Willamette River Transit Bridge

US SPEC PRODUCTS

US SPEC Products: NA-50 Grout and STR Mortar

Contractor: Kiewit Infrastructure West Co.

Engineering Group: Kiewit Infrastructure West Co.

Date of Completion: 2015

The Willamette River Transit Bridge is a 1,720 foot long bridge; reaching 180 feet tall, it will be the first bridge to span the Willamette River since 1973 in the Portland area. It will also be the first of its kind in the United States. What sets this bridge apart is the fact that it will not allow the operation of private vehicles. Its sole use will be for pedestrians, cyclists, buses light-rail and streetcars. With this unique purpose, the bridge's plans are to include two 14-foot wide bicycle and pedestrian paths.

Portland currently ranks 4th in the United States for total number of riders using the city's current 56.9 miles of light-rail. Once complete the bridge will connect Portland State University and Oregon Health & Science University to Inner S.E. Milwaukie, Oregon through 7.3 additional miles and 10 new light-rail stations.

After months of research to determine what bridge design would be best for aesthetic, time, and cost, designers and engineers narrowed the decision down to a cable stayed bridge. After the decision was made, The Willamette River Transit Bridge project was approved in a public meeting. The cable stayed bridge would consist of 3.5 miles of cable, two towers, two landslide piers and two in-water pipes. The bridge's completion is scheduled for 2014; however, it will not be opened until light-rail service begins in 2015.

The structural integrity of the bridge and all its components is of the utmost importance due to the length of the bridge, traffic and number of pedestrians that will pass over on a daily basis. One way to ensure the stability of the bridge was using a bonded post tension design. This will allow all cables and tendons to be protected from corrosion by grout encapsulation. The contractor on this project, Kiewit Infrastructure West Co., used US SPEC NA-50 grout in the post tension ducts. They chose the grout because of its favorable attributes: high flow, zero bleed, non-aggregate, non-shrink. NA-50 is designed with extreme fluidity, shrinkage compensation and extended working time where clearances are minimal and the areas are virtually inaccessible. In this case, the product will be used in the grouting of tendon cables in extremely tight spaces. Using this product will protect the post tension tendons from corrosion. To apply NA-50, the product was mixed in a colloidal mixer and pumped into the ducts.



To fill the voids on the underside of the edge girder the contractor chose to use US SPEC STR Mortar, a flowable, shrinkage compensated structural repair mortar with Ferrolok™ Integral Corrosion Inhibitor. STR Mortar solved the problem of making structure repair in hard to reach areas easier and faster for the contractor.

Both US SPEC products, NA-50 and STR Mortar, fit the needs of the contractor and the job at hand. The parties involved were very happy with the performance of both products. The Willamette River Transit Bridge is a demanding project. However, upon completion all hard work will have paid off for this gorgeous, spanning pedestrian and light-rail bridge.

