



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

NOV 30 2018

OFFICE OF WATER

**DECISION MEMORANDUM**

**SUBJECT:** Project Waiver of American Iron and Steel Requirements to the City of Fort Wayne, Indiana for Steel Reinforcement Fibers

**FROM:** Andrew D. Sawyers, Director  
Office of Wastewater Management

A handwritten signature in black ink, appearing to read "A. Sawyers", is positioned to the right of the "FROM:" field.

The U.S. Environmental Protection Agency is hereby granting a project waiver pursuant to the “American Iron and Steel” requirements of the Clean Water Act Section 608 under the authority of Section 608(c)(2) to the City of Fort Wayne, Indiana for the purchase and use of steel reinforcement fibers in precast tunnel segments. This waiver permits the purchase and use of up to 25 percent (by weight) of the fibers manufactured outside of the United States for Fort Wayne City Utilities’ Three Rivers Protection and Overflow Reduction Tunnel (3RPORT) project. No domestic manufacturer currently produces an alternative product that can meet the project’s technical specifications. However, a domestic source for steel fibers that will meet the project’s specifications is set to become available by June 2018, and therefore, will supply the majority (75 percent by weight) of the steel reinforcement fibers necessary for the 3RPORT project. This is a project-specific waiver and only applies to the use of the specified product for the proposed project funded by the Clean Water State Revolving Fund. Any other project funded by either the Clean Water or Drinking Water State Revolving Fund that wishes to use the same product must apply for a separate waiver based on the specific project circumstances.

**Rationale:** According to the AIS requirements, CWSRF and DWSRF assistance recipients are required to use specific domestic iron and steel products that are produced in the United States if the project is funded through an assistance agreement. The agency can determine whether it is necessary to waive this requirement based on certain circumstances set forth in Section 608(c)(2) of the Clean Water Act. The provision states that, “[the requirements] shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency...finds that – (2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.”

Fort Wayne provided information to the EPA claiming there are no manufacturers producing steel fibers necessary for the proper construction of segmental tunnel liner panels in the United States in sufficient and reasonably available quantities that can meet the project’s technical specifications. The 3RPORT tunnel and shafts project consists of 24,500 feet of 16-foot diameter tunnel and multiple access, vent, and pumping shafts. When complete, the tunnels will alleviate 90 percent of combined sewer overflows in

Fort Wayne into the St. Mary River, the Maumee River and Lake Erie. Project specifications require steel fiber reinforcement to be used in the production of precast concrete segmental tunnel liner panels, manufactured in the U.S. The segment manufacturer specifications require incorporation of steel fiber reinforcement suitable for tunnel applications, conforming to ASTM A820, and not of loose fiber character (to reduce balling during concrete mixing).

The EPA solicited public comment and conducted market research on the supply and availability of glued steel fibers that are suitable for tunnel applications and conform to ASTM A820. The Agency received no public comments and was unable to find a domestic manufacturer, concluding that the applicant's claim is supported by available evidence. The Agency examined the five known manufacturers of steel reinforcement fibers. None of the manufacturers currently produce domestic glued fibers suitable for tunnel applications that conform to ASTM A820. However, with Fort Wayne's waiver submission, a letter from an emerging domestic manufacturer stated that production of fibers meeting the project specifications would become available in June 2018. EPA confirmed this estimated completion date for the factory expansion. With the impending availability of a new domestic source, the 3RPORT project would only require up to 25 percent by weight of non-domestic fibers. When asked if Fort Wayne could delay the project construction to maximize the use of domestic fibers, Indiana responded that further schedule postponement would not allow Fort Wayne to meet its consent decree obligations with the EPA.

The issue of steel fiber reinforcement in precast concrete segmental tunnels has come before the Agency on multiple occasions under the American Iron and Steel requirements for the CWSRF. In past public comment periods for similar projects, third parties have questioned the engineering basis of specifications requiring similar characteristics of steel fibers. The issue has been thoroughly researched by the Agency at this juncture. EPA finds that the engineering basis of steel fiber specifications for the Fort Wayne project is performance-based, reflecting a reasonable consensus of the state of science for tunneling applications. The Agency contacted multiple worldwide experts (public and private practices) in the field of precast concrete tunnel applications and confirmed that the specified basis for the technical requirements of the 3RPORT project fall within current demonstrated engineering practice for tunnel design. The Agency recognizes that the project's professional engineering firm has designed the Fort Wayne tunnel specifications to meet the conditions of the sub-surface project, to last the projected useful life of the project, and conform with the reliable projections for the behavior of manufactured tunnel segments.

Since the applicant established a proper basis to specify the specific fiber products required for this project, and EPA substantiated the applicant's claim through market research that these products are not available from a manufacturer in the United States, the City of Fort Wayne is hereby granted a waiver from the AIS requirements. This waiver permits the purchase and use of the specified steel fibers for concrete reinforcement as documented in the state of Indiana's waiver request submittal on behalf of the applicant for the 3RPORT project submitted to the EPA on March 1, 2018.

If you have any questions concerning the contents of this memorandum, please contact Timothy Connor, Chemical Engineer, Water Infrastructure Division, at [connor.timothy@epa.gov](mailto:connor.timothy@epa.gov) or (202) 566-1059.