High-speed railway lines focus of K-State engineering research team

 Prestressed concrete railroad ties — an essential component for higher speed railway lines — are becoming increasingly popular in the United States. In order for these ties to function adequately over their expected service life, the prestressing force must be fully transferred into the railroad tie at a distance less than 1.5 feet from the end of the tie.

Research at Kansas State University, under the direction of Robert Peterman, professor of civil engineering, along with Terry Beck, professor of mechanical and nuclear engineering, and John Wu, associate professor of industrial and manufacturing systems engineering, evaluates the best combinations of concrete and prestressing steel to meet this objective and ensure long-term performance of the ties.

Both graduate and undergraduate engineering students have been involved in conducting this experimental research as part of a $2.1 million multi-disciplinary project being funded by the Federal Rail Administration, LB Foster/CXT Concrete Ties and the Kansas State University Transportation Center.

Results from concrete railroad tie research by the K-State team include one patent and the publication of 25 peer-reviewed articles since 2011.

“Research and results that improve the viability of rail service are vital for Kansans and the Kansas economy.”

— Robert Peterman, professor of civil engineering