

Ultrasonic Rail Testing

Union-Pacific Railroad has thousands of miles of track infrastructure. During maintenance and installation, it is critical to use stress-free rail conditions. The neutral temperature is the temperature at which a rail is neither in tension or compression. The difference between the designated rail laying temperature and the actual rail temperature at the time of installation is called the temperature differential. Laying and adjusting procedures have been long established to correct for this temperature difference. This is extremely important because rail that is not properly adjusted can bind or kink and lead to derailments. Currently, the only way to determine the neutral temperature is through verse testing. UP is sponsoring this project to understand if ultrasonic technology can be used to determine the stress state of rails by using the time required for the sound waves to travel through the rail or other similar means from ultrasonic data. The goal of this project would be to determine test scenarios, obtain relevant prototype data, and produce a report assessing the ability to determine stresses by ultrasonic testing.

Contact Information:

Name: Eric Gehringer, AVP – Track Systems

E-Mail: EJGEHRIN@UP.COM

Union-Pacific Railroad