

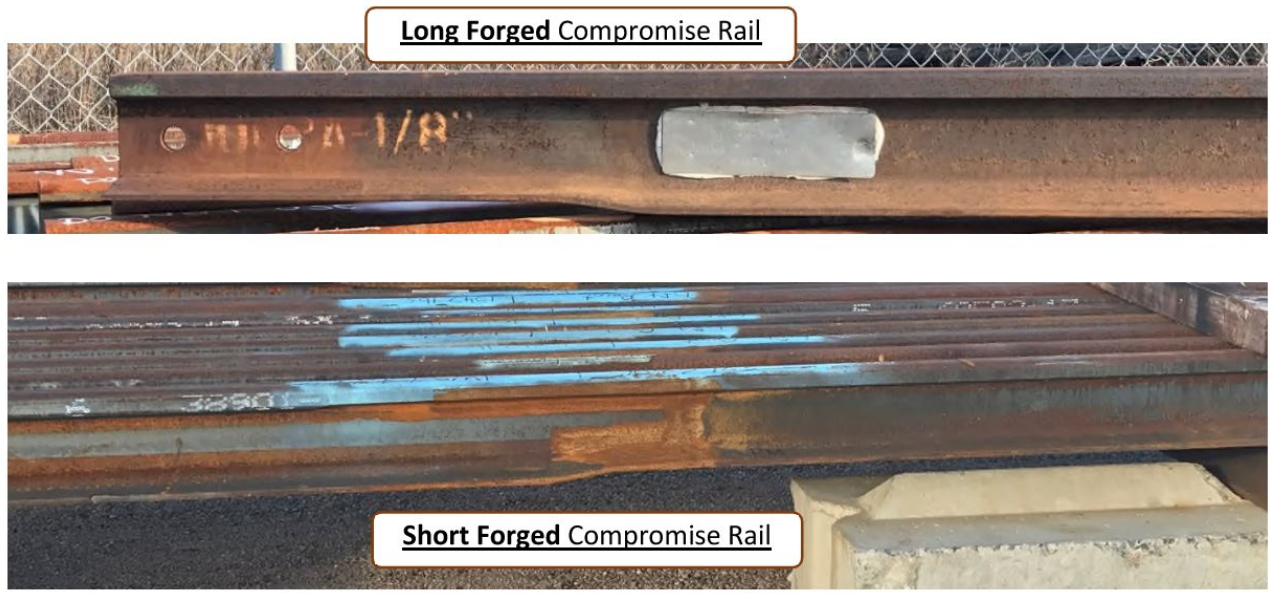
ENGINEERING DIRECTIVE - Defective Material

Issued by the Chief Engineer for Metrolinx

ACTION REQUIRED

Please distribute this alert to all employees and contractors and review the following:

Until further notice, due to a higher potential of failure, no Long Forged Compromise Rails manufactured between July 2013 to September 2015 are to be installed in Metrolinx track and/or welded. These rails are to be identified as “scrap” as per the GO Transit Track Standards and disposed of. In addition, no Long Forged Compromise Rails (regardless of manufacture date) are to be installed in Metrolinx track without written approval from the Director, Engineering - Track E&AM.



Note: “Long Forged” Compromise rails have a forged section of approximately twenty-two inches. They can be identified by having only a short length of the compromise rail in the smaller rail section. “Short Forged” compromise rails have rail weights that are typically evenly split between the two rail sizes and can continue to be used.

OVERVIEW:

After experiencing several failures across the industry, an investigation was conducted that found long forged compromise rails produced between July 2013 to September 2015 could have a latent defect in the forging. The defect, Insipient Grain Boundary Melting, can result in catastrophic failure of the components particularly after the application of heat experienced through the welding process. The failure mechanism is the development of a horizontal rupture or crack which develops at the weld prior to failing vertically, resulting in a broken rail. A failure of this type occurred on the Metrolinx owned GO Subdivision in August of 2023 within four days of installation of the compromise rail.