

## SERVICES

Durability Assessment  
Durability Testing  
Product Development

## KEY PERSONNEL

Neal Berke, Vice President – Research

## REFERENCE

Moshe Moked-Distek NA, LLC  
Inam Jawed, Sr. Proram Officer-TRB



**Flexural corrosion beams with cracks under testing.**

A new thermal zinc diffusion (TZD) coating for reinforced steel had its corrosion performance compared to conventional black bar, epoxy-coated, hot-dipped galvanized, A1035 (high strength low chromium) and stainless steel reinforcement. Metallography of the steels, concrete performance parameters, and corrosion performance were determined. The corrosion performance testing included polarization resistance and electrochemical impedance on highly stressed bars, and macrocell corrosion on cracked beams, as well as evaluation of corrosion on the various bars. The cracked beam corrosion test formed cracks in flexure that were held open, provided for a severe accelerated exposure. The beams were also subject to low frequency fatigue cycles. Analysis of the results showed that the new bars offered enhanced corrosion performance compared to black bar and were superior to galvanized bars.