

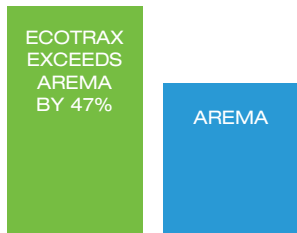


COMPOSITE RAILROAD TIES

# ECOTRAX® Exceeds AREMA Performance Characteristics For Engineered Polymer Composite Ties

## Modulus of Elasticity Flexural

**+47%**

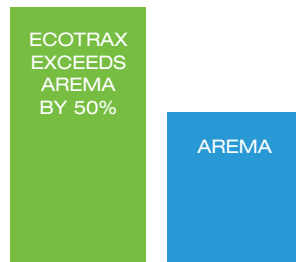


**ECOTRAX: 250,000 psi (avg)**  
**AREMA: 170,000 psi (min)**

AREMA Chapter 30, Part 2, Test 1C

## Modulus of Rupture Bending

**+50%**

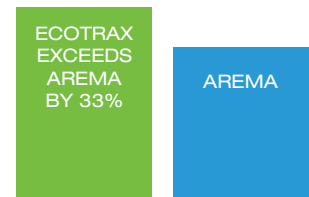


**ECOTRAX: 3,000 psi (avg)**  
**AREMA: 2,000 psi (min)**

AREMA Chapter 30, Part 2, Test 1C

## RAIL/PLATE AREA COMPRESSION: Compressive Strength

**+33%**

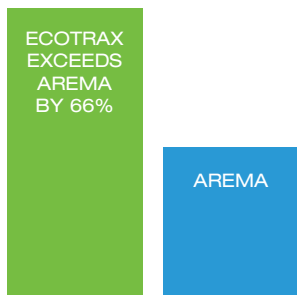


**ECOTRAX: 1,200 psi (avg)**  
**AREMA: 900 psi (min)**

AREMA Chapter 30, Part 2, Test 2

## RAIL/PLATE AREA COMPRESSION: Permanent Deformation

**+66%**

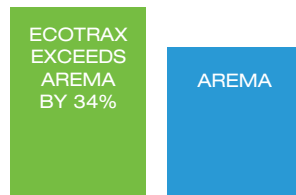


**ECOTRAX: 0.043 inch (avg)**  
**AREMA: 0.125 inch (max)**

AREMA Chapter 30, Part 2, Test 2

## Cut Spike Pullout

**+34%**

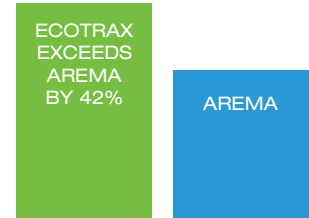


**ECOTRAX: 2,541 lbf (avg)**  
**AREMA: 1,900 lbf (8.5 kN) (min)**

AREMA Chapter 30, Part 2, Test 3A

## Screw Spike Pullout

**+42%**



**ECOTRAX: 7,103 lbf**  
**AREMA: 5,000 lbf (22.2 kN) (min)**

AREMA Chapter 30, Part 2, Test 3A