

## MATERIALS & RESEARCH DIVISION

Reviewed By:  
*R.F. Cauley*  
Robert F. Cauley, P.E.  
Materials and Research  
Engineer



Prepared By: *REB*

R.E. Brunelle  
Date: June 2, 1995  
Page 1 of 1

---

## RESEARCH UPDATE

---

U95-5

### TREX, A 100% RECYCLED COMPOSITE MATERIAL

#### REFERENCES:

Work Plan 90-R-15, Report U91-16 & Report U93-3

#### HISTORY:

TREX, a product of Mobil Chemical Company, was originally introduced to the Vermont Agency of Transportation in 1990 as Rivenite, marketed by Riverhead Milling, Inc. TREX is a 100% recycled product, composed of wood waste and re-processed plastic. The referenced work plan proposed the evaluation of the product, in the form of 16'x4"x4" posts as sign supports and in the form of 2"x4" and 4"x4" posts as structural supports in a high-humidity environment curing room for concrete.

Report U91-16, released in October '91, described the use of Rivenite for sign supports at an Interstate 89 rest area in Randolph and for five proposed sign installations, one on US Route 12 in Worcester and four on US Route 5 in East Ryegate. Though the results of these evaluations were never officially reported, it was apparent Rivenite was not appropriate for these applications and the installations were dismantled. The posts had required special measures for installation and warped severely under wind loads.

A second Research Update Report, U93-3 was released during January of 1993. At that time the rights to market the Rivenite product had been purchased by Mobil and it had been renamed, "TIMBREX". The report described preparations for the evaluation of the product's long term performance under structural loading conditions in a wet environment, the concrete curing room ("fog room") at the Materials and Research Lab. After two and a half years the evaluation has been terminated. TIMBREX (since renamed "TREX") was chemically stable under very moist conditions, showing no signs of discoloration or decomposition. However, it did become severely warped and showed some cracking which was probably load stress related.

#### CURRENT STATUS:

The TREX product has been approved for use by the Agency as an alternative choice for block-outs for steel beam guard rail with either steel or wood posts. It is also being evaluated by the Maintenance Division for use as drainage berms. Mobil has dropped its efforts to gain FHWA approval for the use of TREX as guard rail posts, recognizing that it is too expensive to compete with pressure treated wood.

Since the goals of WP 90-R-15 have been achieved, no further evaluation of TREX is planned at this time.