



## Detroit Intermodal Freight Terminal

### Detroit, Michigan

**APPLICATION:** The Canadian Pacific Railway (CPR) relied on the Spectra® Rail System to renovate its facility at the Detroit Intermodal Freight Terminal.

**THE CHALLENGE:** The facility's tracks and loading area are used by heavy-rail and vehicular traffic. To ensure a long service life with minimum maintenance costs, CPR wanted a stabilization solution that could deliver a combination of excellent foundation support and load distribution under very heavy loads.



*Installation of geogrid at the Canadian Pacific Railway facility in Detroit, MI.*

**SITE CONDITIONS:** Many of the existing intermodal railroad tracks had to be removed before work could begin. The contractor also had to excavate the existing ballast to eliminate contaminants such as pesticides and polycyclic aromatic hydrocarbons (PAHs). Conditions at the site were otherwise consistent with its historical use as an operating terminal facility.

**ALTERNATIVE SOLUTIONS:** The unstabilized design would have required importing and installing an additional 7 inches of ballast to meet predicted bearing capacity requirements. This approach would have added as much as \$400,000 of additional cost to the project.

**THE SOLUTION:** Tensar® International Corporation worked with CPR to develop a strong construction platform for the project with less excavation and ballast. The design called for stabilizing 27 inches of ballast with overlapping rolls of Tensar geogrid.

Following specifications from the project designers, the contractor's crew removed the existing materials and installed an 18-inch perforated, corrugated subsurface drainpipe along the perimeter of the work area. The exposed subgrade was then

### PROJECT HIGHLIGHTS

**Project:**

Detroit Intermodal Terminal

**Location:**

Detroit Intermodal Terminal

**Installation:**

1987

**Product/System:**

Tensar® Geogrid  
Spectra® Rail Railway Improvement  
System

**Quantity:**

72,960 square yards

**Owner/Developer:**

Canadian Pacific Railway Site leased  
from The Chessie System

**Materials Supplier:**

CONTECH Construction Products, Inc.

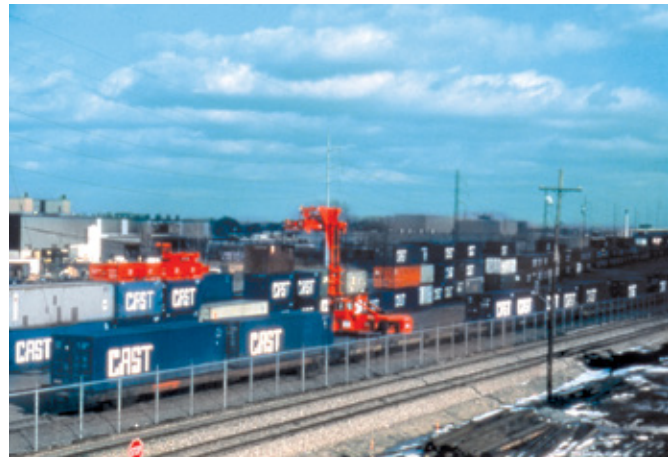
covered with filter fabric followed by 14 inches of compacted sub-ballast material. A layer of Tensor geogrid was placed directly on top of the sub-ballast. Each layer of geogrid was overlapped 24 inches at its edges and then covered with 13 inches of compacted railroad ballast.

The geogrid immediately confined the aggregate in place during construction and helped to eliminate waste. As a final step, the contractor installed a 4.5-inch thick asphalt wearing layer in the facility's loading/unloading areas. New track lines were later installed in the other areas. With the Spectra Rail System, work on the line was completed three weeks ahead of schedule and with a significant reduction in material and labor costs

**SPECTRA® RAIL SYSTEM ADVANTAGE:** The CPR benefited from the Spectra Rail System by substantially reducing the construction time and costs associated with renovating the intermodal facility. The company was able to improve subgrade strength and durability by spreading the load over a wider area and reducing the pressure exerted on the subgrade. The CPR gained these advantages even while reducing the required ballast thickness. Overall, the method of installation was simpler, faster and less expensive than that offered by using conventional construction.

**ADDITIONAL INFORMATION AND SERVICES:** Tensor International Corporation, the leader in geosynthetic soil stabilization, offers systems for improving structures such as roadways, rail yards, construction platforms and parking lots. Our products and technologies, backed by the most thorough quality assurance practices, are at the forefront of the industry. Highly adaptable, cost effective and installation-friendly, they provide exceptional, long-term performance under the most demanding conditions. Our support services include site evaluation, design consulting and site construction assistance.

For innovative solutions to your engineering challenges, rely on the experience, resources and expertise that have set the industry standard for three decades.



*The completed facility subjected to severe loading.*

**For more information on Tensor Geogrids or other Tensor Systems, call 800-Tensor-1, email [info@tensarcorp.com](mailto:info@tensarcorp.com) or visit [www.tensarcorp.com](http://www.tensarcorp.com)**

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