

Asphalt Delivers:

Speed of Construction & Reliability for Heavy-Duty Applications



Heavy-duty asphalt mixes provide pavement structure for severe loading and high stress conditions used in heavy-duty pavement applications. These pavements are subjected to high repetitions of heavy loads and comprise industrial facilities, haul roads, major arterial roads, and most roads in the interstate highway system.

Award Winning Rail Yard

The BNSF Railway Company's Denver, Colorado facility transfers rail cargo containers to trucks using forklifts. Recently they partnered with paving contractor, Brannan Sand & Gravel, to replace failed roller-compacted concrete. This \$520,000 project included full depth ½" and ¾" stone-matrix asphalt and was completed in 90 working days.

The BNSF Railway project was recognized with a "Best in Colorado" Quality Award due to its superior pavement quality and speed of construction. "This award is well deserved and speaks to the commitment to quality from Brannan Sand & Gravel Company and the excellence in oversight and partnering from BNSF Railway Company. Asphalt is the pavement of choice for successful heavy-duty applications," stated Tom Peterson, Executive Director, Colorado Asphalt Pavement Association.

Heavy-Duty Application Tips

- ✓ **Structural Design.** Proper structural layer design plays a vital role in handling the stresses and strains that a pavement experiences under repetitive traffic loads, multiple wheel load configurations, high tire pressures, and thermal cycles.
- ✓ **Layer Stiffness Properties.** The pavement layers should have:
 - Adequate stiffness (high modulus) to resist rutting.
 - Sufficient thickness to handle bending forces from heavy wheel loads.
 - High fatigue strength and low air voids/high density of the asphalt base layer to resist fatigue cracks.
- ✓ **High Stresses.** Heavy-duty mixtures can be designed to handle high stresses exerted by wheel loads and to withstand thermal stresses due to extreme weather conditions.

