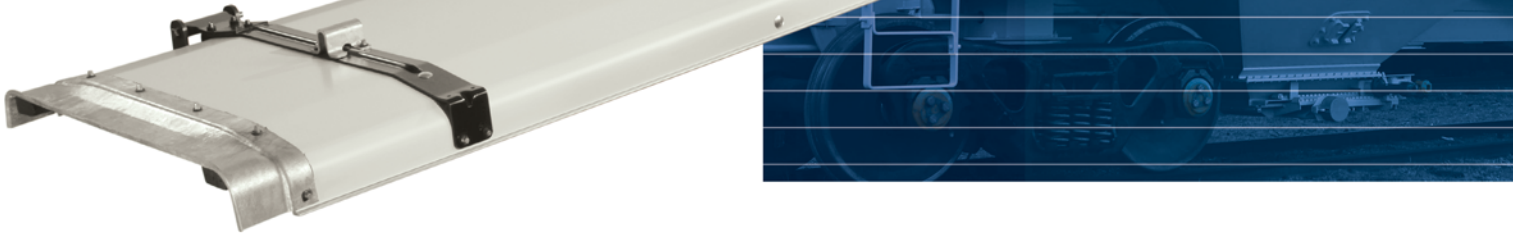


Composite Cover System for Trough Hatches

Top-To-Bottom Coverage

The longtime leader in hopper car outlet design and manufacture, Miner now covers the car from top to bottom. Introducing DuraShield™ hatch covers available in both round and square end-cover configurations to accommodate most 24" trough designs and are available in all standard lengths. Our guiding principle of providing full-featured, innovative designs is embodied in the DuraShield.



Durable Design – Low Weight

The DuraShield hatch cover is constructed of a high performance aluminum composite material (aluminum skin top and bottom and a solid polyethylene core) over a rigid frame. The result is a light weight profile cover system that is more durable than fiberglass and lighter weight than all-aluminum hatch covers.

The Miner DuraShield low profile design measures less than 2" above the coaming. The inch and a quarter difference in cover height over standard fiberglass hatch covers allows carbuilders to maximize the car design and car capacity while remaining within AAR Plate C clearance.

Meets or Exceeds AAR S-2037-92

The Miner DuraShield hatch covers not only pass all the tests required by the AAR Standard, they significantly exceed the requirements in two key areas.

Miner's covers deliver one and a half to two times (7-9 lbs.) the specified gasket resistance both before and after all other tests including flexure and deflection.

Miner's gasket also doesn't peel away until almost three times (280 lbs) the specified force is applied.

FEATURES

- Aluminum composite is lighter than aluminum and more durable than fiberglass.
- High-strength support straps reduce hinge stress for longer life.
- Patent pending rigid frame design provides more consistent seal.
- Low profile design, less than 2" above the coaming.
- Designed to meet or exceed AAR specification S-2037-92.
- Gaskets stay in place at all temperature extremes. They are three times stronger than the AAR requires.

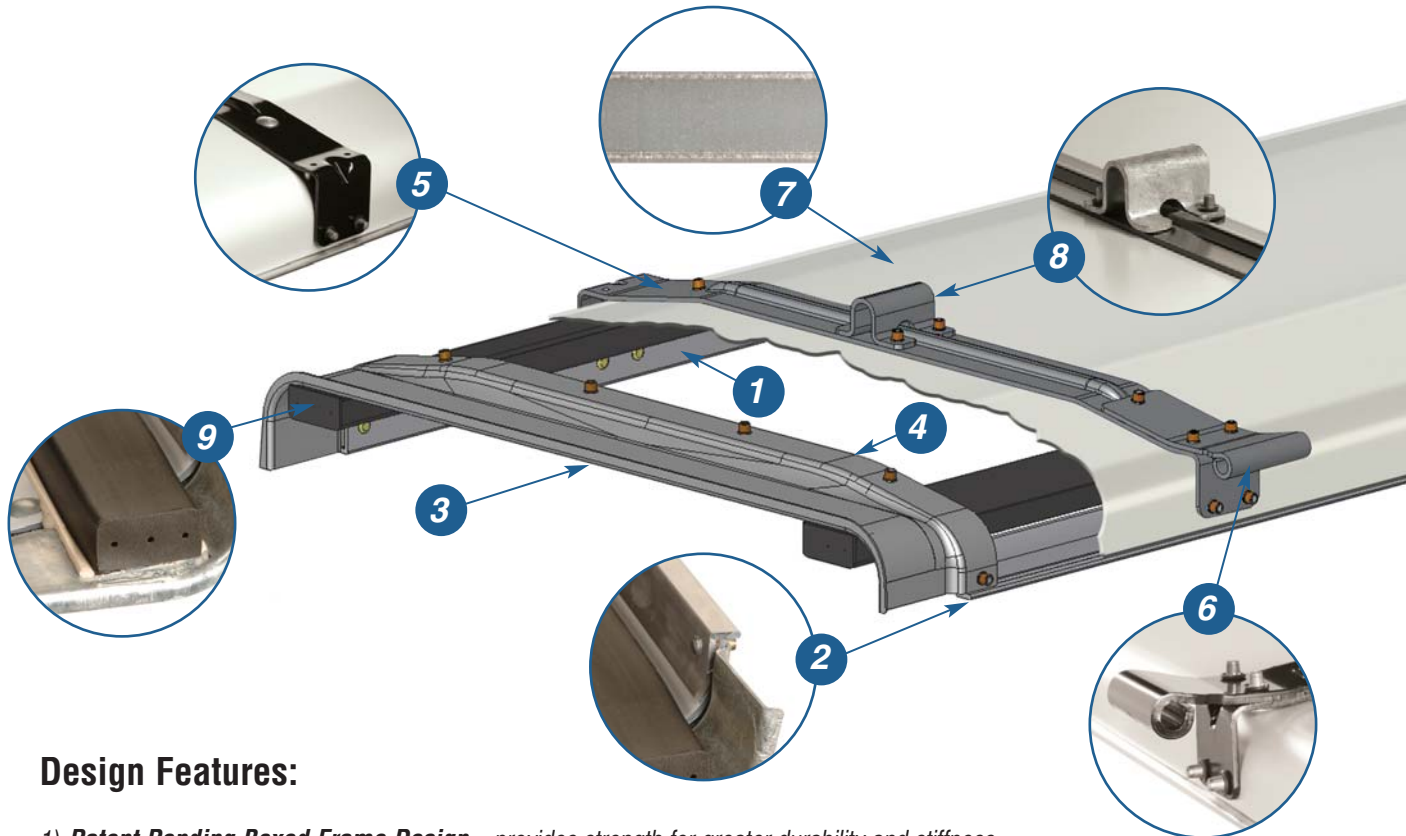


W. H. MINER DIVISION

Perfecting Railcar Performance

The New DuraShield™ Hatch Cover

Enhanced Reliability in a Low-Profile Design



Design Features:

- 1) **Patent Pending Boxed Frame Design** – provides strength for greater durability and stiffness.
- 2) **Full-length 3/16" Aluminum Angle** – reinforces cover edge protecting it from damage during opening, and resists end-to-end distortion for a consistent seal.
- 3) **High Strength Steel Cross Members** – form the end of the frame and resist damage from the batten bars.
- 4) **Permanently Flexible Adhesive** – bonds cross members to the cover filling the joints before huck fasteners are applied to prevent leaks.
- 5) **Support Straps** – extend down the full depth of the profile helping to prevent bowing of the vertical legs of the cover while dispersing the stress from the hinges increasing the life of the cover and minimizing leakage.
- 6) **Hinges** – fasten directly to the support straps minimizing leakage and/or cracking.
- 7) **High Performance Composite Material** – aluminum skins and solid polyethylene core provides an excellent strength-to-weight ratio for a lighter weight, more durable cover.
- 8) **Bumper** – optional bumper adapts to varying car designs to allow cover to lay flat when open.
- 9) **Gaskets** – stay in place at all temperature extremes. They are three times stronger than the AAR specification requires.

Perfecting Railcar Performance



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