

Application Case Study

Shipping Rack: Truck Bumper Rack - Dunnage

Application:

The shipping container is comprised of a steel rack frame with plastic nesting posts. Truck bumpers are loaded into the rack and seated over the black plastic posts. The bumpers are unrestrained in the rack. The bumpers are shipped by truck and by rail from the bumper manufacturer to several assembly plants.

Problem:

During truck and rail shipments, the bumpers were climbing off of the nesting post and becoming dislodged from the rack. The dislodged bumpers were scratched or damaged and often collided with other bumpers in the rack. The loose bumpers complicated the unloading of truck and railcar shipments. The rack is due to be retrofit in order to accommodate a new bumper design. All bumper nest posts would be removed during the rack conversion and new posts replaced.

Solution:

The blue boot was developed to fit the contour of the bumper frame of the current bumper and of the new bumper. Instead of having two separate nesting posts, PFP engineers designed one boot to accommodate both bumpers. The material is a vibration dampening thermoset urethane. The boots reduce the vibration and movement of the bumpers and eliminated the problem of the bumper becoming dislodged. The slip-on boot design allowed for easy installation and reduced the overall cost of the rack conversion.

Cost savings / Benefits:

- Eliminated part damage
- Eliminated ergonomic issues and reduced labor when unloading racks
- Slip-on design reduced labor cost of rack conversion by 60%
- Total estimated project savings **\$550,000.00**

