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Using Truck-Mounted Ladder Racks Safely: *Minimizing Damage to Transported Ladders*

Many tradespeople use truck-mounted carriers to carry extension ladders to and from jobs. Painters, electricians, arborists, roofers, radio and TV repair people, carpenters, masons, and many others use roof mounted racks on vans or trucks, securing the ladder to the rack using ties or bungee cords. The normal concern is that the ladder doesn't become loose to the point where it can fall off the vehicle. But a greater potential hazard is the shock stress placed on the ladder rails from bouncing up and down on the rack, where part of the ladder is overhanging the rack and unsupported. The relatively loose attachments which secure an aluminum ladder to a steel rack can transmit road vibration and shock to the ladder side rails.

In its standard *Safety Requirements for Portable Metal Ladders* (ANSI A14.2-1990) the American National Standard Institute recommends that supporting points for overhanging ladders be "of a material such as wood or rubber-covered iron pipe, to minimize chafing and the effects of road shock. Securing the ladder to each support point will greatly reduce damage due to road shock." Triodyne, Inc. conducted tests on two 32-foot aluminum ladders (16 feet in length when retracted) situated so that they had a 6' overhang. The results showed that the loosely tied ladder suffered a 13% reduction in side rail depth, while a tightly secured ladder had less than a 1% reduction in rail depth.

In addition to tying the ladder securely at each support point and using a "soft" material at the support points, the following steps can be taken to

minimize the damage caused to ladders transported on racks:

- Limit overhang
- Use custom-designed racks for special ladders
- Provide a "softer" ride by having an appropriate set of springs
- Secure the ladder feet from pivoting about the ladder while the truck is in motion

The hazard of this "wear and tear" can be appreciated when one recognizes that some ladders that have failed during use have failed at the exact point where the damage described above was inflicted. The failures occurred even though the ladders were being used in an otherwise "safe" manner. If a ladder collapses when a worker is 25 feet above the ground, serious and even fatal injuries can result. Many falls from 10-12 feet are fatal or result in serious injuries. Falls can be fatal even from as low as five feet.

A ladder inspection program should be part of your safety program. Conduct monthly inspections of all ladders. Some practical risk management guidelines are:

- Carefully* inspect the ladder prior to using it.
- Never use a damaged, bent, or broken ladder.
- Destroy a ladder if it is broken or worn, or if it has been exposed to fire or chemical corrosion.

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