

**Case 468. 45-year-old maintenance worker died when he was struck by an exploding multi-piece tire rim.**

A 45-year-old male maintenance worker died when he was struck by an exploding multi-piece tire rim. The decedent was a member of a three-person work crew. The crew was in the process of mounting a flat driver's side front tire on a Terex front end loader. The tire size was 20.5 x 25 with a weight of approximately 400-600 pounds. The crew had placed a bottle of "Green Slime" tire leak sealant in the tire and while the tire was on the rim, sprayed an ether-based starting fluid into the tire. One of the crew members lit the starting fluid with a hand-held propane torch, which caused the tire to expand and seat against the wheel bead. The decedent stood in front of the tire and used an air hose from a nearby semi to inflate the tire. The air hose did not have a clip-on chuck. During tire inflation, the outside portion of the multi-piece rim and the tire blew off, striking the decedent's neck and propelling him approximately 10 feet from the loader. The coworkers called for emergency response and attempted to provide first aid.

MIOSHA General Industry Safety and Health Division issued the following Serious violations at the conclusion of its investigation.

SERIOUS: MICHIGAN OCCUPATIONAL SAFETY AND HEALTH ACT, ACT 154, RULE 408.1011(a): Furnish to each employee, employment and a place of employment that is free from recognized hazards that are causing, or are likely to cause, death or serious physical harm to the employee.

Employees were spraying starting fluid (ether) into a tire and igniting it with a propane torch to set the tire on the bead; the tire on the Terex Front End Loader, in the yard area.

Among others, feasible and acceptable method to correct the violation is to follow the mounting, demounting and safety precautions outlined in the Servicing Multi-Piece and Single-Piece Rim wheels Manual from the manufacturer or other qualified organization.

SERIOUS: AUTOMOTIVE SERVICE OPERATIONS, GI PART 72

- RULE 408.17235(1): An employer shall ensure that each employee who is engaged in servicing Multi-Piece and Single-Piece Rim wheels demonstrates and maintains his or her ability to service the rims safely and in accordance with these rules.

There was no training conducted on servicing a multi-piece rim wheel for the Terex Front End Loader in the yard area.

- RULE 408.17235(2): During rim wheel servicing, a clip-on chuck with a sufficient length of hose to permit the employee to stand clear of the potential trajectory (see figure 1) of the wheel components and an in-line valve with a gauge or a pressure regulator preset to the desired pressure shall be furnished by the employer and used to inflate tires.

A clip on the air chuck was not utilized when inflating a multi-piece rim wheel mounted on a Terex Front End Loader in the yard area.

- RULE 408.17236(5): On multi-piece rim wheels, tires shall be inflated only when constrained by a restraining device, except when the wheel assembly is on a vehicle. Tires may be inflated without being constrained by a restraining device if remote control inflation equipment is used

and no employees remain in the trajectory path during inflation in either of the following situations:

- (a) Tires are underinflated, but have more than 80% of the recommended pressure.
- (b) Tires are known not to have been run underinflated.

An employee was standing in front of a tire mounted on a Terex Front End Loader in the yard area while airing tire during repair of a leak.