

## Safety Flash

### Incident with injury

**Incident:** The crew was mixing epoxy-based grout in a pit adjacent to equipment which was to be grouted. The grout requires constant mixing while combining two-part epoxy and during the addition of aggregate. To prepare the third batch of grout, the laborer was emptying the last of six 32-pound, plastic-lined paper bags of aggregate into the mixing tub, a 55-gallon plastic drum which had been cut in half horizontally. The plastic-lined paper bag became caught in the rotating shaft of the mixing paddle attached to a ½-inch drill motor. As the bag wrapped around the shaft, it pulled the laborer's right index finger with it. The finisher immediately released the trigger on the drill and helped the injured worker.

#### **Possible contributing factors:**

- Due to the small batch size and location of the work, the crew decided to use the 55-gallon drum and ½-inch drill with paddle mixer, instead of a mortar mixer.
- The grout requires constant mixing, so the paddle was rotating as aggregate was added.
- The mixing area was tight between the pit walls and equipment, requiring the workers to stand close together when they normally would have been opposite each other.
- Although the finisher leaned the shaft of the paddle against the side of the barrel to give the laborer more room to add the aggregate, the bag caught in the rotating shaft.

#### **Primary contributing factor:**

The grout requires constant mixing so the paddle was rotating as aggregate was added.

#### **Possible solutions:**

- If mixing must be constant, put bagged material in a bucket before adding it to the mixer.
- If constant mixing isn't required, shut off the mixer when adding bagged material.
- Plan for spacing workers to prevent contact with mixing equipment.
- Have a worker fill aggregate in buckets on top and hand down to eliminate material-handling and emptying bags in a tight area.
- Consider choosing material that doesn't require constant mixing. .

#### **Action plan:**

- If continuous mixing is required, the crew will consider putting bagged material in buckets to keep the bag away from the mixer and paddle.
- If constant mixing isn't required, the crew will consider shutting off the mixer and/or paddle when adding material.
- During pre-task planning, all crew members will discuss the product, address material-handling issues, and recognize and eliminate hazards.
- The project team will investigate alternative products which meet the project requirements, and do not require continuous mixing.

#### **Keep improving**

Your health and safety are our core value on every project. If you see a way we can support you in keeping our job sites safe, see your supervisor or contact: Jim Philo, 419/654-2043; Rich Franklin, Michigan, 734/679-7283; Alan Doane, Cleveland, 440/429-0639; Rick Wallace, Lima, 419/705-9170 or Mark Hoffman, 419/360-9280.