



# Safety Alert

From the International Association of Drilling Contractors

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ALERT 02 – 33

## HAND-HELD ANGLE GRINDER INJURY

### WHAT HAPPENED:

A rig welder was working on the rig floor modifying the rotary guard. While dressing a weld with a hand-held angle grinder, the grinding wheel shattered. One piece of the grinder wheel struck the welder's left leg just below the knee causing a 2" cut requiring 6 stitches to close. The injury has been classified as a restricted work case.

### WHAT CAUSED IT:

The hand-held angle grinder had been modified. Modifications included: by passing the on/off switch and removing the deflector guard. The deflector guard serves to direct flying debris away from the operator and in this case would have directed disc shards away. Another contract welder was found to have another hand-held angle grinder in his tool box with the same modifications. This grinder was also removed from service. Grinding discs on site were checked and found to be rated above the RPM rating for the hand-held angle grinders on location. This is important because if the grinding disc is rated at a lower RPM than the grinder, the disc could explode and throw pieces into the work area.

**CORRECTIVE ACTIONS:** To address this incident, this company issued the following instructions to all personnel:

- Grinders and grinder discs can be ordered in a variety of rated RPMs, so be certain the disc matches or exceeds the rated RPM of the grinder.
- A problem associated with the portable hand grinders mobility is that they are prone to being dropped. Dropping an angle grinder could crack the grinding disc resulting in it flying apart while being used. Anytime a hand-held angle grinder is dropped, inspect the disc for damage and perform the ring test before using. If there is any doubt about the integrity of the disc, replace it immediately.
- The Ring Test. Take the disc in the one hand, holding it by the arbor or by placing a finger into the tapped plate hole and tap the disc with the wooden handle of a screwdriver. Tap at a 45 degree angle from vertical, about 1-2" from the periphery of the disc. A disc in good condition (without cracks) should give a clear, metallic ring when tapped, though the pitch will vary from discs of various grades and sizes.
- Breakage could also occur if the disc is taken from a cold room and pressure applied before it is allowed to warm up. Store grinding discs in a dry, warm place and allow the grinder to run for a minimum of one minute before starting any grinding.
- No modifications to grinders are allowed, without manufacturer's approval.
- Proper eye protection is goggles or a face shield with goggles. Safety glasses are inadequate protection (worn with or without a face shield) and a face shield is inadequate without goggles.

**IADC Note: See Alerts 00 – 34 and 01 - 06**

**The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.**

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