



SAFETY UNLIMITED, INC.

# Weekly Safety Meeting

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## Concrete Cutting Safety

During renovation and expansion projects, there is frequently a need to cut into concrete, whether to eliminate an existing area or to create a space for pipes or wiring.

People who regularly work with concrete and masonry drilling and cutting equipment are at high risk of a wide range of hazards, like silica dust, saw kick back, toxic exhaust fumes, collapsing walls, blade fracture, electrocution, noise pollution, vibration, slips, falls etc.

### Risks and Hazards:

Some hazards are quite common and widely witnessed in all types of concrete cutting and drilling, albeit there are some hazards specific to particular types of devices, like:

- Push-Back, Kick-back, or Pull-in – These are potentially fatal forces, experienced suddenly, and often difficult to manage. Such conditions can lead to injury when quick cut concrete saws and hand-helds are used. It may also wrench the saw from its fittings leaving the saw running on the ground freely.
- Obstructions in the Concrete Being Cut – Such obstacles can lead to sudden back-push, back-kick or pull-in movements of the device. They occur when the blade comes in contact with some resistance within the masonry or concrete like from reinforcing steel mesh, bars, or brick ties.
- Pinched Cuts – These cuts occur when the material being cut moves from its place, leading to an increase in the risk of kick-back, etc.
- Off-line Cuts – Such situation can make the saw pinch or bite and that may lead to push-back, kick-back, and pull-in movements.
  - These occasions are mostly experienced working with hand-held saws.
- Blunt Cutting Edges – This situation is encountered when a saw blade has a wrong diamond cutting bond. In this situation the bond holds the cutting diamonds together too hard and it leads to delay in the cutting process that may lead to the surface diamonds getting blunt.
  - In this situation, some additional force is applied particularly with hand-held saws, thus catapulting the probability of push-back, kick-back, or pull-in.
- Worn, Damaged Saw Blades, or Inappropriate Blade – These can make the blade vibrate, wobble, shatter, or fragment and often fly off. Blades get disintegrated when force is applied if the blade is dull and when any obstacle is met, which may lead to incorrect cutting groove.

- Hazardous Dusts – Such dusts are generated by cutting and drilling equipment that perform dry operations and do not apply water for cooling purpose of the cutting parts to bed the dust.
- Cutting Concrete Pipes – For this activity, some special safety procedures should be taken to prohibit the pipe from moving while cutting, specifically when a handheld saw is used.
  - A hazard during pipe cutting can be the pressure from the increased flange at the pipe-end resulting in closing and pinching the saw blade, resulting in blade shatter or kick-back injury.
- Toxic Fumes – In the lack of proper ventilation, gas motor emissions packed with carbon monoxide and other harmful gases can generate fumes to hazardous levels.
- Electric Cables, Water or Gas Pipes – Exposing utility services, particularly in existing structures, can expose the operator to the risk of electrocution, slipping, and open to toxic gases or often explosion too.
- Power Cords – When linked with electric-powered cutting devices and other equipment, these may often be damaged.
  - Reservoir of water coolant and suspension could lead to electrocution because of an exposed wire.
- Uneven Surfaces – Such a situation can enhance the risk of tripping and stumbling of the operator, leading to an unusual movement of the saw resulting in kick-back.
  - Wet, Slippery Surface – This condition of having slurry or water on floors can make the operator slip and fall.
- Vibration – Whole body or arm vibration, if borne for a long time by using drilling and cutting device, may result in nerve, joint, and circulatory damage.
- Working Alone – Working without any assistance may be a risky bet as this activity could require assistance in case of any urgency or injury.
- Noise – High decibel of noise emerged from concrete cutting or drilling is a potential workplace hazard.

### **Summary:**

As with most construction tasks, cutting concrete is inherently hazardous. But ensuring that you have the right training for the equipment you're using, performing a hazard assessment before each task, and ensuring you're wearing the correct PPE will go a long way toward minimizing the danger and potential for injury.

**“RESPECT THE UNEXPECTED...THINK THROUGH YOUR RISKS.”**

