

SAFETY ALERT



CONCRETE PUMP- HOSE WHIP

'Hose whip' is a term referring to the rapid, uncontrolled movement of the rubber hose attached to the end of a concrete placement boom or concrete delivery line.



Understanding why hose whip occurs and measures to prevent injury will ensure a safer workplace and may even save a life.

Hose whipping accidents are one of the most common accidents associated with operating a concrete pump. Air trapped in the delivery system is a common cause of hose whippings as a result of higher horsepower and pump pressures available in today's equipment. Air can be introduced into the delivery system by various means: when the pump is started initially; restarting after a move; allowing the concrete level to fall below the valve; after removing a blockage; or allowing concrete to free fall after the pump is shut off.

Air in the delivery system by itself poses no particular hazard; e.g. whenever delivery system is cleaned out, it's full of air. It's only when the air is compressed, thereby storing energy, that a hazard is created. Injuries and sometimes death to placing crew personnel have occurred when this trapped air is momentarily compressed and then released causing the hose to whip violently.

To reduce the likelihood of injury from hose whip:

- ALWAYS wear appropriate PPE
- NEVER attach metal fittings to the free end of the rubber delivery hose
- GOOD housekeeping needs to be maintained around the work area to reduce the likelihood of tripping
- ONLY pump concrete that is a pumpable mix as specified by the concrete supplier - other types of concrete can block in the line and cause hose whip
- ENSURE a separate person to the line hand is in position to view the hopper and shut the pump down if there is a likelihood of air being sucked into the line - it should not be the task of the concrete delivery truck driver to do this
- ONLY allow the line hand to be in close proximity to the delivery hose
- USE experienced operators to pump concrete and start the pump slowly
- ALWAYS ensure the line hand has an adequate sized area to stand on - the width of the working surface should be 450 mm or greater
- NEVER try to stretch the delivery hose if it doesn't reach the pouring location
- IF the boom is not long enough to reach, a larger boom should be used or the concrete pump should be moved closer
- DO NOT let more hose hang from the boom than that allowed by the placement boom manufacturer
- DO NOT allow concrete to drop out of the hose when pumping is stopped, this can allow air to enter the system - always clamp hose when stopped
- DO NOT let the concrete solidify in the line - this will cause blockages
- WHEN cleaning the pump line out with air, secure the end of the line and have an exclusion zone - the rubber hose should be removed from the end of a boom when doing this.