UNC CHARLOTTE
Department of Engineering Technology

LABORATORY SAFETY ANALYSIS

OPERATING A CONCRETE MIXER

Location: Smith 135

Required Training: A concrete mixer is designed and intended for use by properly trained and experienced operators. If you are not familiar with the proper and safe operation of this device, do not use until proper training and knowledge have been obtained.

Required Personal Protective Equipment (PPE): Safety glasses, closed toed shoes, dust masks

Reference Materials: Manufacturer's safety rules and operating instructions

PHOTOS	TASK	HAZARDS	CONTROLS
 	Remove all jewelry. Wrap long hair in net. Ensure clothing is sturdy and snug. Loose clothing, gloves, neckties, rings, bracelets, or other jewelry may get caught in moving parts.	Caught in mixer	• Do not wear any jewelry that may get caught in the blades or moving parts. • Do not wear gloves when operating the concrete mixer. • Loose clothing may get caught in moving parts.
	Wear clear safety glasses with side shields.	Flying debris and dust particles	• Students are required to provide their own safety glasses. • See laboratory instructor or laboratory manager if you do not have safety glasses before proceeding to use equipment.
	Inspect safety glasses for cracks, scratches or other damage. Ensure the ANSI standard Z87.1 is stamped into the side of glasses. If necessary inspect dust mask or face mask.	Flying debris and dust particles	• If defects are found report this to your lab instructor before using.
	Put on PPE	Flying debris, dust particles, and falling objects.	• Always wear safety glasses. • Use a dust mask when working under dusty conditions. • Do not wear gloves whenever putting samples into or removing samples from the mixer. • Always wear closed toed shoes to avoid injury from dropped samples.

	Inspect work area, walk around apparatus looking for debris and ensure proper lighting.	Slips, trips & falls, struck by	• Keep the work area around the mixer free from loose aggregates, dust, oil and grease. • It is common practice to wet down the area where the mixer will be used with water to control dust and prevent cement materials from sticking to the laboratory floor.
	Visually inspect the electrical connection.	Electrical shock	• If the electrical connection is damaged or worn the main cut-off should be switched off and tagged "Out of Service-Do Not Use". • This should be reported to the laboratory manager immediately.
	Inserting mix materials	Flying debris, dust particles, and falling objects.	• Always wear safety glasses and dust masks when loading mixer. • Make sure the mouth of barrel of the mixer is pointing upward and prepared to receive mix materials. • Make sure the barrel is locked in-place before the placement of any mix materials. • Place mix materials in barrel in stages so as not to over load the barrel.
	Turn on mixer	Electrical shock, pinch points	• Always wear safety glasses when operating mixer. • Keep fingers, hands, hair away from the mixer drive systems when in operation. • Make sure when the barrel lock is disengaged that the operator has full control of the barrel. • The barrel should be locked at all times and never leave the mixer unattended.
	Removing batched mix	Flying debris, pinch points and falling objects	• Observe all PPE requirements when removing samples from mixer. • Use care when transferring mixed materials from barrel to other handling devices (wheel barrel, cart, etc.)
	Turn off mixer	Heat hazards	• When all testing is completed, turn off mixer at switch and unplug.
	Clean work area and return all PPE to a clean, dry storage area.	Injury	• Ensure adequate housekeeping measures to prevent accidents. • Remove any samples to a safe storage area.

For more information about this LSA, contact the *Department of Engineering Technology* at UNC Charlotte (704) 687-2305
Please visit our website at: http://www.et.uncc.edu\

The development of Laboratory Safety Analyses is a very effective means of helping reduce incidents, accidents, and injuries in the workplace. It is an excellent tool to use for training purposes and can also be used to investigate "near misses" and accidents.