



UNC CHARLOTTE

Department of Engineering Technology

LABORATORY SAFETY ANALYSIS

OPERATING A SAMPLE EXTRUDER



Location: Smith 131

Required Training: Sample extruders are designed and intended for use by properly trained and experienced operators. If you are not familiar with the proper and safe operation of this type of apparatus, do not use until proper training and knowledge have been obtained.

Required Personal

Protective Equipment (PPE): Safety glasses, dusk mask in dusty work conditions, leather gloves when handling hot or cold samples, and closed toed shoes.

Reference Materials: Manufacturer's safety rules and operating instructions

| PHOTOS | TASK | HAZARDS | CONTROLS |
|---|--|----------------------------------|--|
|  | Wear clear safety glasses with side shields and if necessary use a dust mask and leather gloves when handling hot or cold samples. | Flying debris and dust particles | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> If defects are found report this to your laboratory instructor before using. |
|  | Put on all necessary PPE | Flying debris and dust particles | <ul style="list-style-type: none"> Always wear safety glasses. Use a dust mask in dusty work conditions. Always wear closed toed shoes to prevent injuries to ones feet. Wear leather gloves when handling hot or cold samples. |
| | Inspect work area, walk around saw area looking for debris and ensure adequate lighting. | Slips, trips & falls | <ul style="list-style-type: none"> Remove any debris that could possible cause a injury. Keep work space around compactor free from old soil and aggregate, oil or grease. Make sure the sample extruder is located on a level surface, with plenty of clearance for proper operation. |
| | Visually Inspect extruder | Cut, injury | <ul style="list-style-type: none"> Ensure that the proper sized top plate matches the size of the sample mold to be extruded. |

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| | | | <ul style="list-style-type: none"> • Ensure that the correct size piston adapter is used and matches the sample mold to be extruded. |
| | Operating extruder | Struck by flying debris, pinch point Injury, falling objects | <ul style="list-style-type: none"> • Devote your individual attention to the work being performed. • Take care to properly place and locate sample mold within extruder. Make sure the sample mold is properly seated within the top plate and centered on the drive piston. • Do not attempt to jack sample using extruder if proper alignment is not maintained. (Release hydraulic pressure if test specimen begins to bind as it is extruded.) |
| | Remove extruded material | pinch point Injury, falling objects | <ul style="list-style-type: none"> • Use care when removing extruded sample from mold. Carefully secure the mold above the jack before removing the test sample. • Release the hydraulic pressure within jack to allow the piston to retract into the cylinder first then remove sample mold from the jack. • Clean all surfaces before attempting to extrude another sample. |
| | Clean work area and return all PPE to clean, dry storage area. | Injury | <ul style="list-style-type: none"> • To ensure adequate housekeeping measures to prevent accidents. |

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.