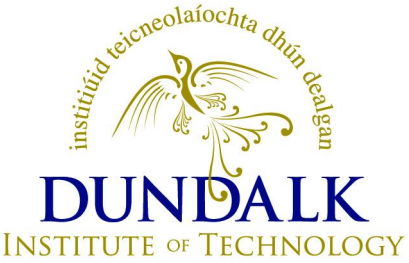


School of Engineering

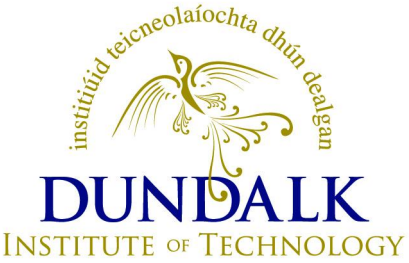
Dept of Construction & Surveying

Health and Safety File

Laboratories
S122, S125

File 1

Rev: April 2016



School of Engineering

Dundalk Institute of Technology

Ancillary Safety Statement

April 2016

This Ancillary Safety Statement is to be read in conjunction with the Parent Safety Statement of Dundalk Institute of Technology

Table of Contents

1. Introduction

Under the provisions of The Safety, Health and Welfare at Work Act 2005, Dundalk Institute of Technology is required to ensure so far as is reasonably practicable the health, safety and welfare of all its employees and students engaged in work or study, and all visitors to the Institute premises.

In view of the recent extensive expansion that has taken place on the campus and in order to comply with the requirements of the 2005 Act, the Institute has decided to review and update its Safety Statement. Dundalk Institute of Technology's safety management programme consists of a Parent Safety Statement supplemented by seven ancillary Safety Statements, which apply to different functional areas of the Institute. These ancillary Safety Statements take account of the diverse range of activities, which apply across the Institute.

The Institute's overall Safety Statement is comprised of the following documents:

- Parent Safety Statement
- Ancillary Safety Statement – School of Business & Humanities
- Ancillary Safety Statement – School of Health & Science
- **Ancillary Safety Statement – School of Engineering**
- Ancillary Safety Statement – School of Informatics & Creative Arts
- Ancillary Safety Statement – Secretary/Financial Controller's Functional Area
- Ancillary Safety Statement – Registrar's Functional Area
- Ancillary Safety Statement – Regional Development Centre Functional Area
- Emergency Evacuations Procedures Manual

The purpose of the Ancillary Safety Statements is to provide details of the specific hazards and control measures which apply in these areas. Each Ancillary Safety Statement should be read in conjunction with the Parent Safety Statement.

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2. General Statement of Policy within the School of Engineering

The School of Engineering Functional Area is committed to ensuring that high standards of health and safety are achieved and maintained throughout all areas under our control. The key mechanism for achieving and maintaining safety is Risk Assessment, by which we identify hazards, which have the potential for harming health or causing accidents, evaluate the risks arising and select and implement appropriate precautions.

Throughout the School of Engineering Functional Area, Risk Assessments are carried out in all areas under our control periodically. Risk Assessments must take account of any changes with regard to the structure of the organization, Academic Staff, work practices; use of machinery, design techniques or equipment all may necessitate periodic changes to this document as well as any periodical amendments or updates to legislation.

It is essential that all staff and students contribute and cooperate to this process, thus ensuring that the School of Engineering Functional Area's stated objective of providing in so far as is reasonably practicable a safe place of work is achieved. Employees are encouraged to contribute to the improvement of health and safety by making suggestions to their departmental manager. The success of this policy depends on the co-operation of all staff and students, and it is therefore extremely important that staff:

Read and understand the safety information provided

Know their role and responsibilities.

Always abide by the arrangements the Institute has put in place to ensure their health, safety welfare, and that of their colleagues and others.

The process of Risk Assessment in the School of Engineering Functional Area enables us to take all relevant precautions to ensure that Dundalk Institute of Technology's legal standard as an employer is fulfilled particularly in relation to:

- Exercising all due care
- Putting in place necessary protective and preventative measures
- Identifying hazards and assessing risks likely to result in accidents or ill-health
- Not being required to take further measures where these would be grossly disproportionate having regard to the unusual, unforeseeable and exceptional nature of the circumstances.

Health and Safety is overseen in the School by the Functional Area Safety Committee which contains representatives from all of the areas within the School (See Appendix I for membership details)

Signed on behalf of School of Engineering, Dundalk Institute of Technology,

_____

Mr. Eugene Roe
Head of School of Engineering

3.0 School of Engineering Functional Safety Area: Description

The School of Engineering is divided into Four Departments, one Research Centre.

1. Department of Electronic & Mechanical Engineering
2. Department of the Built Environment
3. Department of Engineering Trades
4. Centre for Renewable Energy at DkIT(CREDIT)

The School of Engineering is predominantly located in the following areas of the Institute:

Location	Description	Primary Activity
North Block	Dept. Electronic & Mechanical Engineering	○ Lecture rooms ○ Computer Labs ○ Office based activities ○ Work Placements ○ Laboratories ○ Workshops
North Block South Block	Dept. of the Built Environment	○ Lecture rooms ○ Computer Labs ○ Office based activities ○ Laboratories ○ Fieldwork
North Block South Block The Carroll's Building	Dept of Engineering Trades	○ Lecture Rooms ○ Computer Labs ○ Office based activities ○ Drawing Offices ○ Motor Engineering Workshop ○ Plumbing Workshops ○ Carpentry Workshops ○ Electrical Workshops ○ Motor Engineering Lab ○ Electrical Lab ○ Plumbing Lab

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Risk Assessment is carried out at least once per year in each location in the School of Engineering functional area under the direction of the Head of School, Mr. Eugene Roe who is the responsible person.

The wide range of workplace activities and the associated risks to health, safety and welfare within the School of Engineering can be broadly categorized as follows:-

- Offices, (Administration and Lecturing Staff) – low to medium risk.
- Lecture Rooms, Drawing Offices, Computer Labs. – low to medium risk
- Workshops – low to high risk

Refer to Appendix II for School of Engineering safety management organizational layout.

Hard copies of this Functional Area Ancillary Safety Statement are available at the following locations:

1. Administration Office, School of Engineering
2. Workshop locations
3. Laboratories

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4.0 School of Engineering – Overview of Risk Assessment Process.

This Ancillary Safety Statement covers all activities carried out by the School of Engineering, and should be read in conjunction with the Institute Parent Safety Statement.

Dundalk Institute of Technology will adapt the "General principles of prevention" as outlined in the 2005 Act Schedule 3

When a hazard is identified and the risk assessed, the necessary arrangements are put in place to protect safety and health.

Dundalk Institute of Technology will utilize the hierarchy of controls A series of common sense steps for hazard control (often called hierarchy of control) **where elimination of the risk is not reasonably practical**,.

These steps are:

1. Substitute the hazard (e.g. use a less harmful substance).
2. Isolate the hazard.
3. Use engineering controls (e.g. Physical controls).
4. Put in safe work practices (e.g. Instruction, training, supervision).
5. Use Personal Protective Equipment (PPE) such as gloves / overalls.

If a hazard cannot reasonably be eliminated it is the policy to work through this list to minimise exposure to risks. For example, the Institute will try to substitute the hazard first. If this is not possible, will go to the next step and so on. In some cases it may be appropriate to implement a combination of the steps e.g. Steps 3, 4 and 5.

The list above indicates an "order of priority" for remedial measures for any hazard situation which Dundalk Institute of Technology will adapt.

The process of Risk Analysis is by numerical format.

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

The above risk analysis is incorporated into the School's **Safe Work Practice Sheets**

The Analysis takes into account who is exposed
The initial Risk Rating before controls are implemented
The Reduction Risk Rating after controls is in place

A risk is the probability or likelihood of a hazard actually causing a degree of injury or damage.

A hazard is anything that can potentially cause harm.

After a hazard has been identified, it is evaluated in order to assess what its impact would be if steps to control it were not taken. In practical terms, one determines the likelihood of an accident happening and the consequences of it happening.

There are inevitable difficulties in assessing risks. Some risks such as exposure to e.g.- Chemicals / Manual Handling / Lone Workers / Trainees may require physical or organisational measurements to be taken. Risk depends on many (often related) circumstances:-

Is anyone exposed to the hazard? Is the hazard likely to cause injury?
Is the hazard well controlled? Is the level of supervision adequate?
How long people are exposed and what are are the levels of exposure that should not be exceeded (e.g. Equipment, chemicals, poor lifting techniques)

Risk Assessment will be carried out at least once a year in all of the different sites in the School. The Risk Assessment process adopted by the School of Engineering identifies hazards posed by activities within the School and quantifies the risk posed by same.

In most cases these hazards can be controlled by adhering to procedures detailed in the School's **Safe Work Practice Sheets** (Appendix III) which are developed on an as-needed basis and identified through regular area-by-area risk assessment / Inspection. As part of the annual Risk Assessment process, all Safe Work Practice Procedure Sheets will be reviewed and updated to ensure that they take account of any changing circumstances that have arisen during the course of the year, any changes to work practices, introduction of equipment, changes in legislation will also require updating as is necessary.

Safe Work Practice Sheets are available in the School of Engineering Administrative office, Heads of Departments, Workshop Locations, Laboratories and on the Institute's website

The list of these SWPS is also included in Appendix III of this document. More generic college wide SWPS are also to be adhered to and are available at:

The primary objective of the Safe Work Practice procedures is to eliminate, reduce or control any risks posed as a result of the hazards that exist throughout the School. These Safe Work Practice Procedures are also made available to all staff and students operating in any lab, workshop or classroom environment that is the subject of a risk assessment and safe work practice procedures.

Adherence to the Safe Work Practice Procedures is the primary means of risk control in the School of Engineering. However, hazards may arise from time to time, which are not covered by

these procedures. Under Section 13 (h)(i - iii) of the 2005 Safety, Health & Welfare at Work Act, all staff are required to report any hazards that they notice or observe to their employer. Within the School of Engineering, any hazard noted or observed by any member of staff must be reported to their immediate superior.

Incidents and Dangerous Occurrences must be notified to the relevant supervisor using the forms included in Appendix IV.

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5.0 Functional Area Safety Records

Functional Area safety records include but are not limited to the following documents:

1. Ancillary Safety Statement, including Safe Work Practice Sheets
2. Health and Safety Training Records
3. Accident, Incident and Near Miss Dangerous Occurrence Reports
4. Functional Area Safety Committee Meeting Records
5. Inspection Certificates (where applicable)

(1-5) can be located as follows for:

(a) **The School of Engineering**

Record Type	Building	Room No.	Contact
Ancillary Safety Statement, including Safe Work Practice Sheets	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894
		<u>Offices</u>	
	North Block	Mr. Eugene Roe (HOS) NC126	eugene.roe@dkit.ie ext. 2893
		Mr. Simon O'Neill (HOD) NC124	simon.oneill@dkit.ie ext. 2847
		Mr. Noel McKenna (HOD) NC127	noel.mckenna@dkit.ie ext. 2891
		Mr. Pat McCormick (HOD) NC128	pat.mccormick@dkit.ieext. 2551
		Mr. Padraig McGuigan (Section Head) NW207	padraig.mcguigan@dkit.ie ext. 2698
		Mr James Mulvany (Section Head) NW216	james.mulvany@dkit.ie ext 2520
	South Block	Mr. John Doherty (Section Head) S120	john.doherty@dkit.ie ext. 2692
Training Records	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894
Incident & Accident Reports	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894
FASC Meeting Records	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894
Inspection Certificates	North Block	School of Engineering Office, NC121	Orlagh Devine orlagh.devine@dkit.ie, ext. 2894

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APPENDICES

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Appendix I

Functional Area Safety Committee 2015/2016

1. Eugene Roe, Head of School of Engineering (Chairperson)
2. Simon O'Neill, Head of Department of Engineering Trades
3. Pat McCormick, Head of Department of Mechanical and Electronic Engineering
4. Padraig McGuigan, Head of Section: Mechanical Engineering
5. James Mulvany, Head of Section: Electronic Engineering
6. Noel McKenna, Head of Department of the Built Environment
7. John Doherty, Head of Section Carpentry/ Joinery / Plumbing
8. Orlagh Devine, Senior Administration
9. Jim Connolly, Senior Technical Officer
10. Paul Egan, Lecturer
11. William Lyons, Lecturer
12. Brendan Walsh, Lecturer
13. Dermot Clarke, Lecturer
14. Paul Durcan, Lecturer

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Appendix II

List of Responsible Persons within the School of Engineering

Head of School	Mr. Eugene Roe
Head of Dept of Mechanical & Electronic Engineering	Mr. Pat McCormick
Head of Section: Mechanical Engineering	Mr. Padraig McGuigan
Head of Section: Electronic Engineering	Mr. James Mulvany
Head of Dept of the Built Environment	Mr. Noel McKenna
Head of Dept of Engineering Trades	Mr. Simon O'Neill
Head of Section: C&J and Plumbing	Mr. John Doherty
Centre for Renewable Energy at Dundalk Institute of Technology (CREDIT)	Dr. Tom Dooley

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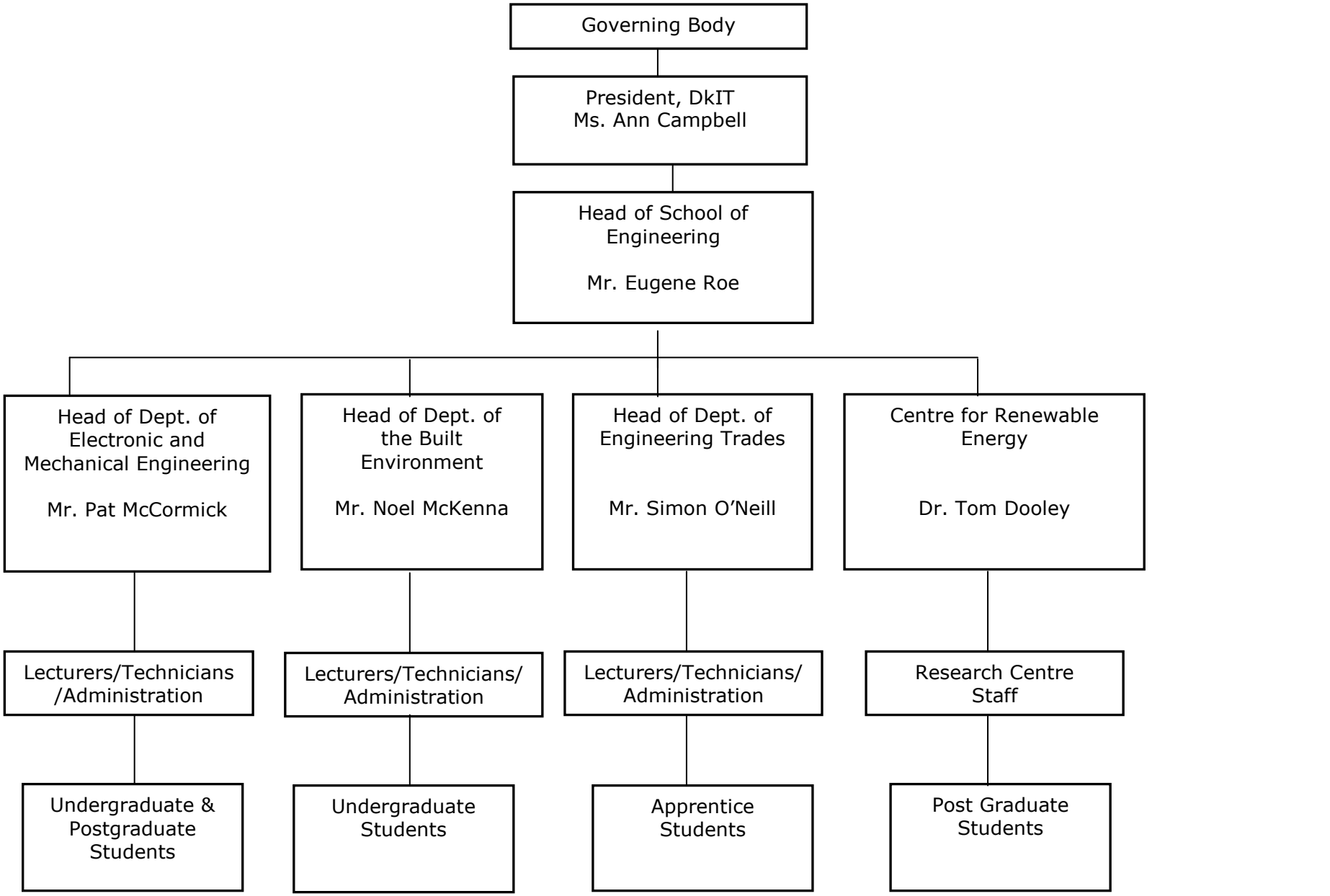

School of Engineering
Safety Management Organisation Chart

Appendix III

Safe Work Practice Sheets

SWPS ID **Construction and Surveying** **S122 / S125**

General Routine Safe Work Practice Sheets Used in this Area:

GEN 001	General Rules
GEN 002	Access and Egress
GEN 003	Fire Safety
CCS 08	Electrical Safety
GEN 005	Chemical Agents
GEN 009	Slips, Trips and Falls
GEN 010	Lone Person Working
CCS 09	Manual Handling
GEN 019	Storage Areas
GEN 025	General Workshop Safety
GEN 026	Use of Hand Tools
SWPS 007	Safe Use of Ladders/Stepladders
GEN 027	Cutters, Scalpels and Stanley Knives

Engineering Specific Safe Work Practice Sheets Used in this Area:

CCS 001	2000KN Concrete Testing Machine
CCS 002	Pin Jointed, Shear Force and Bending Moment Apparatus / Deflection of Beams-)
CCS 003	Heating and Bitumen Handling
CCS 004	Bitumen Penetrometers (Electrical & Manual)
CCS 006	50kn California Bearing Ratio Test Apparatus
CCS 007	Cement and Concrete Handling, Mixing and Batching
CCS 008	Compacting Factor Test
CCS 009	Drying Ovens
CCS 010	Flow Channel / Stability of Floating Objects Apparatus
CCS 011	Force Boards / Moment Boards / Centre of Gravity Boards / Spring Testing Kits
CCS 012	Land Surveying
CCS 013	Oedometer
CCS 014	Permeability Test Apparatus
CCS 016	Plastics & Materials Testing - Flammability
CCS 017	Shear Box Apparatus
CCS 018	Soil Compactor
CCS 019	Soil Sample Extruder
CCS 020	Soil Sample Preparation
CCS 021	Timber Grading
CCS 022	Triaxial Compression Test Apparatus
CCS 023	Portable Weighing Scales
CCS 024	Buckling Apparatus
CCS 025	Bearing Capacity of Shallow Foundations
CCS 026	Bearing Capacity of Deep Foundations
CCS 027	Flexure Bending Machine
CCS 028	Dry Brick Formation Building
CCS 029	Dust Extractor Machine
CCS 030	Rifle Boxes and Sieves
CCS 031	Sieve Shaking Machines
CCS 032	Compactor for Gravel
CCS 033	Slump Test
CCS 034	Cube, Cylinder and Beam Molds
CCS 035	Vibrating Table
CCS 036	Cement Mixer

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Appendix III

General Routine Safe Work Practice Sheets

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Safe Work Practice Sheet General Rules	Ref: SWPS 001
	Date: July 09
	Assessed by: E. Roe

Hazards

There is always an ever-present risk of accidents occurring due to lack of vigilance and awareness of staff and students

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Everyday working environment

Controls

- Smoking, eating and drinking is prohibited in all areas other than designated
- areas. Smoking is prohibited in all areas.
- Exercise care when opening or closing doors on entering or leaving rooms. Never run.
- Conduct yourself in a responsible manner and do not act in a way that could be dangerous to yourself or others. Refrain from indulging inappropriate behavior as it could have serious consequences.
- No student or member of staff should ever work alone in a Laboratory, Workshop, Service Duct or Plant Room, without prior notification to Line Manager.
- All bags and coats are to be left in designated areas. All work and teaching areas should be kept tidy when in use and left tidy when finished.
- All accidents however minor must be reported to immediate superior.
- No member of staff or student is to interfere with any workplace equipment.
- Report any malfunctioning or dangerous or defective equipment to immediate supervisor without delay. Never attempt to effect repairs, no matter how trivial.
- Become familiar with position and use of safety equipment for each area in which you work.
- Study carefully and obey the Safe Work Practice Sheets for any area in which you are required to work.
- Co-operate with Employer in fulfilling duties imposed under Section 13(1)(a- h) of the Safety, Health & Welfare Act 2005

Checks & Inspections

Constant vigilance and awareness

Information, Instruction & Training

Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 high risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 low / medium risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Access and Egress	Ref: SWPS 002
	Date: July 09
	Assessed by: E. Roe

Hazards

Inadequate access and egress in the workplace can result in slips, trips and falls. Obstructed access roads and paths can also pose a risk of injury to pedestrians and to vehicle operators and can also delay emergency escape and emergency vehicle access.

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Everyday working environment on campus

Controls

1. All doorways and access points in the workplace must be kept clear of obstructions.
2. All passageways and pedestrian routes must be kept clear from obstructions.
3. Materials must be stored in designated areas away from pedestrian and vehicular routes.
4. All stairways with more than 3 steps should be provided with handrails and maintained in good condition.
5. Adequate lighting must be provided throughout the Institute at all entry points, exit points and along corridors and passageways.
6. Workplaces must be kept clean and tidy at all times.
7. All spillages must be cleaned up immediately.
8. All cabling and hosing must be neatly tied off or ramped in order to prevent tripping.
9. Workplace floors must be kept in a level and even condition where possible in so far as is practicable. All holes and trip hazards should be removed, filled in or covered.
10. Trip hazards which cannot be removed must be clearly visible or signed as such.
11. Chairs, desks or drawers should never be used to access shelving or any other elevated area.
12. Stepladders or kick stools must always be used.
13. Vehicle drivers must exercise extreme caution when driving on Institute site.

All defects in flooring, lighting, stairwells, etc must be reported to the Estates Office via the Maintenance Request online system.

Checks & Inspections

Constant vigilance and awareness.

Information, Instruction & Training

Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Fire Safety	Ref: SWPS 003 Date: July 09 Assessed by: E. Roe

Hazards

The outbreak of fire can lead to:

- Serious bodily injury or fatality
- Damaged property or plant
- Disruption of premises causing loss of facilities **Person**

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

There is always an ever-present risk of fire occurring in all workplaces. Common fire hazards include improperly stored combustible or flammable materials, the use of naked flames, faulty electrical equipment, the use of flammable fuels, the use of inappropriate equipment, the build up of flammable materials or wastes in the workplace and smoking in undesignated areas. The accidental release of chemical material may also lead to the outbreak of fire, especially if the material is pyrophoric, extremely flammable or is a strong oxidiser.

Controls

The Institute is committed to providing a fire safety programme that guards against the outbreak of fire in all areas and also makes provisions for the safety of all persons in the event of a fire. The Institute would like to reiterate to all staff at this point that every employee has a responsibility to guard against the outbreak of fire in the workplace through the implementation of good fire safety practises and where applicable the adherence to the control measures outlined below.

Employees should also refer to specific fire risk assessments that apply to their specified places / type of work.

Fire Detection, Equipment & Emergency Lighting

Layout drawings, detailing the location of the fire detection and alarm systems, throughout the campus have been prepared by the Estates Office. Copies of these drawings are held by members of the Caretaking Staff, to assist in the identification of the location of any alarm signal.

Fire detection and alarm systems are installed and maintained in accordance with current standards. Emergency lighting systems are in operation in all parts of the Campus. These are installed to and regularly maintained in accordance with current standards.

Fire mains and Hydrants and Fire Hose Reels are inspected and maintained in accordance with current standards The date of the most recent inspection is noted on each hose reel. Test reports on ring mains and

hydrants are held in the Estates Office and Fire Registers.

Portable fire extinguishers are inspected and maintained in accordance with current standards. The date of testing is noted on each extinguisher.

Copies of all testing and certificates are held in Estates Office in the Fire Register.

Emergency Response

1. Each building has in place an emergency plan detailing the reponse to be taken in the event of the sounding of a fire alarm or the discovery of a fire. Refer to http://ww2.dkit.ie/about_dkit/health_safety/emergency_evacuations_procedures_manual for further details.
2. Fire response procedures are displayed in prominent locations within the area covered by their provisions.
3. Emergency response procedures are tested at least annually by use of a fire drill.

Procedural Controls

1. It is prohibited to use a naked flame (outside of a laboratory area) or to engage in 'hot' work (outside of designated workshops) anywhere within the Institute without first obtaining a 'Hot Work Permit' from the Institute Estates Office. Hot work is defined as grinding, welding (all types), hot cutting, and any other work with the potential to generate a spark or an ignition source.
2. It is prohibited to disengage a fire detection device, remove a fire extinguisher from its designated location or to isolate a component of a fire safety system without the express permission of the Institute Estates Office.

Training

1. It is the responsibly of individuals within the Institute to ensure that they are familiar with the provisions of any relevant emergency procedures.
2. Fire safety training is available through the Staff Training & Development Officer for all interested parties.

Means Of Escape

1. All Institute premises will be provided with clearly signed suitable means of escape and emergency exits for use in the event of a fire.
2. All escape routes and emergency exits throughout a building / premises must be kept clear at all times.
3. It is the responsibility of all Institute employees to ensure that escape routes and emergency exits in their working area are kept free from obstruction.
4. No individual may obstruct or remove from service an escape route or emergency exit without prior arrangement with the Institute Estates Office.
5. In the event that employees have a concern regarding means of escape then they must contact their manager immediately. Urgent concerns can be conveyed directly to the Institute Estates Office.

Hazardous Agents

1. As part of a hazardous agent risk assessment fire safety provisions for handling the agent(s) in question must be detailed.
2. Flammable materials may only be handled and stored in accordance with the requirements of their Material Safety Data Sheets, with due regard being paid to their fire risks.
3. Flammable materials must be stored in a suitable storage area. The requirement for low voltage or flame proof wiring should be considered.
4. The large scale storage of flammable materials (>200l / kg) in a single location requires completion of

a specific risk assessment prior to storage taking place.

1. Where new buildings are constructed by the Institute or existing buildings are substantially modified the requirements of Part B of the Building Regulations (1997) Technical Guidance Documents will be adhered to.
2. Smoking is prohibited in all indoor workplaces within the Institute.
3. Employees are encouraged to make themselves familiar with the location of alarm activation points and escape routes in their working areas.
4. Employees must not attempt to repair any electrical equipment unless they are competent to do so. All electrical repairs and installations within the University must only be completed by a competent person, following the rules laid down in the National Rules for the Electrical Installations, as prepared by the Electro-Technical Council of Ireland.
5. The amount of combustible materials stored within the workplace should be kept to a minimum.
6. In the event of an evacuation all persons must leave the workplace without exception and assembly at their designated assembly point.
7. Employees must adhere to any instructions given by Institute Fire Wardens or emergency services personnel in the event of an emergency.
8. Persons must not fight workplace fires unless they have been trained to do so and it is safe to do so.

All employees are reminded of their statuary obligation to protect their own and their co-workers safety by guarding against the outbreak of fire in the workplace through the use of safe systems of work

Checks & Inspections

Information, Instruction & Training

- Fire Drills
- Fire Warden Training
- Use of fire fighting equipment

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability : **2** x Severity **3** = Risk Factor **6 high risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **3** = Risk Factor **3 Low Risk**

Risk Assessment Review – As and when process changes or yearly

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Safe Work Practice Sheet Electrical Safety	Ref: SWPS CCS 08
	Date: March 2009
	Assessed by: E. Bell

Hazards

- Electrocution
- Electric shock
- Burns
- Inadvertent starting of machines

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

A range of electrical appliances are used in the Institute. This Safe Work Practice Sheet covers Portable Appliance Testing and general electrical safety

Controls

- **General**
- Installation or repair work may only be carried out by qualified electricians.
- New installations will comply with the requirements of the General Application Regulations and the Electro-Technical Council of Ireland publication 'National Rules for Electrical Installations.
- Flexible cables will be adequately protected against external mechanical and heat damage.
- Flexible cables should not be run across floors or walkways. Where electrical cables have to be run across open floor areas ramps will be placed over them to prevent the tripping and damage to cables.
- Adequate fusing or excess protection, e.g. circuit breakers, must be provided for all fixed and portable equipment.
- RCDs should be tested at the beginning of each term.
- Areas around fuse boards will be kept clear of flammable materials and the fuse board cabinets will be kept closed at all times.
- Work on electrical appliances by contractors or work requiring isolation of electrical supplies requires an Electrical Work Permit. Buildings and Estates must be contacted.
- Staff must report defective equipment and take out of service Portable AC electrical appliances that may be subject to deterioration as a result of their use such as power supplies and oscilloscopes must be visually inspected and tested at regular intervals. The schedule of testing should be determined by following the Electrical Technical Councils guidelines available at www.etci.ie/docs/ET215(2008).pdf. A record of testing and inspection must be kept by the relevant departments.
- Live working is prohibited except in circumstances where it is not possible to carry out the work in any other manner.

The following precautions must include as appropriate;

- the use of people who are properly trained and competent to work safely on live equipment
- the provision of adequate information to the person carrying out the work, about the live parts involved, the associated electrical installation and the likely risks, the use of suitable tools including insulated tools, equipment and protective clothing
- For example, insulating gloves, insulating boots and insulating rubber matting, the use of suitable insulated barriers or screens,
- the use of suitable instruments and test probes,
- accompaniment by a second person who is trained and able to act in an
- emergency, e.g. switch off power and give first aid treatment for electric shock,
- effective control of any area where there is danger from live parts.
- A safe system of work must be drawn up.

Checks & Inspections

• Portable appliance testing must be carried out on certain portable AC electrical equipment
• RCDs tested once per term
• Electrical circuits tested every 3 years

Information, Instruction & Training

- Trained First Aider/CPR (available when live working is carried out)

Personal protective equipment required (last resort)

Safety boots

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	2	x	Severity	2	=	Risk Factor	4 Medium Risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Chemical Agents	Ref: SWPS CCS 05 Date: 20/04/2011 Assessed by: P. Killeen Approved by: E. Roe

Hazards

Exposure to certain chemical agents can cause a range of injuries from minor to serious long term damage. Exposure may be through ingestion, inhalation, skin absorption, absorption through the mucous membranes.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Staff and students may be exposed to a range of chemicals in the School including but not limited to;

- Petrol
- Cutting/cooling fluids
- Ferric chloride
- Solder
- Glues
- Cement/ Bitumen
- Hardwood dust
- Welding fume

Exposure frequency and duration is variable depending on the activity.

Controls

- Material safety data sheets are obtained for all potentially hazardous chemicals or chemical agents and hard copies are kept with the School Safety Statement.
- A chemical agents risk assessment form (attached to this Safe Work Practice Sheet) is completed for each activity involving the use of chemicals as required by the Chemical Agents Regulations.
- Where a number of chemicals are associated with an activity they must be assessed together.
- The hazards associated with each chemical substance and the precautions that must be taken are brought to the attention of the users through the chemical agents risk assessment form.
- Where necessary local exhaust ventilation is installed and maintained.
- Appropriate personal protective equipment (PPE) is provided for staff. Students are alerted to the requirement for PPE.
- Hazardous chemicals are stored in accordance with the requirements set out in the Material Safety Data Sheet. Chemicals re not decanted into unmarked containers. Where chemicals are placed in other containers an appropriate hazard warning label is attached.

Checks & Inspections

- Local exhaust ventilation should be checked annually to ensure it is extracting efficiently.

Information, Instruction & Training

The hazards associated with each chemical substance are brought to the attention of the users (Senior technical staff are responsible for informing other technical staff, lecturers are responsible for informing students)

Personal protective equipment required (last resort)

Care must be taken in the selection of personal protective equipment, e.g. select the correct glove to ensure that the chemical does not readily break through

Personal protective Equipment should be CE marked.

Initial Risk Rating (without any control measures)

Probability : **2-3** x Severity **2-3** = Risk Factor **4-9**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **variable** x Severity **variable** = Risk Factor **variable**

Risk Assessment Review

As and when process changes or yearly

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Form 2: DKIT School of Engineering Chemical Agents Risk Assessment.

Cement – Mortar Mix

---

1. Location: Civil / Construction / Surveying Labs/ Workshops – Room S122 /S125 Materials Lab

2. Assessment carried out by: Paula Killeen

3. Date 20/04/2011

4. Short description of the process involving the use of the chemical(s) –

The mixing of cement for the use in experiments and for Laboratory exercises. The mixing of cement is by the use of a cement mixer. The preparation is undertaken under the direct supervision of staff. This process is carried out at infrequent intervals. A purpose built machine directly extracts the cement dust from the cement mixer.

5. Hazardous Chemical Agents to be used	**Amount**	**Physical Form**
Cement – Mortar Mix: The principal constituents of the cement are calcium silicates, calcium aluminates and sulphates. Small amounts of alkalis, lime and chlorides are also present together with trace amounts of chromium compounds. Aggregates consist of naturally occurring sand and consist of combinations of various minerals including silica.	**Approx**: No bulk storage Variable	Particle dust

6. **Person Exposed to Risk**

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

7. Indicate Hazard Classification (for all chemicals used)

Explosive: ☐ Oxidising: ☐ Extremely Flammable: ☐

Highly Flammable: ☐ Flammable: ☐ Very Toxic if ingested: ☐ Toxic: ☐

Harmful: ☐ Irritant: ☑ Sensitiser: ☑

Corrosive: ☐ Teratogen: ☐ Hazardous to the environment: ☐

8. Potential routes of exposure

Inhalation: ☑ Skin Contact: ☑ Ingestion: ☐ Sharps: ☐

9. Control Measures to ensure safe use of chemicals

9.1. PPE Required: Safety Glasses: or Safety Goggles to be worn

Gloves: Heavy Duty Gloves**,**
Other: Appropriate Footwear

9.2. Engineering Controls: Fume Hood: ☐ Cement Dust Extracting Machine ☑
Natural Ventilation (Laboratory doors can be opened externally, for natural ventilation) ☑

Storage arrangements*:*

Should be stored in unopened bags. Bags should be stacked in a stable manner.
Products are non-combustible and non explosive and will not facilitate nor support combustion of other materials.

9.3. Emergency Response

***(a)*Fire** all types of fire extinguishers can be used for this product

(b)First Aid *(consult relevant MSDS for further information)*
An MSDS must accompany all victims of exposure when seeking medical advice. Always consult an MSDS following an exposure to a hazardous agent.

Eye Contact:
Direct contact with product may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact by larger amounts of dry product or splashes of wet product may cause effects ranging from moderate eye irritation (e.g. conjunctivitis) to chemical burns and blindness**..** Wear approved glasses or safety goggles -EN 166 when handling dry or wet product to prevent contact with eyes.

Skin Contact:
Dry product in contact with wet skin or exposure to moist or wet product may cause thickening, cracking or fissuring of the skin. Prolonged contact in combination with abrasion can cause severe burns. Some individuals may exhibit eczema upon exposure to wet product, caused either by the high pH which induces irritant contact dermatitis. The response may appear in a variety of forms ranging from a mild rash to severe dermatitis

Inhalation:
Chronic exposure to respirable dust in excess of occupational exposure limits may cause coughing, shortness of breath and may cause chronic obstructive lung disease (COPD).

***(c)*Spill Response:** Recover the spillage in a dry state if possible. - Use dry cleanup methods that do not cause airborne dispersion, e.g.: Vacuum cleaner (Industrial portable units, equipped with high efficiency filters)

Wipe-up the dust by mopping, wet brushing or water sprays or hoses (fine mist to avoid that the dust becomes airborne)
Clean up wet product and place in a container. Allow material to dry and solidify.

Waste Disposal: ***Dispose of in line with the Institutes disposal arrangements. Do not wash product down sewage and drainage systems or into bodies of water.***

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 MEDIUM

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	1-2	=	Risk Factor	1- 2 Low

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Form 2: DKIT School of Engineering Chemical Agents Risk Assessment.

Bitumen (Asphalt)

---

1. Location: Civil / Construction / Surveying Labs/ Workshops – Room S122 /S125 Materials Lab

2. Assessment carried out by: Paula Killeen

3. Date 20/04/2011

4. Short description of the process involving the use of the chemical(s) –

Bitumen is used in experiments and for Laboratory exercises. It is a black viscous liquid at high temperatures (100 °C. +), solid at ambient temperatures... It is used for road paving, waterproofing, adhesives, and coatings. Laboratory exercises are undertaken under the direct supervision of staff and handled at temperatures of 25 °C .This process is carried out at infrequent intervals in low volumes.

5. Hazardous Chemical Agents to be used	**Amount**	**Physical Form**
Bitumen	**Approx**: No Bulk Storage, low volume	Black viscous liquid at high temperatures, solid at ambient temperatures.

6. Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

7. Indicate Hazard Classification (for all chemicals used)

Explosive if overheated: ☑ Oxidising: ☐ Extremely Flammable: ☐

Highly Flammable if overheated: ☐ Flammable: ☑

Very Toxic if ingested: ☐ Toxic: ☐

Harmful: ☐ Irritant: ☑ Sensitiser: ☑

Corrosive: ☐ Teratogen: ☐ Hazardous to the environment: ☑ ***as liquid***

8. Potential routes of exposure

Inhalation: ☑ Skin Contact: ☑ Ingestion: ☐ Sharps: ☐

Exposure will most likely occur through skin or eye contact.

9. Control Measures to ensure safe use of chemicals

9.1. PPE Required: Safety Glasses: ☐ or Safety Goggles ☑

Gloves: ***Rubber Gloves, chemical resistance glove***
Other: ***Appropriate Footwear***

9.2. Engineering Controls: Fume Hood: ☐ General Ventilation ☑

Storage arrangements*: (give details)* ***Keep product away from ignition sources such as heat, sparks and flame. Store in a cool, dry and well ventilated area. Keep containers closed at all times.***

9.3. Emergency Response

*(a)***Fire** ***dry chemical (AFF) or carbon dioxide (CO2) to extinguish flames. Do not use water.***

(b)First Aid *(consult relevant MSDS for further information)*
An MSDS must accompany all victims of exposure when seeking medical advice. Always consult an MSDS following an exposure to a hazardous agent.

Eye Contact:
Flood eyes with plenty of water for at least 15 minutes, blinking as often as possible. Do not force eyelids open. if irritation persists, obtain medical attention

Skin Contact:
Severe thermal burns (up to third degree). Shock. Other than heat burns, the hazards associated with skin contact are negligible.

Inhalation:
Inhalation of vapors (generated at elevated temperatures) or oil mists can cause irritation to the nose and the throat as well as nausea.

"Ensure a high level of personal hygiene is maintained. Always wash hands before eating, drinking, smoking or using the toilet".

*(c)***Spill Response:** ***For small spills, contain the spills with earth, sand or other absorbent. Clean contaminated area with water and detergent.***

Waste Disposal: ***Dispose of in line with the Institutes disposal arrangements and in line with local authority requirements and do not wash product down sewage and drainage systems or into bodies of water.***

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 MEDIUM

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	1-2	=	Risk Factor	1- 2 Low

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Safe Work Practice Sheet Slips, Trips & Falls	Ref: SWPS 009
	Date: July 09
	Assessed by: E. Roe

Hazards

Slips are caused by the presence of substances such as water, grease, oil, fats, soaps, granules, plastic sheets, packaging, leaves, ice etc deposited on the floor arising from the working conditions or in some cases the weather. Slip hazards can be found on both wet and dry surfaces.

Trips can be caused by such features as electric cables or compressed-air lines across walkways, curled-up or worn carpets, uneven floor surfaces and steps, or discarded work items.

Falls may be caused by slips or trips or when adjacent surfaces are at different levels leading to persons losing their balance because they had not anticipated the change in level. Slips or trips on stairs are particularly dangerous.

The hazards listed above are so ordinary and commonplace that people often accept them as part of normal living until they or someone close to them has an accident and is seriously hurt.

Person Exposed to Risk

✓ Students ✓ Employees ✓Public ✓ Contractors ✓ Visitors

Work Description
Everyday activity on campus

Controls

Observe & Adhere to Health & Safety Authority Guidelines as below

- The starting point lies with everybody becoming aware of these hazards and taking appropriate action.
- Management must take responsibility for controlling these hazards and must assign appropriate responsibilities to staff. Clear policies should address what people need to do to identify and monitor slip, trip and fall hazards and the action to take once they identify a hazard.
- Slips, trips and falls must be considered in the workplace hazard assessment that is required by law. This assessment should take account of:
- The type of hazard including how likely it is to occur
- Characteristics of the workplace such as the nature and condition of floor surfaces, quality
- of lighting
- Influence of the weather (e.g. rain, frost or leaves)
- Maintenance and cleaning procedures
- Workplace users
- Where workplaces are being modified or constructed there is an excellent opportunity to prevent slips and trips by selecting appropriate floor materials that are slip resistant and
- installed so as to minimise trip hazards.

Nature of the hazard

In some work areas such as certain food processing activities slip hazards may not always be completely avoidable and the control measures will need to assume the hazard is always present.

- In other situations the floor surface may be non-slippery for most of the time but leaks from
- plant or bad weather may lead to the creation of a slip hazard. It only takes a small amount
- of liquid on a smooth floor to create a hazard. In these situations the immediate control
- measures will focus upon detection of liquids and the actions to be taken to remove the hazard or

reduce it by the provision of warnings and cordoning off areas.
- Permanent trip hazards should be removed as far as possible by such measures as the rerouting of pipes or cables, provision of more sockets to reduce long cable lengths, use of battery powered tools and the repair of uneven floor and stair surfaces.
- A good housekeeping regime will go a long way to reduce intermittent hazards from badly stored or discarded items. Materials should never be left or stored on stairs.
- Where changes in floor level cannot be avoided they should be clearly marked and the provision of handrails to control the movement of persons may be appropriate.
- Changes in level should not take people by surprise.

Characteristics of your workplace

- It is better to eliminate slip hazards by choosing a suitable surface rather than depending on cleaning regimes to keep a floor safe. Building designers should ensure that the intended appearance of a building does not compromise the choice of inherently safer floor options.
- Macro-rough surfaces (i.e. those that contain an aggregate) are recommended for areas that are expected to experience high levels of contamination. Floors that have hard particles throughout their thickness can maintain their slip resistance throughout their life but floors with a superficial layer of grit or slip resistant paint can become slippery as the layer is worn away.
- Profiled floors (ridges or blisters) are sometimes used in areas subject to slip hazards but these can become slippery over time as the profile becomes worn and contaminants can be left trapped within the profiles.
- Carpets or mats placed on smooth floors can pose both slip and trip hazards and, if used, should be securely fixed to the floor at their edges and at any joints.
- The slip resistance of steps is improved by the fitting of nosings which protect the edge of the step from wear and help users to the place their feet more accurately on it. Care has to be taken that the nosing itself does not constitute a hazard.
- The design of stairways in buildings will need to take account of Technical Guidance Documents B (Fire Safety), K (Stairways, etc) and M (Access for People with Disabilities) produced by the Department of Environment, Heritage and Local Government.
- Adequate lighting, including the avoidance of glare and shadows, is necessary to expose slip /trip hazards. Higher lighting levels are needed where older people are present.
- Poorly sited or excessive signage can distract people who are then less likely to notice slip or trip hazards.
-

The weather

- Building entrances can become slippery due to the ingress of moisture, mud and debris in bad weather. Measures such as having a slightly higher internal air pressure in the vestibule or the provision of a suitably designed shelter or canopy above the entrance can reduce the ingress of rain. Another simple measure is the installation of doors that do not blow open in the wind.
- Where matting is provided it should be aligned with the way pedestrians use the entrance. It should be laid immediately inside the door entrance and extend across the full width of the door. The existence of wet footprints beyond the entrance or matting is usually a sign that existing controls are not sufficient.
- Where mats in mat-wells are prone to becoming waterlogged the provision of drainage holes should be considered.

Maintenance and cleaning procedures

- Floor cleaning procedures should be incorporated in the operation and maintenance procedures for a company. The procedure should specify the methods and materials to be used as the use of the wrong cleaning method can increase the area of hazard and level of risk. The cleaning agent used should be suitable for the floor surface and the type of contamination encountered. A build -up of

polish or detergent residues should be avoided. The drying of floors after cleaning is most important for the control of slip hazards. Staff should be informed, trained and supervised with regard to:

- Cleaning and drying floors
- Importance of dealing with spillages/leaks

"Cleaning as you go"

- Reporting hazards as they arise and any equipment defects contributing to slip hazards or problems with the cleaning equipment itself
- Prompt incident reporting
- Use of suitable footwear
- Cleaning should, where practical, be carried out when there are less people around.
- Cleaning activity should be organised so as to provide dry paths through areas being cleaned. It is better to restrict access to areas that are being cleaned by the use of barriers rather than depending on the use of cones or signs alone.
- Research has shown that forewarning people of a hazard can lead them to modifying their gait so as to anticipate the situation but attention must be paid to removing signs when the hazard has been dealt with; otherwise people will tend to ignore them if their experience tells them that the signs are always displayed irrespective of the conditions underfoot.
- Where existing unsuitable floor surfaces are identified, the hazard can be reduced by controlling contamination, using mats, treating the surface or in some cases replacing it altogether with a safer material.

Workspace users

- Where there is control over access to the workspace, the risk of falls can be reduced by the introduction of a "sensible shoe" policy i.e. no high heels or loose fitting shoes. In addition: Shoe soles should have deep cleating and a well defined tread pattern.
- Safety footwear may not always be slip-resistant and purchasers should check that it is suitable for the conditions under which it is going to be used.
- Slip resistant shoes will not remain so if they become worn or contaminated underfoot.
- The risk of slipping while barefoot is often greater than when wearing shoes, so this factor needs to be taken into account in shower areas and in other tiled areas associated with swimming pools, etc
- Disposable plastic overshoes can have poor resistance on smooth floors
- In other workspaces where there is general public access there will greater dependence on the selection of floor material in combination with maintenance regimes to control slip, trip and fall hazards.

Checks & Inspections

- Visual checks and Risk Assessments as required in each Functional Area

Information, Instruction & Training

Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High RISK

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet Lone Person Working	Ref: SWPS 010
	Date: March 09
	Assessed by: E.Bell

Hazards

- Persons working alone using hazardous chemicals or equipment may not be able to summons
- help in the event of an accident or spillage.
- Certain exit routes may not be available during out of hours working.
- Entrapment in areas or spaces due to negligence or accident

Person Exposed to Risk

☐ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Definition of lone working

Lone working/out of hours working is defined as follows:

Any Laboratory / Experimental work carried outside of 9 am - 5 pm Monday – Friday when there are no persons aware of your work within calling distance.

Any other work undertaken outside of 7 am-10 pm Monday – Friday and during the hours of 9am - 6pm on Saturday, Sunday & Bank Holidays.

All buildings must be vacated by 6pm on Saturdays, Sundays and Bank holidays to allow for full lock up. At Christmas & Easter the campus will close down for a specified number of days and access will only be granted under exceptional circumstances .

Lone working includes carrying out field work in hazardous terrain or in areas where there is a risk to personal safety.

Lone working may also include carrying out routine maintenance work in isolated areas such as roofs or plant-rooms.

Controls

General

- Lone working in laboratories is not permitted unless a risk assessment has been carried out in conjunction with an academic supervisor and the risk is deemed to be low. Typical work that may be allowed includes work on PCs, microscope work, viewing plates, taking items in and out of incubator.
- The supervisor may allow working on high risk activities if the person is competent (typically an experienced member of staff) and a buddy is in attendance.
- The supervisor may allow work on medium risk activities for competent researchers (with or without a buddy present).
- Where a person is working alone without other persons within shouting distance then a phone or mobile phone must be readily available. They must also notify a colleague of their intention, how long they intend to be working in the isolated area, and check back with the colleague at an agreed, pre-determined time, when the work in the isolated area is complete.
- Field work in hazardous terrain or where there is a risk of personal injury as a result of confrontation must not be carried out alone (see SWPS Fieldwork).
- Hazardous experiments must not be left unattended overnight.

Out of hours access

- If out of hours work is required permission must be sought from the Head of Department.
- All persons requiring 'Out of Hours' access must be aware of what to do in the event of an emergency, i.e. what emergency exit doors are available, how to raise the alarm, where to go etc.
- The Head of School must provide Security with the names and locations of persons working out of hours. The person must contact Security on leaving the building.
- Persons authorised to work out of hours must not admit any other person to the building out of hours. Persons claiming to be authorised but without a swipe access card or key should be referred to Security for access.
- Where the fire alarm is activated in the building after hours, those evacuating the building must assemble at the building fire assembly point. Otherwise emergency services will assume that they are still in the building.
- Researchers or Staff members who in exceptional circumstances, due to the nature of their research work, require access during 'Lock-Up' must seek authorisation for such access from Buildings and Estates.

Checks & Inspections

Visual checks and Risk Assessments as required in each Functional Area

Information, Instruction & Training
Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2-3	=	Risk Factor	4-6

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2-3	=	Risk Factor	2-3

Risk Assessment Review

As and when process changes or yearly

Lone working/Out of Hours working

	Name	Position	Date
Prepared by			
Reviewed by:			
Approved by			

Revision	Date	By	Description
1			
2			
3			

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Safe Work Practice Sheet Manual Handling	Ref: SWPS CCS 09
	Date: 30/03/2011
	Approved by: E. Roe

Hazards

Incorrect method of lifting
Attempting to lift something which is to heavy
Lifting sharp/awkward shapes
The main injuries associated with manual handling and lifting are:
Back strain, slipped disc, hernia,
Lacerations, crushing of hands or fingers.
Repetitive Strain Injury.
Bruised or broken toes or feet.
Various sprains, strains, etc.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Staff and students may be required to lift or move heavy items from time to time including large pieces of wood, bags of aggregate, metal piping, moving rotating electrical boards, pushing/pulling trolleys and lifting engines and transmissions and various motor parts

Controls

- Risk assessments must carried out on manual handling tasks normally performed by staff As a rule of thumb an assessment is required where weights are above the guideline weights set out by the Health and Safety Authority and reproduced overleaf in figure 1. The assessment should be in writing and set out on form 1 Manual handling assessment attached to this procedure.
- Manual handling will be avoided where possible. Mechanical or other means of moving or lifting will be used such as trolleys and winches.
- Staff will be provided with manual handling training where manual handling is a regular part of their job.
- Seek assistance where possible when lifting heavy items.

Consideration must be given to the arrangement of stored items so that heavier items are not stored near floor or above shoulder height.

Risks

The injuries associated with objects involving, lifting, lowering, manoeuvring and handling objects are:

- Back injury, including slipped disks. The effect of the injury may be cumulative over a period of years (as with chronic backache).
- Pulled muscles and strained ligaments.
- Note: once the back or any other part of the body "goes", then it is easier to go again.

Primary controls

- Trained in the correct manual handling techniques and requirements
- Whenever and wherever possible and practicable use the correct mechanical means to lift, lower or manoeuvre heavy or awkwardly shaped loads.
- Split large loads into several smaller loads if possible.

Basic controls

1 Assessment

Carry out the following assessment process before you begin:

- Is it too heavy, too large, unwieldy or unstable?
- Will it require an unstable body posture position?
- Is the ground, floor or surface uneven or slippery?
- Are you able to maintain good posture while lifting?
- Will it require excessive lifting, lowering or carrying distances?
- Are you physically suited to carry out the task (e.g. physique, fitness, body strength)?
- Are you wearing suitable PPE (e.g. gloves, safety footwear)?

2 Safe to Manual Handle

When your assessment indicates that you can safely undertake the manual handling task, then proceed as detailed in section 3

Even when considered safe you should still use the correct mechanical means whenever and wherever possible and practicable.

3 ***If there is no alternative way then:***

Protect your back

- If you must lift, carry and move an object yourself or with others, then you must do so in accordance with the correct techniques that you have learned in training. These correct techniques are summarised as follows:
- Lifting: Stand close to the load, bend the knees, not the back. Get a firm grip of the load and rise up straight.
- Carrying: Keep the load close to the body, with back straight, and turn by pivoting your feet.
- Lowering: Lower the entire body bending the knees, with back straight.

Special Controls
Loading, transporting
& off-loading materials

- Use mechanical means to load heavy and awkward loads
- Wear gloves and boots to protect body from getting trapped between the load and any other surface.
- Secure and store safely on the transport vehicle

Checks & Inspections

- Senior technician to monitor that correct manual handling technique is being used.
- Trolleys should be visually checked before use. Trolleys with damaged wheels should be taken out of service.

Information, Instruction & Training

- Manual Handling Training provided to relevant staff. Manual Handling activities are monitored and refresher training and /or reinstruction is an integral part of the safety management programme.

Personal protective equipment required (last resort)

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	**High Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **2** x Severity **1-2** = Risk Factor **2-4 Low-medium risk**

Risk Assessment Review

As and when process changes or yearly

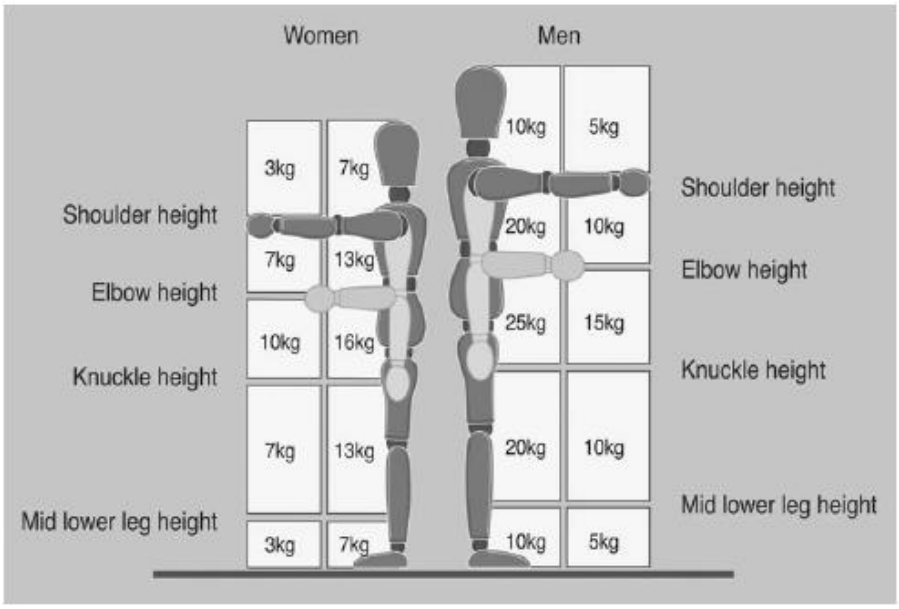

Figure 1. Guideline weights issued by the Health and Safety Authority.

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Form 1 Manual handling risk assessment

Section A – Preliminary *** Circle as appropriate**

Job Description Factors beyond the limits of the guideline weights? (See SWPS Manual handling)	Is an assessment needed? (i.e. Is there a potential risk for injury, and are the factors beyond the limits of the guidelines?) Yes / No*

If 'yes' continue. If 'no' the assessment need go no further.

Operations covered by this assessment (detailed description): Locations: Personnel involved: Date of assessment:	Diagrams or other information:

Section B – See over for detailed analysis

Section C – Overall assessment of the risk of injury? Low/Med/High*

Section D – Remedial action to be taken:

Remedial steps that should be taken, in order of priority: 1. 2. 3. 4. 5. 6. 7. 8.
Date by which action should be taken:
Date for reassessment:
Assessor's name: Signature:

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Section B – More detailed assessment, where necessary:					
Questions to consider:	If yes, tick appropriate level of risk			Problems occurring from the task (Make rough notes in this column in preparation for the possible remedial action to be taken).	Possible remedial action (Possible changes to be made to system/task, load, workplace/space, environment. Communication that is needed.
	Low	Med	High		
The tasks – do they involve: • holding loads away from trunk? • twisting? • stooping? • reaching upwards? • large vertical movements? • long carrying distances? • strenuous pushing or pulling? • unpredictable movement of loads? • repetitive handling? • insufficient rest or recovery? • a work rate imposed by a process?					
The loads – are they: • heavy? • bulky / unwieldy? • difficult to grasp? • unstable / unpredictable? • intrinsically harmful (e.g. sharp / hot)?					
The working environment – are there: • constraints on posture? • poor floors? • variations in levels? • hot/cold humid conditions? • strong air movements? • poor lighting conditions?					
Individual capability – does the job: • require unusual capability? • hazard those with a health problem? • hazard those who are pregnant? • call for special information / training?					
Other factors: Is movement or posture hindered by clothing or personal protective equipment?	YES / NO				

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Safe Work Practice Sheet Storage Areas	Ref: SWPS 019
	Date: July 09
	Assessed by: E. Roe

Hazards

Slips, trips, falls
Cut
Back Injury
Sprains
Falling object
Fire

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Storage of hazardous and non-hazardous substances and materials

Checks & Inspections

- Keep all pathways clear
- Do not climb on shelves or storage racks
- Do not climb on shelves to reach heights – use stepladders only
- Keep aisleways clear
- Do not keep any hazardous materials and substances in general storage areas – they must be kept in designated protected store located in Maintenance Building.
- Store heavy items at low level.
- Store medium weight items on middle shelves.
- Store light items on high shelves.
- Store items on shelves in such a way that they can not fall off.
- Keep all hazardous materials and substances, papers, boxes, etc. away from electric heaters.
- Store material lengths or racking parallel to the aisle.
- Storage areas to be kept locked at all times.
- Only authorized personnel are allowed access to Storage Areas.
- Do not attempt to lift any loads unless you have received appropriate training in safe manual handling techniques.
- Smoking, eating and drinking is prohibited in all storage areas.

Information, Instruction & Training

Not applicable

Personal protective equipment required (last resort)

Not applicable

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet General Workshop Safety	Ref: SWPS 025
	Date: Aug 09
	Assessed by: E. Roe

Hazards

Improper storage of items can lead to items falling on staff,
- obstruction of exit routes,
- manual handling injuries,
- fire,
- failure of shelving.
- Operation of diesel or petrol engines in unventilated space may lead to asphyxiation
- Use of cutting equipment without extraction can lead to respiratory problems

Person Exposed to Risk

☐ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

General activities in workshop

Controls

- The Workshop is fitted with fire detection and alarm system and emergency lighting which is serviced regularly.
- Exit routes must be kept clear of obstruction at all times.
- Adequate shelving is provided to allow safe storage of equipment.
- Heavier items should be stored on middle shelves with lighter items above shoulder height & floor height.
- Where heavy items are stored the condition of shelving should be checked every 6 months by the Supervisor.
- Diesel and petrol is stored in appropriate marked containers in small quantities (<20 litres).
- Diesel or petrol engines must not be operated indoors unless ventilation is operational.
- Extraction ventilation must be serviced annually.
- Cutting equipment should be used in conjunction with extraction.

Checks & Inspections

Extraction equipment must be serviced annually

Information, Instruction & Training

Staff must be shown the correct use of extraction equipment

Personal protective equipment required (last resort)

Safety boots

Initial Risk Rating (without any control measures)

Probability : **2** x Severity **2** = Risk Factor **4 Medium Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **2** = Risk Factor **2**

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet **Use of hand tools**	Ref: SWPS 026
	Date: Aug 09
	Assessed by: E. Roe

Hazards

Cuts
Ejection of material
Eye damage
Stab injuries
Head injuries

Person Exposed to Risk

☐ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Using hand tools such as chisels, Stanley knives, hammers, drills etc.

Controls

- Only staff with appropriate training or experience may use hand tools.
- The tools should be checked before use for signs of wear and tear. Damaged items should be taken out of service for repair or replacement.
- No power tools or electrical equipment of greater voltage than 110 volts shall be used in external locations.
- Where power tools have to be used off the main supply the source of supply must be fitted with residual current devices (ELCB) rated at 30 mAmps at 30 msecs.
- All cable connections must be properly made; under no circumstances is insulation tape to be used for any repair or joint in extension.
- Power tools must be maintained in good condition with casing intact and label fitted showing voltage and other information. An annual formal documented inspection should be carried out by a competent person.
- Mains operated equipment must be electrically tested.
- Where there is a risk of particles hitting the eye, eye protection must be worn.
- Ear defenders will not normally be required as the duration of exposure is expected to be low and infrequent.
- Tools should not be left unattended in public areas when going for breaks.
- Staff should not repair tools unless they are trained to do so.
- Only use tools in the manner in which they were designed to be used.
- Return tools to the workshop at the end of each day.

Checks & Inspections

- Check all tools before each use.
- Annual electrical test for mains operated equipment.

Information, Instruction & Training

- Only trained staff may operate equipment. Training may be provided in house by another
- competent member of staff.

Personal protective equipment required (last resort)

Personal protective equipment varies with tool being used. Where there is a risk of flying particles then eye protection should be worn.

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

Risk Assessment Review

As and when process changes or yearly

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Safe Work Practice Sheet **Use of Ladders / Stepladders**	Ref: SWPS 007 Date: 10/05/2011 Assessed by: P. Killeen Approved by: E. Roe

Hazards

- Physical injury due to fall of persons from ladder
- Objects dropped by ladder / stepladder user

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

NOTE:
The use of Ladders / stepladders is restricted to activities where the risk is deemed to be low (that it would be unlikely to cause injury), the work is of short duration (30mins max) or brief periods at a time, and where the risk assessment shows the use of other work equipment (e.g. working platforms) is not justified.

Low Risk is considered when: where the operator can maintain a handhold / grip on stile whilst placing a box on a shelf and where the user's both feet are fully supported on the same step / rung.

Ladders/ stepladders are not suitable for strenuous or heavy work or where the work involves carrying awkward objects, tools or equipment.

Work Description

The use of Ladders / Stepladders by staff is infrequent. As part of their work technicians on occasions access shelving and storage areas to gain access to materials or parts.

Controls

- Ladder work is restricted to work which can be carried out using one hand only and of short duration.
- The base of the ladder must be on firm and level ground.
- For extension ladders they must be at the correct angle of rest 75 degrees or a base to height ratio of 1:4 (1 out to every 4 units up) and made secured (tying at the top or bottom)
- Stepladders must be fully opened out.
- There must be no sideways loading.
- Maintain 3 points of contact (both feet on the same rung, firm grip on the stile or handrail)
- Over reaching from ladders / stepladders will be avoided.
- Do not work on the top 3 rungs of a ladder, or top 2 steps for stepladders (regardless of length)
- Do not straddle (or sit at the top) of an A frame ladder.

Checks & Inspections

- Ladders will be checked for the correct type of equipment for the job at hand.

- Ladders / Stepladders must be visually inspected before use.
- Inspection of ladders must be recorded on form GA3 for every 7 day of use or used for the first time.

Information, Instruction & Training

- Operatives will be instructed to the safe use of ladders and the hazards which are to be avoided.
- Operatives to follow the controls
- Operatives to report any defects
- A further risk assessment will be necessary where the work activity is deemed to be medium or a high risk.

Personal protective equipment required (last resort)

- PPE may be a requirement dependant on the Risk Assessment

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2

Risk Assessment Review

Risk Assessment will be reviewed periodically

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Safe Work Practice Sheet Use of cutters, scalpel and stanley knives	Ref: SWPS 027
	Date: March 09
	Assessed by: E. Bell

Hazards

- Cuts when taking blades in and out of handle
- Cuts while using equipment
- Cleaning staff receiving cuts if blades disposed of to general waste
- Eye injury if blade breaks while used with force for tasks other than cutting

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

A range of cutting equipment is used in some areas by staff and students

Controls

- Where possible retractable blades or safety knives will be used.
- Blades must be disposed of to a designated sharps bin with a closable lid. Blades must never be disposed of to general waste.
- Users should use only sharp blades – blunt blades require more force and their use may result in injury
- Users should cut away from the body keeping the restraining hand well away from the blade.
- Unsheathed blades must never be carried in pockets or bags.
- Unsheathed blades must not be left in drawers or toolboxes.

Checks & Inspections

- Knives cutters used in classroom situations should be visually checked annually and damaged equipment removed from circulation.

Information, Instruction & Training

Students receive specific instruction on safe use of blades

Personal protective equipment required (last resort)

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2-3	=	Risk Factor	2-3 Low Risk

Risk Assessment Review

As and when process changes or yearly

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Appendix III

Specific Safe Work Practice Sheets

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Safe Work Practice Sheet 2000kN Concrete Testing Machine	Ref: SWPS CCS 001 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly connected, damaged or poorly maintained electrical wiring on the apparatus can result in Electrocution-Death. First second and or third degree burns.

Mechanical
Crushing of fingers, hands & feet between ascending ram and machine head plate, crushing of fingers when changing spacer/plates or test material pieces.

Manual Handling
Lower back and musculoskeletal injuries from carrying, lifting and sliding of spacer/plates and test pieces.

Slips, trips and falls
Slipping as a result of water, leaking hydraulic oil or debris on floors causing falls and head impact injuries, cuts and bruises. Tripping due to trailing power cable, test equipment, poor housekeeping & personal belongings resulting in falls & head impact injuries, cuts and bruises.

Sharps
Crushing materials can generate masonry sharps and cause lacerations, puncture wounds to the hands and fingers when handled.

Flying debris
Crushing masonry materials can result in loss of sight from flying particles due to machine guard open.

Falling Objects
Lifting heavy parts of machinery or test material can fall and cause lower leg and feet crushing, impact injuries.

Hydraulics
Skin in contact with hydraulic oil can result in minor skin irritation.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This machine is used to crush concrete cubes and bricks to the point of failure in order to measure compressive strength, load absorption etc.

Controls

- Only trained operators are permitted to load up and operate the machine.
- Follow the manufacturer's machine operating procedures at all times.
- Students are permitted to start the machine under the supervision of the lecturer or technician.
- Long hair must be tied back neatly or a well fitted cap worn when operating the machine.

- The wearing of loose clothing or jewellery is not permitted.
- Ensure that the electric power cable and plug is in good working order & free from defects prior to use.
- Do not use the machine if the power cable or plug is danged in any way.
- Competent persons must carry out all electrical repairs.
- Do not place hands, fingers or feet between ascending ram and head plate.
- Ensure to remove fingers from between spacer/plate & test materials when loading the machine.
- Do not place and rest heavy items on the ground, use a support bench for resting heavy items on.
- Avoid the trailing of power cables and use the power socket at the back of the machine.
- Clean any water or test material spills up as soon as noticed.
- Maintain good housekeeping at all times.
- Personal belongings are not permitted at or near the workstation.
- Do not leave test pieces or machine parts lying on the ground around the machine.
- Crushed debris on the ground or machine must be removed by use of brush and pan or by wearing of heavy duty gloves.
- Lifting to be carried out in accordance with correct manual handling practice and procedure
- Guard plate to be kept closed during and after testing.
- Safety glasses must be worn when operating the machine. Lecturer or technician must ensure that observers are a safe distance away from the machine.
- Ensure to obtain a firm hold/grip of machine parts or test equipment when lifting or carrying. Seek assistance if required. Ensure no hydraulic oil is leaking on to the floor prior to using the machine, use gloves if handling hydraulic oil and dispose of carefully.
- Wash your hands thoroughly when testing is complete.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Practical instruction is given on the safe use of the equipment.
- Laboratory exercises are supervised by college staff.
- Manual handling training.
- PPE training.

Personal protective equipment required (last resort)

- Safety boots
- Safety glasses
- Safety gloves

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk

Risk Factor = Probability x Severity							
Risk Reduction Rating (after controls introduced)							
Probability :	**1**	x	Severity	**3**	=	Risk Factor	**3 Low Risk**
Risk Assessment Review							
As and when process changes or yearly							

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Safe Work Practice Sheet Pin Jointed, Shear Force and Bending Moment Apparatus / Deflection of Beams Apparatus / Structural Frames	Ref: SWPS CCS 002
	Date: 24/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, pulling & carrying the test equipment onto the required workbench or floor space can result in acute or chronic lower back and or musculoskeletal injuries.

Electricity
Poorly maintained, loose, damaged machine electrical cables and plugs can result in electrocution–death and first, second or third degree burns.

Falling Test Equipment
Machinery positioned on the edge of workbench can fall a cause lower leg and feet impact crush injuries, broken bones and cuts and bruises. Damaged, defective wheels on test equipment frames can fail and fall over when being moved causing impact crush injuries to the lower body. Weights falling from hands due to over loading, loose grip or failed string, equipment causing feet impact injuries.

Slips, trips and falls
Poor housekeeping, personal belongings and leaking water from test apparatus can result in slipping and tripping causing head and body impact injuries, cuts and bruises.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Shear Force and Bending Moment apparatus / Deflection of Beams apparatus / Structural Frames apparatus are experimental apparatus used for verifying fundamental laws of physics. Typically they are simple bench-mounted structures or frames on which weights are hung and from which simple measurements are taken in order to verify a particular physical principal or phenomenon.

Controls

- Students are permitted to use the apparatus, under correct instruction and the supervision of the lecturer or technician.
- Follow the manual handling training guidelines at all times when handling test equipment.
- Seek assistance if required when lifting the test equipment onto the work benches.
- Inspect electrical cable and plugs for damage or defects prior to use. Do not use if damaged in any way.
- Competent persons must only carry out repairs on electrical equipment.
- Ensure that the test equipment for use is secure and firmly placed in from the workbench edge.
- Ensure that all trolley wheels are free from defects prior to use, Lock the wheels when test equipment is in required position.

- Maintain a firm and secure hold of test weights when carrying into position.
- Never overload the body with too many weights when carrying or lifting.
- Ensure test apparatus weight strings and parts are free from defects prior to use.
- Never exceed the test apparatus weight limit.
- Follow the manufacturer's machine weight test guidelines at all times.
- Maintain good housekeeping at all times and work space free from personal belongings.
- Mop up and dry any leaking or spilled water on the floor as soon as noticed.
- Laboratory exercises are supervised by college staff

Checks & Inspections

- Weight hangers are inspected annually
- Digital force display unit is compliance tested annually
- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Lab instruction sheets are issued to all students prior to carrying out an exercise
- Practical instruction is given in the safe use of the equipment.
- Manual handling training.

Personal protective equipment required (last resort)

- Safety boots

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

Risk Assessment Review – As and when process changes or yearly

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Safe Work Practice Sheet Heating and Bitumen Handling	Ref: SWPS CCS 003 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly installed, not maintained or damaged electrical heat bath cable or plugs can result in electrocution-death or first, second or third degree burns.

Manual Handling
Lifting, carrying or pushing the machine into position, filling and emptying with water can result in acute or chronic lower back or musculoskeletal injuries.

Slips, trips and falls
Poor housekeeping, personal belongings, machine trailing power cable, wet floor topping machine up with water or removal of heated bitumen can result in tripping and slipping hazards causing fall impact injuries to the head resulting in concussion ,cuts and bruises.

Hot Liquid
Setting of the machine heating thermostat too high can result in hand and finger scalding when placing or removing bitumen specimen from the machine water bath.

Dirty Water
Water of heat bath infrequently changed, dirt in water can result in possible mould growth and result in minor illness (stomach cramps etc.) if inadvertently ingested by touching with hands.

Chemicals
Handling warm or cold bitumen specimen with bare hands can result in minor skin irritation.

Falling Machine
Uneven, unsecure surface, machine at bench edge can result in a falling machine and lower leg and feet crush injuries.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Prior to carrying out a penetration test, bitumen samples are placed in containers and heated to 25 degrees centigrade in a heated water bath. As the viscosity of the sample is temperature dependent, this is done in order to order to ensure that all measurements are taken under the same conditions.

Controls

- Students are permitted to use the machine, under correct instruction and the supervision of the lecturer or technician
- Inspect electrical cable and plugs on heating bath prior to use.
- Do not use the machine if cables or plug are damaged in any way.
- Competent persons must only carry out electrical repairs.
- Follow the manual handling training guidelines at all times.

- Maintain good housekeeping at all times and work area free from personal belongings.
- Ensure that the machine is plugged into the socket above the bench when in use.
- Dry up any water spills as soon as noticed.
- Allow bitumen test piece to drain into water bath prior to moving to workbench.
- Avoid splashing of water when filling up the machine water bath.
- Ensure that the machine thermostat is set at the correct temperature for heating bitumen specimen.
- Check the machine temperature gauge before handling the bitumen specimen.
- Never move the machine full of water.
- Do not handle the machine until it has cooled down sufficiently.
- Ensure the machine bath lid is covering the water when heating the test specimen and when not in use.
- Inspect the bath water regularly for discoloration, smell and mould growth and change if required.
- Always use clean tap water when topping up the machine bath.
- Ensure that the machine is placed on a level secure surface and in from the bench edge.
- Personnel must use disposable gloves when handling bitumen material and water bath.
- Hands must be washed thoroughly after handling bitumen and the water bath.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School.
- Lecturers and Technicians to monitor compliance with control measures.

Information, Instruction & Training

- Students are given instruction in the safe handling of bitumen
- Laboratory exercises are supervised by college staff
- Lecturers and Technicians to monitor compliance with control measures
- Manual handling training
- Chemical training
- MSDS

Personal protective equipment required (last resort)

- Disposable gloves are provided
- Safety boots

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	2 Low Risk

Risk Assessment Review – As and when process changes or yearly

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Safe Work Practice Sheet Bitumen Penetrometers (Electrical & Manual)	Ref: SWPS CCS 004 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly installed, not maintained or damaged penetrometer electrical cable or plugs can result in electrocution-death or first, second or third degree burns.

Manual Handling
Lifting, carrying or pushing the machine into work bench position can result in acute or chronic lower back or musculoskeletal injuries.

Slips trips and falls
Poor housekeeping, personal belongings, machine trailing power cable can cause tripping and fall impact injuries to the head resulting in concussion, cuts and bruises.

Chemicals
Handling warm or cold bitumen specimen with bare hands can result in minor skin irritation.

Mechanical & needle stick
Impact injury of bruising to the hands or fingers from unsecure descending test equipment. Entrapment of hand or fingers with descending needle and machine base plate, result in puncture wounds to the hands or fingers.

Falling Machine
Uneven, unsecure surface, machine at bench edge can result in a falling machine and lower leg and feet crush injuries.

Flying Debris
Penetrating bitumen under load against metal surfaces can result in breaking a needle and cause flying metal debris and permanent eye damage.

Sharps
Severe cuts to hands and fingers by inadvertently brushing against needle of the machine.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This apparatus forces a penetrating needle into a bitumen sample in order to measure its viscosity.

Controls

- Students are permitted to use the machine, under correct instruction and the supervision of the lecturer or technician.

- Inspect electrical cable and plugs on the penetrometer prior to use.
- Do not use the machine if cables or plug are damaged in any way.
- Competent persons must only carry out electrical repairs.
- Follow the manual handling training guidelines at all times.
- Maintain good housekeeping at all times and work area free from personal belongings.
- Ensure that the machine is plugged into the socket above the bench when in use.
- Personnel must use disposable gloves when handling bitumen test material.
- Ensure that the machine test equipment is tightened securely when in place for testing.
- Do not rest hands on the machine base plate.
- Ensure that the machine is placed on a level secure surface and in from the bench edge.
- Inspect the needle for defects prior to use. Do not use if damaged.
- Adjust the needle height by with both hands to avoid needle holding arm from sliding freely.
- Never place hands or fingers between descending needle and machine base plate.
- Always keep hands and fingers clear of the needle tip in the machine.
- Needle is kept covered when not being used and removed from penetrometer.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Lab instruction sheets are issued to all students prior to carrying out an exercise
- Practical instruction is provided in the safe operation of the equipment.
- Laboratory exercises are supervised by college staff
- Manual handling training
- Chemical training
- Material Safety Data Sheet

Personal protective equipment required (last resort)

- Safety Glasses
- Safety boots

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

Risk Assessment Review – As and when process changes or yearly.

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Safe Work Practice Sheet 50kn California Bearing Ratio Test Apparatus	Ref: SWPS CCS 006
	Date: 24/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly installed, connected, damaged or poorly maintained electrical wiring can result in Electrocution-Death. First second and or third degree burns.

Mechanical
Crushing of fingers, hands between ascending ram test equipment.

Slips, trips and falls
Slipping as a result of wet or dusty floors causing falls and head impact injuries, cuts and bruises. Tripping due to trailing power cable, test equipment, poor housekeeping & personal belongings resulting in falls & head impact injuries, cuts and bruises.

Falling sample mould
Unsecure grip of test mould, falling and resulting in lower leg and feet impact injuries resulting in broken bones, cuts and bruises.

Flying debris
Compacting samples can generate flying particles and cause loss of sight or temporary eye irritation.

Manual Handling
Lifting, carrying and pushing of the sample mould can result in lower back injuries and musculoskeletal injuries.

Falling Machine
Uneven, unsecure surface can result in a falling machine and lower leg and feet crush injuries.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This machine is used for carrying out compression tests on soil and aggregate samples

Controls

- Students are permitted to use the apparatus, under correct instruction and the supervision of the lecturer or technician.
- Follow the manufacturer's machine operating procedures at all times.
- Long hair must be tied back or a well fitted cap worn when operating the machine.
- The wearing of loose clothing is not permitted.
- Jewellery must not be worn.
- Ensure that the electric power cable and plug is in good working order & free from defects prior to use.
- Do not use the machine if the power cable or plug is damaged in any way.

- Avoid the trailing of power cables..
- Competent persons must carry out all electrical repairs.
- Do not place hands, fingers or feet between ascending ram and base platen.
- Ensure the machine power cable is plugged in to the socket above the test work bench.
- Clean any water or test dust spills up as soon as noticed.
- Maintain good housekeeping at all times.
- Personal belongings are not permitted at or near the workstation.
- Do not leave test pieces lying on the ground around the machine.
- Firmly hold on to the sample mould when setting up for testing.
- Safety glasses must be worn when operating the machine or preparing samples.
- Ensure water is added to soil sample prior to mixing.
- Protective gloves to be worn when handling samples.
- Scoops / shovels to be used for preparing samples and for loading the sample to apparatus.
- Lifting to be carried out in accordance with correct manual handling practice and procedure.
- Ensure that the machine is mounted on a secure and even surface.
- Access cover over the ram to be kept closed when machine is in operation
- It is not permitted to move the soil sample while compactor is in operation
- Lifting of soil sample and associated items of the apparatus is to be carried out in accordance with safe manual handling practice.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures
- Practical instruction is provided in the safe operation of the equipment.
- Laboratory instruction sheets are issued to students
- Manual handling training
- PPE training

Information, Instruction & Training

- Instruction is given on the safe use of the equipment
- Laboratory exercises are supervised by college staff
- First Aid is available in the laboratory

Personal protective equipment required (last resort)

- Protective gloves are provided
- Scoops / shovels are provided
- Safety glasses
- Safety Boots

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Cement and Concrete Handling, Mixing and Batching	Ref: SWPS CCS 007 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly connected, damaged or poorly maintained electrical wiring on mobile cement mixer or dust extract system can result in Electrocution-Death. First second and or third degree burns.

Manual Handling
Lifting carrying and holding cement moulds, slump cylinders, sand & cement bags, mixing tray, moving the cement mixer and dust extractor into position can result in lower back and musculoskeletal injuries.

Sharps
Incorrectly stored, mishandled, damaged or broken graduated glass cylinders for measuring water can result in sharps that can cause lacerations to the hands and fingers.

Dust
Decanting cement and sand from bags and mixing in cement mixer can result in the generation of dust, causing acute or chronic respiratory irritation & illness, disease (asthma). Minor irritation to the eyes.

Wet Cement
Contact with wet cement can result in burns to exposed skin parts and or contact dermatitis.

Dry Powders
Handling dry cement powder with bare hands can result in burns to the hands and fingers and contact dermatitis.

Falling objects
Unsecure hold of empty or full moulds and not mounted properly on the work bench can result in falling mould and lower leg and feet crush injuries.

Slips, Trips and Falls
Trailing power cables, poor housekeeping, personal belongings, test pieces can result in tripping causing fall impact head injuries. Wet, sandy, gravel & dusty floors can result in slipping & fall impact head injuries.

Mechanical
Pinching of fingers when assembling and disassembling steel moulds.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Cement, sand and gravel are mixed in order to make concrete samples of varying strengths for test purposes.

Controls

- Students are permitted to carry out this task, under correct instruction and the lecturer or technician supervision.
- Ensure that all electrical cables are in good working order and free from defects prior to use.
- Do not use electrical equipment if damaged in any way.
- Competent person/s must carry out electrical repairs.
- Ensure that graduated glass cylinders are free from defects or damage prior to use, do not use if damaged and dispose of carefully if damaged.
- Use a brush and pan to clean up any broken glass.
- Ensure that the mobile dust extraction is in good working order prior to handling cement and sand.
- Disposable gloves must be worn when handling cement and concrete mixes.
- Mechanical extractor is operational when sample preparation is taking place, so as to remove airborne cement dust
- Scoops & shovels are provided to avoid skin contact.
- Lifting to be carried out in accordance with correct manual handling practice and procedure. Seek assistance if required.
- Ensure to maintain a secure hold of moulds when handling. Ensure that moulds are placed flat and in from the edge of the workbench.
- Ensure that the cement mixer & dust extract power cables are not trailing on the lab walkways.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Do not leave test pieces lying on the ground, store away when no longer required.
- Clean wet, sandy, gravel and dusty floors as soon as possible.
- Use the stainless steel tray for mixing cement.
- Exercise caution when assembling and dissembling steel moulds, do not place fingers between closing parts.

Checks & Inspections

- Manufacturers safety data sheets are posted in public view and student's attention is drawn to them
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Practical instruction is given in the safe handling of cement.
- Laboratory instruction sheets are issued to students in relation to each exercise
- Manual Handling Training
- PPE Training
- Chemical Training
- MSDS

Personal protective equipment required (last resort)

- Disposable gloves are supplied
- Safety Glasses
- Safety Boots

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Compacting Factor Test	Ref: SWPS CCS 008 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Wet Cement
Handling wet cement with bare hands, clothing contaminated with wet cement can result in burns to the hands and fingers or other exposed body parts. Splashing in eyes from decanting from one cone to another can result in burns to the eyes.

Manual Handling
Lifting, dragging or pushing the test apparatus in to position, lifting and carrying test samples can result in lower back and or musculoskeletal injuries.

Falling Apparatus & Equipment
Due to leaning against, un level apparatus, dragging into position, unsecure hold of equipment causing lower leg and feet crush injuries.

Mechanical
Crushing of fingers from in-between moving levers on the test apparatus.

Slips Trips and Falls
Poor housekeeping, personal belongings, test pieces and equipment can result trips and fall impact head injuries. Wet, sandy and dusty floor can result in slips and fall head impact injuries.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This apparatus is used for compacting wet concrete samples to test for the degree to which the sample reduces in volume or compresses under controlled conditions.

Controls

- Students are permitted to use the test apparatus, under correct instruction and the lecturer or technicians supervision.
- Protective gloves to be worn when handling samples.
- Scoops / shovels to be used for preparing samples and for loading the sample to apparatus.
- Lifting to be carried out in accordance with correct manual handling practice and procedure.
- Clothing contaminated with wet concrete must be removed and changed immediately.
- Ensure that the test apparatus is set up firm and level on the ground.
- Never lean against the apparatus.
- Ensure to maintain a secure hold of the test apparatus and equipment when moving. Seek assistance if required.
- Never place fingers in between moving levers on the test apparatus.
- Maintain good housekeeping and work area free from personal belongings at all times.

- Do not leave test pieces or equipment lying on the ground.
- Wear the appropriate PPE.
- Wet, sandy and dusty floors must be cleaned as soon as possible.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Practical instruction is provided in the safe operation of the equipment.
- Laboratory instruction sheets are issues to students
- Manual Handling Training
- PPE Training
- Chemical Handling Training
- MSDS

Personal protective equipment required (last resort)

- Protective gloves are provided
- Scoops / shovels are provided
- Safety Boots
- Safety Glasses

Initial Risk Rating (without any control measures)

Probability : **2** x Severity **2** = Risk Factor **4 Medium Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **2** = Risk Factor **2 Low Risk**

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Safe Work Practice Sheet Drying Ovens	Ref: SWPS CCS 009 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly connected, damaged or poorly maintained electrical wiring on ovens can result in Electrocution-Death. First second and or third degree burns.

Falling Machine
Ovens mounted on the edge of the workbench fall, resulting in crushing of feet & lower leg impact cuts & bruises.

Temperature
Heating test samples to required temperature can result in burns to the hands and fingers when removing from the oven.

Fire
Heating and drying materials not intended for the oven resulting in first, second & or third degree burns. Flammable sources stored beside the oven, nylon clothing, igniting and resulting in first, second and or third degree burns.

Slips, Trips and Falls
Poor housekeeping, personal belongings, test pieces and trailing electrical cables can result in trips causing falls and impact head injuries. Slipping due to spilled soil samples on the ground resulting in impact head injuries.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This apparatus is an electric oven that is used to dry sand, soil and aggregate samples as part of a process to measure moisture content.

Controls

- Students are permitted to use the equipment, under correct instruction and the supervision of the lecturer or technician.
- Inspect electrical cables prior to using the ovens.
- Do not use the ovens if electrical cables are damaged in any way.
- Competent person/s must carry out electrical repairs.
- Ensure that the ovens are placed securely in from the edge of the workbench.
- Heat resistant gloves are provided and must be worn when handling materials into and out of the oven.
- Only place materials in to the oven as recommended by the machine manufacturer.
- Nylon clothing must not be worn when operating the ovens.
- Flammable materials must never be stored at or near the ovens. Maintain good housekeeping and work area free from personal belongings at all times.

- Test pieces must not be stored on the ground.
- Ensure the electrical power cables of the ovens are plugged into sockets above the workbenches.
- Clean up any spilled soil samples from the floor immediately.
- Remove test samples from the oven one at a time.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and technicians to monitor compliance with control measures

Information, Instruction & Training

- Lab instruction sheets are issued to all students prior to carrying out an exercise
- Practical instruction is given in the safe use of the equipment.

Personal protective equipment required (last resort)

- Heat resistant oven gloves

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Flow Channel / Stability of Floating Objects Apparatus	Ref: SWPS CCS 010 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly connected, damaged or poorly maintained electrical wiring on test apparatus can result in Electrocution-Death. First second and or third degree burns.

Manual Handling
Moving the apparatus into test or demonstration position, lifting of test weights can result in acute or chronic lower back and or musculoskeletal injuries.

Slips, Trips and Falls
Trailing power cable, weights on the ground can cause trips and fall impact head injuries. Leaking test apparatus, splashing water can result in slipping and fall head impact injuries.

Falling Weights
Weights not mounted properly on weight hanger, hanger set up incorrectly, unsecure hold of weights can result in falling weights and lower feet impact injuries.

Falling Water Tank
Wheels of the water tank collapse resulting in the water tank falling over causing crushing of feet and impact injuries to the lower legs.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This apparatus is used for conducting experiments relating to water flow and flow measurement, engineering hydraulics and fluid dynamics.

Controls

- Students are permitted to use the apparatus, under correct instruction and the supervision of the lecturer or technician.
- Inspect the electrical cables prior to using the ovens.
- Do not use the equipment if electrical cables are damaged in any way.
- Competent person/s must carry out electrical repairs.
- Follow the manual handling training guidelines at all times, seek assistance if required.
- Ensure that the test apparatus is free from leaks.
- Avoid the trailing of power cables along the walkways at all times.
- Laboratory floor to be kept dry at all times
- All water spillages are mopped up immediately

- Laboratory exercises are supervised by college staff
- Ensure of a firm hold of weights when lifting and carrying.
- Never carry too many weights at a time, only lift what you can securely hold.
- Mount the weights on to the weight hanger at right angles to each other.
- Ensure that the wheels of the water tank are free from damage and defects prior to using the machine.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Lab instruction sheets are issued to all students prior to carrying out an exercise
- Practical instruction is given in the use of the equipment.

Personal protective equipment required (last resort)

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Force Boards / Moment Boards / Centre of Gravity Boards / Spring Testing Kits	Ref: SWPS CCS 011 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting of test equipment to or from workbenches can result in acute or chronic lower back and or musculoskeletal injuries.

Falling Test Equipment
Loose clothing or long hair can become entangled with test equipment. Loose or failed fittings on test equipment on lab walls, equipment placed on the edge of workbench, unleveled equipment, equipment strings snap, weights not mounted correctly on hangers falling and causing minor impact impact injuries to the lower legs and feet.

Assembling Test Equipment
Fixing and removing test equipment to/from boards can result in pinching of fingers, cuts to hands when clamping pieces together.

Slips Trips and Falls
Poor housekeeping and personal belongings can result in tripping and cause fall impact head and body injuries.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Force boards, moment boards etc., are experimental apparatus used for verifying fundamental laws of physics. Typically they are simple bench-mounted structures or frames on which weights are hung and from which simple measurements taken in order to verify a particular physical principal.

Controls

- Students are permitted to use the test equipment under correct instruction and the lecturer or technicians supervision.
- Follow the manual handling training guidelines at all times when handling test apparatus.
- Ensure that all test equipment fittings are tight and securely fitted.
- Ensure that test equipment is mounted in from the edge of the workbench.
- Check that test equipment strings are free from defects.
- Ensure that weights on test apparatus are mounted at right angles to each other.
- Loose clothing must not be worn when operating the test equipment.
- Long hair must be neatly tied back or a well fitted cap worn.
- Do not place hands or fingers in between test apparatus being clamped together.
- Maintain good housekeeping at all times and area free from personal belongings
- Maximum weight of 10N (1 kg) used

- Laboratory exercises are supervised by college staff

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Lab instruction sheets are issued to all students prior to carrying out an exercise
- Practical instruction is given on the safe use of the equipment.
- First Aid is available in the laboratory
- Manual Handling Training.

Personal protective equipment required (last resort)

- Safety Boots

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 Medium Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

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Safe Work Practice Sheet Land Surveying	Ref: SWPS CCS 012
	Date: 24/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Contact with overhead electrical power lines when using full length levelling staves resulting in electrocution-death or first, second and or third degree burns.

Manual Handling
Lifting, carrying, holding & pushing tripods, levelling staves, GPS, Trundle Wheels, sledge hammers & any other surveying hand held equipment can result in acute or chronic lower back & or musculoskeletal injuries.

Mechanical
Setting up or dismantling of tripods, trundle wheels & test equipment can result in crushing of fingers or hands when in-between moving or closing parts. Crushing and pinching of fingers when setting up instruments on tripods.

Falling Equipment
Tripod etc. equipment not set up correctly, falling causing lower leg & feet minor crush injuries. Carrying too much& unsecure hold of equipment., unleveled ground, windy conditions can result in falling equipment & lower leg and feet crush injuries.

Sharps
Feet of tripod, range rod, nails, wooden stakes and other test equipment can cause puncture wounds to the feet hands and other body parts of person carrying equipment or in path of equipment.

Failed Equipment
Damaged wooden handles on sledge hammers, wooden stake, tripods etc,, fail resulting in been struck by blunt force causing head and body impact injuries., splinters in hands , cuts and bruises.

Traffic
Crossing road ways without looking, listening etc, being stuck by moving motor vehicle, cyclist or pedestrians resulting in death or severe body injuries, major and minor cuts and bruises.

Slips Trips and Falls
Untidy field work area, mucky, gravel etc., wet, frosty & unleveled surface conditions can result in slipping and tripping causing head impact and body injuries.

External Environment
Exposed to UV rays (clear or cloudy), causing, first second and or third degree burns, dehydration or sun stroke, chronic effect of skin cancer or eye cataracts.

Biological
Contact with earth & soil can result in contacting weils disease, causing death, flu like symptoms, liver and kidney damage.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The carrying out of physical surveys of topographical features to ascertain two and three dimensional measurement data using industry standard equipment.

Controls

- Students are permitted to carry out land surveying, under correct instruction and the lecturer's supervision.
- Keep all passageways clear
- Check weight of load before lifting. Correct manual handling procedure and practice to be used at all times.
- Individuals should always seek assistance to carry/transport equipment where it is felt necessary
- Adhere to standard 'Safe Cross Code' when negotiating pathways and roadways on site.
- Travel only on assigned pathways to the specified location. Full length staves must not be used within ten (10) metres of power lines.
- Do not place fingers or hands in-between moving or closing parts of test equipment when setting up or dismantling.
- Students must adhere to training instructions for setting up of equipment.
- Equipment must be carried by handles and straps if on equipment.
- Test equipment must be placed on to resting area and never thrown down.
- Test equipment with sharps points must be carried with sharp point facing towards the ground.
- Maintain spatial awareness of other persons when carrying or setting up equipment.
- Ensure that equipment (wooden handles, tripod legs etc.) are free from damage and defects prior to removing from stores.
- Damaged equipment must be reported to lecturer / technician & taken out of use for repair or disposal.
- Assess the test area ground surface conditions prior to setting up equipment.
- Maintain a clear and clean internal & external workspace at all times.
- Ensure to maintain your hydration if working outside for long periods of time.
- Where possible, always keep your skin covered on a clear or cloudy day.
- Use an adequate sun filter protection for exposed skin if required.
- Do not handle any external surfaces (earth, soil, waste materials etc.) with bare hands, use disposable gloves.
- Maintain good hygiene at all times, wash hands thoroughly when work is complete.

Checks & Inspections

- Lecturers to monitor compliance with control measures

Information, Instruction & Training

- Instruction provided for all equipment prior to first use
- Equipment manuals to be made available
- Manual Handling

Personal protective equipment required (last resort)

- High Visibility Vest to be provided and worn
- Safe Access Equipment to be provided
- Safety Boots

- Gloves

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Oedometer	Ref: SWPS CCS 013 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, carrying and placing weights onto and off the machine can result in lower back and musculoskeletal injuries.

Mechanical
Crushing of fingers in between load beam and load platen or adjusting screw. Crushing of hand or fingers if between descending pivoted yoke and load beam.

Falling Machine & Weights
Machine head not bolted properly, unsecure hold of weights, cells, lifting too many weights, weights incorrectly mounted on weight hanger, hanger set up incorrectly can result in in falling weights and lower leg and feet impact injuries.

Slips, trips and falls
Slipping as a result of wet or dusty floors causing falls and head impact injuries, cuts and bruises. Tripping due to test equipment, poor housekeeping & personal belongings resulting in falls & head impact injuries, cuts and bruises.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This apparatus is used for testing the settlement rate of clay and soil samples.

Controls

- Students are permitted to use the machine, under correct instruction and the supervision of the lecturer or technician.
- Lifting, carrying and placing weights to be carried out in accordance with safe manual handling practice and procedure.
- Never place fingers in-between moving load beam and load platen or adjusting screw.
- Never place hands or fingers between descending pivoted yoke and load beam.
- Ensure that the machine head is bolted tight.
- Ensure of a firm hold on weights when lifting and carrying.
- Never carry too many weights at a time.
- Mount the weights on to the weight hanger at right angles to each other.
- Ensure the machine is set up as per manufacturer's instructions
- Test equipment and weights must not be stored on the floor
- Laboratory floor to be kept dry at all times, water spillages and soil samples to be mopped up

immediately.

- Laboratory exercises are supervised by college staff
- First Aid is available in the laboratory
- Wash hands thoroughly when test is complete

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Instruction is given on the safe use of the equipment
- Laboratory exercises are supervised by college staff

Personal protective equipment required (last resort)

- Safety Boots

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 Medium Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

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Safe Work Practice Sheet Permeability Test Apparatus	Ref: SWPS CCS 014 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling

Lifting, carrying and holding test cell, sand bag, and water tank can result in acute or chronic lower back and or musculoskeletal injuries.

Glass sharps

Clearing standpipes from air locks or placing on panel can result in broken glass and cuts to hands and fingers.

Falling Test Equipment

Test cells not secure on workbench or frim hold of can fall and result in crush injuries to the feet.

Slips Trips and Falls

Slipping as a result of wet or sand on floors causing falls and head impact injuries, cuts and bruises. Tripping due to poor housekeeping & personal belongings resulting in falls & head impact injuries, cuts and bruises.

Mechanical

Pinching of fingers when tightening up test cells.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

A test carried out to measure the permeability of soil, clay and sand samples by subjecting the samples to a flow of water under controlled conditions.

Controls

- Students are permitted to use the apparatus, under correct instruction and the supervision of the lecturer or technician.
- Lifting to be carried out in accordance with safe manual handling practice and procedure.
- Do not lift water bath fully laden with water, use a small jug to decant water from the bath.
- Exercise caution when handling standpipes, use both hands to hold.
- Replace standpipe if broken or chipped.
- Clean up any broken glass up immediately.
- Ensure to have a firm hold of test cells when handling.
- Ensure test cells are placed securely in test apparatus and not near the work bench edge.
- Maintain good housekeeping and work areas free from Personal belongings at all times.
- Laboratory floor to be kept dry at all times, water spillages and sand to be cleaned up immediately.
- Students are permitted to use the test equipment under, Laboratory exercises are supervised by college staff.

- First Aid is available in the laboratory

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Lab instruction sheets are issued to all students prior to carrying out an exercise
- Practical instruction is provided in the safe operation of the equipment.
- Laboratory exercises are supervised by college staff

Personal protective equipment required (last resort)

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	24 Medium Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 low Risk

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Safe Work Practice Sheet Plastics & Materials Testing - Flammability	Ref: SWPS CCS 016 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Explosions
Leaking propane gas from damaged lab gas line, faulty bench gas valve, faulty damaged Bunsen burner rubber tubing, and bench gas valve left open can result in explosions when in contact with ignition sources and cause death, first, second and or third degree burns to the body.

Leaking gas
Inhalation of propane gas can result in acute respiratory illness.

Fire
Flammable materials, at or near the workbench, loose, nylon clothing, long hair, burner hose pipes can catch fire from naked flame of the Bunsen burner and result in first, second and or third degree burns.

Hot surfaces
Heating various plastics and other materials can result in first, second and or third degree burns to the hands and fingers when handling. Burns to the hands and fingers when handling heated Bunsen burners.

Melted plastics
Heated various plastics and materials reach their melting point and begin to drip or flow and come into contact with exposed skin or clothing causing severe burns.

Sharps
Use of hacksaws and snips for cutting up test materials can result in severing of fingers, major or minor laceration's to the hands or fingers. Cutting plastic and materials can result in producing sharp plastic points or edges that can cause laceration's to the hands and fingers

Mechanical
Crushing of fingers in between moving parts of the snips.

Flying Debris
Hack sawing or snipping plastics and other materials can generate flying debris resulting in loss of sight or minor eye irritation.

Slips trips and Falls
Poor housekeeping, personal belongings can result in tripping, plastic materials for testing lying on the floor can result in slipping, causing fall impact head injuries, cuts and bruising.

Fumes/Smoke
Heating plastics & materials can generate noxious fumes, when inhaled and cause respiratory illness & irritation.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Identification of combustion characteristics of plastic types.

Controls

- Additional ventilation is provided for flammability test through the opening of windows and doors.
- Students are permitted to carry out testing, under correct instruction and the supervision of lecturers and technicians.
- All lab bench gas valves must be in the closed position prior to turning on at the propane gas mains.
- Listen for possible propane gas leaks as soon as turning on at the mains.
- Turn off the gas at the main supply if there is a smell of gas in the lab.
- Inspect Bunsen burners and hoses for damage or defects prior to using. Do not use if damaged in any way and report to the lecturer or technician for removal and safe disposal of.
- Propane gas must be switched off at the mains supply as soon as no longer required.
- Flammable sources must not be stored at or near the Bunsen burners.
- Loose or nylon clothing must not be worn when operating the Bunsen burners.
- Long hair must be neatly tied back or a well fitted cap worn.
- Bunsen burners must be set up by the lecturer or technician.
- Wear heat resistant gloves when handling hot plastics and other materials?
- Use pliers to hold materials when heating.
- Allow Bunsen burners to cool sufficiently before handling for return to storage.
- Never touch melted or running/flowing test plastics or materials. Always carry out testing on a workbench ensuring catchment of melted materials.
- Never place hands or fingers near a moving hack saw blade when cutting up test materials, use a vice where required.
- Where possible use a snips to cut up test pieces. Always snip materials away from body parts or bystanders.
- Never place fingers or hands in between cutting or moving parts of the snips.
- Never touch metal or plastic sharps with bare hands and fingers, use gloves or pliers to handle.
- Maintain good housekeeping at all times & area work area free from personal belongings.
- Plastics materials must be swept or picked up from the floor immediately.
- Never inhale the smoke or fumes of burning or heated test materials or plastics.
- Always consult the Safety Data Sheets when using Propane gas.

Checks & Inspections

- Lab propane gas line, fixtures and fittings must be checked and records kept by the school.

Information, Instruction & Training

- Instruction is provided in the safe use of equipment.
- Safety Data Sheet

Personal protective equipment required (last resort)

- Safety boots
- Safety Glasses
- Heat Resistant Gloves

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Shear Box Apparatus	Ref: SWPS CCS 017
	Date: 24/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, carrying, holding and placing weights on and off the machine can result in acute or chronic lower back and or musculoskeletal injuries.

Falling Machine & Weights
Machine not bolted to the ground can result in falling due it leaning against; items of clotting catching on it resulting in lower leg and feet crush injuries. Unsecure hold of weights, cells, lifting too many weights, weights not mounted properly on weight hanger, hanger set up incorrectly can result in in falling weights and lower leg and feet crushing injuries.

Electricity
Incorrectly connected, damaged or poorly maintained electrical wiring can result in Electrocution-Death. First second and or third degree burns.

Slips Trips and Falls
Slipping as a result of wet or sand on floors causing falls and head impact injuries, cuts and bruises. Tripping due to poor housekeeping, trailing power cable & personal belongings resulting in falls & head impact injuries, cuts and bruises.

Mechanical
Crushing of fingers when in contact with moving loading lever and jack screw.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Testing the shear strength of soil and sand samples under controlled conditions

Controls

- Manual handling of weights to be carried out in accordance with proper manual handling practice.
- Ensure that the machine is bolted to the ground.
- Students are permitted to use the apparatus, under correct instruction and the supervision of the lecturer or technician.
- Ensure of a firm grip on weights when lifting and carrying.
- Never carry too many weights at a time, only carry what you can safely hold.
- Mount the weights on to the weight hanger at right angles to each other.
- Ensure the machine is set up as per manufacturer's instructions
- Check that the electrical cable and plugs are free from damage or defects prior to use, do not use if

electrical cables are damaged or defecated in any way.

- Competent persons must carry out all electrical repairs.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Laboratory floor to be kept dry at all times, water & sand spillages to be cleaned up immediately.
- Machine power cable must be plugged into socket above the work bench.
- Never place fingers in between ascending or descending loading lever and jack screw.
- Follow the manufacturer's machine standard operating procedures at all times.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Instruction is given on the safe use of the equipment
- Laboratory exercises are supervised by college staff
- First Aid is available in the laboratory

Personal protective equipment required (last resort)

- Safety boots

Initial Risk Rating (without any control measures)

Probability : **3** x Severity **3** = Risk Factor **3 High Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **3** = Risk Factor **3Low Risk**

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Safe Work Practice Sheet Soil Compactor	Ref: SWPS CCS 018
	Date: 24/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly connected, damaged or poorly maintained electrical wiring can result in Electrocution-Death. First second and or third degree burns

Mechanical
Crushing of fingers, hands & feet between descending ram and platen. Entanglement of hair & clothing with top wheel assembly and rotating base platen resulting in asphyxiation and bruises. Pinch points with rotating chain & loss of fingers.

Slips, trips and falls
Slipping as a result of wet or dusty floors causing falls and head impact injuries, cuts and bruises. Tripping due to trailing power cable, test equipment, poor housekeeping & personal belongings resulting in falls & head impact injuries, cuts and bruises.

Falling sample mould
Unsecure grip of test mould, falling and resulting in lower leg and feet impact injuries.

Flying debris
Compacting samples can generate flying particles and cause loss of sight or temporary eye irritation.

Manual Handling
Lifting, carrying and pushing of the sample mould can result in acute or chronic lower back injuries and or musculoskeletal injuries.

Dust
Scooping soil samples can generate dust & result in respiratory irritation and illness. Contact with skin can result in minor skin irritation.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This apparatus is used for compacting wet concrete samples to test for the degree to which the sample reduces in volume or compresses under controlled conditions.

Controls

- Only trained operators are permitted to use the machine.
- Follow the manufacturer's machine operating procedures at all times.
- Students are permitted the use of the machine, under correct instruction and the supervision of the lecturer or technician.

- Long hair must be tied back neatly or a well fitted cap worn when operating the machine.
- The wearing of loose clothing is not permitted.
- Jewellery must not be worn.
- Ensure that the electric power cable and plug is in good working order & free from defects prior to use.
- Do not use the machine if the power cable or plug is damaged in any way.
- Competent persons must carry out electrical repairs.
- Ensure all machine guards are in place prior to setting up the machine.
- Ensure the safety gate lever is closed when setting up the machine & when the machine is not in use.
- Only open the safety gate lever when ready to commence testing.
- Do not place hands, fingers or feet between descending ram and base platen.
- Never touch the rotating chain or moving parts of the machine.
- Ensure the machine power cable is plugged in to the socket above the test work bench.
- Clean any water or test dust spills up as soon as noticed.
- Maintain good housekeeping at all times.
- Personal belongings are not permitted at or near the workstation.
- Do not leave test pieces lying on the ground around the machine.
- Firmly hold on to the sample mould when setting up for testing.
- Safety glasses must be worn when operating the machine or preparing samples.
- Ensure water is added to soil sample prior to crushing.
- Protective gloves to be worn when handling samples
- Scoops / shovels to be used for preparing samples and for loading the sample to apparatus
- Lifting to be carried out in accordance with correct manual handling practice and procedure

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Practical instruction is provided in the safe operation of the equipment.
- Laboratory instruction sheets are issued to students
- Manual handling training
- PPE training

Personal protective equipment required (last resort)

- Protective gloves are provided
- Scoops / shovels are provided
- Safety glasses
- Safety Boots

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Soil Sample Extruder	Ref: SWPS CCS 019
	Date: 24/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting of soil tubes from the ground for extrusion can result in lower back and or musculoskeletal injuries.

Mechanical
Crushing of fingers if in between descending hydraulic ram and machine housing. Hand impact injuries, minor cuts and bruises from operating the manual hydraulic lever.

Slips, Trips and Falls
Poor housekeeping, personal belongings, leaking hydraulic fluid, spilled soil from test sample can result in tripping and slipping causing falls and head impact injuries, concussion and major and minor cuts and bruises.

Chemicals
Contact with hydraulic oil can result in minor skin irritation to the hands and fingers. Inadvertent ingestion may cause stomach irritation and upset.

Falling machinery and Test Samples
Machine not secure on the ground, unsecure hold of test sample, test sample not secure on workbench and on the edge can fall resulting in lower leg and feet crush and impact injuries.

Biological
Handling of soil samples with bare hands can result in contacting Weils disease through cuts, open wounds or inadvertent ingestion resulting in death or major illness.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Use of a hand operated device for extracting core soil and clay samples, and subsequently extruding them from the device for use in further tests and experiments.

Controls

- Lifting to be carried out in accordance with proper manual handling practice and procedures.
- Good hygiene practice must be followed at all times.
- Hands must be washed thoroughly after handling materials and on completion of the exercise.
- Washing facilities are provided.
- Students are permitted to carry out his task, under correct instruction and the supervision of the lecturer or technician.
- Never place fingers in between the descending or ascending hydraulic ram.

- Ensure the machine is set up clear from obstructions when operating the manual hydraulic lever.
- Maintain good housekeeping at all times and work area free from personal belongings.
- Inspect the machine for leaking hydraulic oil prior to use.
- Clean up any leaking oil or spilled soil test samples immediately.
- Wear gloves when operating the machine and handling soil samples.
- Maintain a firm and secure hold of test sample when handling.
- Ensure the machine is mounted securely and level on the ground.
- Test samples must be placed firmly on the workbench top and in from the edge when using.
- Never place hand to mouth when test sol samples.
- Cuts or open wounds must be covered with a plaster.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Practical instruction is provided in the safe operation of the equipment.
- Laboratory instruction sheets are issued to all students
- Manual Handling Training
- MSDS

Personal protective equipment required (last resort)

- Safety Gloves
- Safety Boots

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Soil Sample Preparation	Ref: SWPS CCS 020 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, holding or carrying of packaged soil, sand bags, sample containers, scooping soil, sand etc. from holding vessels, pushing or pulling holding vessels, failed wheel on container vessels can result in acute or chronic lower back injury and or musculoskeletal injuries.

Dust
Pouring of dry soil, sand etc. samples into holding trays and sample containers can generate dust causing acute respiratory irritation or illness.

Falling apparatus and moulds
Decanting samples into various apparatus and moulds and resting them on the side of benches can result in falling materials from unsecure hold of and result in lower leg and feet impact and crush injuries.

Biological
Handling of soil, sand or stones can result in contact with Weils disease and other bacterial infections resulting in a major or minor illness.

Slips, Trips and Falls
Poor housekeeping, personal belongings, soil, sand and stone sample on the floor can result in slips, trips and fall impact head and body cuts and bruises.

Sharps
Quarried rock may contain slivers of stone that can cause minor lacerations to the hands and fingers when handling.

Mechanical
Assembling and disassembling apparatus for soil, sand and stone containment can result in pinching or crushing of fingers.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

General preparation of soil samples for further testing in a variety of laboratory tests and experiments.

Controls

- Students are not permitted to conduct the preparation of soil sampling.
- Food or drink must not be consumed in the laboratory.
- Lifting to be carried out in accordance with proper manual handling practice and procedures.

- Ensure that all soil sand etc. container trolley wheels are free from defect or damage when handling.
- Ensure that there is adequate ventilation when pouring dry soil, sand and stone samples.
- Wear a dust mask where there is the generation of dust from dry samples.
- Ensure to wear the appropriate PPE.
- Maintain a secure hold of apparatus and moulds when handling.
- Always rest the apparatus or moulds being used firm and securely on the work benches and in from the edge.
- Cuts or open wounds must be covered with a plaster prior to handling soil, sand and stones.
- Never handle sample soils, sand or stones with bare hands wear safety gloves and use scoops provided for handling.
- Hands must be washed thoroughly after handling materials and on completion of the exercise.
- Washing facilities are provided
- Good hygiene practice must be followed at all times.
- Maintain good housekeeping and area free from personal belongings at all times.
- Clean up any sample spillage from the floor immediately, use a dust pan and tray.
- Never place hands or fingers in-between moving or clamping parts of sample containers.
- Laboratory exercises are supervised by college staff.
- Always wash your hands when work is complete.

Checks & Inspections

- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Practical instruction is provided in the safe operation of the equipment.
- Manual handling training
- Safety Data Sheets

Personal protective equipment required (last resort)

- Safety boots
- Dust Mask
- Safety Glasses
- Safety Gloves

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Timber Grading	Ref: SWPS CCS 021 Date: 24/07/2014 Revision No. 001 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Sharps
Using a hand held metal scribe for cutting into planks of timber can result in lacerations to the hands and fingers. Scribing with the timber resting on the upper legs can result in lacerations to the upper legs.

Falling Timber
Unsecure hold of planks of timber when carrying, resting on workbench edge for scribing can fall causing lower leg or feet impact injuries.

Timber Splinters
Incorrectly stored, damaged or over used pieces of timber may contain splinters and result in puncture wounds to the hands and fingers.

Timber Plank
Swinging of a timber plank when transporting or when using at the workbench can result in blunt force impact blows to the head and cause concussion and or major or minor cuts and bruising to head and other body parts.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Visual inspection of timber samples to determine general quality based on grain structure, knotting and other such features.

Controls

- Wear safety gloves when handling timber pieces
- Students are permitted to carry out testing on timber under correct instruction and the lecturer or technicians supervision.
- Never place your free hand or fingers in between scribe and timber or in the direction of where the timber is being scribed.
- Always place the timber for scribing on top of the lab workbench.
- Ensure to maintain a secure hold of planks of timber when transporting.
- Ensure the timber is placed firmly and in from the edge of the workbench edge when scribing.
- If required seek assistance to hold the piece of timber firmly on the workbench when scribing.
- Ensure that the timber for scribing is stored free from objects resting or banging against it.
- Inspect the timber for damage and splinters prior to using it, do not use if damaged in anyway and remove it for repair or replacement.
- Never swing the pieces of timber for testing when carrying to the workbenches.
- Always observe your spatial surroundings when handling test pieces of timber.

Checks & Inspections

- Ensure the timber is free from damage or defects prior to use.

Information, Instruction & Training

- Students are given instruction in the safe use of tools
- Students are supervised when carrying out all practical work

Personal protective equipment required (last resort)

- Safety gloves
- Safety Boots

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 Medium Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

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Safe Work Practice Sheet Tri-axial Compression Test Apparatus	Ref: SWPS CCS 022
	Date: 24/07/2014
	Revision No. 001
	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Poorly maintained, incorrectly fitted, damaged electrical cables or plugs, wet hands when operating the machine can result in electrocution-death or first second and third degree burns.

Manual Handling
Moving parts of the machine and test equipment can result in lower back and or musculoskeletal injuries.

Slips, Trips and Falls
Trailing power cables, poor housekeeping, personal belongings, spilled and leaking water and oil can cause tripping and slipping resulting fall impact head and body injuries.

Mechanical
Pinching of fingers when assembling bolts to platen.

Falling machinery and equipment
Machinery not placed securely on workbench, unsecure hold of test equipment resulting in falling and causing lower leg and feet crushing and impact injuries.

Biological
Handling of soil samples with bare hands can result in contacting Weils disease through cuts, open wounds or inadvertent ingestion resulting in death or major illness.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This device is used for carrying out compression tests on clay samples

Controls

- Students are permitted use of the machine, under correct instruction and the lecturer or technicians supervision.
- Food or drink is not permitted.
- Ensure that the electric power cable and plug is in good working order & free from defects prior to use.
- Do not use the machine if the power cable or plug is damaged in any way.
- Competent persons must carry out all electrical repairs.
- Ensure both hands are dry when operating the machine.
- Lifting to be carried out in accordance with safe manual handling practice and procedure.
- Maintain good workplace housekeeping and area free from personal belongings at all times.Laboratory floor to be kept dry at all times, water and oil spillages to be mopped up immediately.
- Ensure that all machine water hoses are free from damage or defects and running to the sink and drain.

- Ensure that the machine is free from oil leaks prior to and when operating the machine.
- Do not place fingers in-between bolt and platen when assembling.
- All test machinery must be placed level and in from the edge of the work bench.
- Maintain a secure hold of test equipment when handling.
- Wear gloves when handling soil samples.
- Cuts and open wounds on hands and fingers must be dressed with a plaster prior to operating the apparatus.
- Good hygiene practice must be followed at all times.
- Always wash your hands when work is complete.
- Follow the manufacturer's machine operating procedures at all times
- Laboratory exercises are supervised by college staff
- First Aid is available in the laboratory

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Instruction is given on the safe use of the equipment
- Laboratory exercises are supervised by college staff
- First Aid is available in the laboratory
- Manual Handling Training
- MSDS

Personal protective equipment required (last resort)

- Safety Gloves

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Portable Weighing Scales	Ref: SWPS CCS 023 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Poorly maintained, damaged electrical cable and plugs can result in electrocution-death or first, second and or third degree burns.

Manual Handling
Moving the weighing scales on or to the work bench, decanting test samples on to and off the weighing scales can result in acute or chronic lower back and or musculoskeletal injuries.

Slips, Trips and Falls
Poor housekeeping, personal belongings, trailing cables, spilled soil, sand and rock samples can result in tripping and slipping causing falls and head impact concussion, major and minor cuts and bruises.

Biological
Handling of test soil, sand and rock samples with bare hands can result in contacting Weils disease and other bacterial infections causing a major illness.

Falling Equipment
Weighing scales not mounted level and on the edge of the work bench, unsecure hold of the scales when transporting can fall causing lower leg and feet crush and impact injuries.

Dust
Weighing various samples can result in dust being generated and cause acute upper respiratory irritation.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This device's are used for the approximate weighing (Grams to over 20 Kilos) of soil, sand and rock samples being used for various test machines and apparatus.

Controls

- Students are permitted to use the equipment, under correct instruction and the supervision of the lecturer or technician.
- Ensure that the electric power cable and plug is in good working order & free from defects prior to use.
- Do not use machine if the power cable or plug are damaged in any way.
- Competent persons must carry out all electrical repairs.
- Ensure that the machine is plugged into the power socket above the lab workbench selected.
- Follow the manual handling training guidelines at all times when handling loads.
- Maintain good housekeeping and area free from personal belonging at all times.
- Spilled soil, sand and rock test samples must be cleaned up from the floor immediately.

- Use gloves and scoops when weighing soil, sand and rock samples.
- Weighing scales must be mounted flat and in from the edge of the work benches being used.
- Maintain a secure hold of the weighing scales when transporting.
- Ensure the room is well ventilated when weighing samples.
- Always wash your hands when work is complete.
- Open cuts or wounds must be dressed with a plaster prior to commencement of work.
- Wear a dust mask when weighing and transferring soil, sand and stone samples.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- MSDS

Personal protective equipment required (last resort)

- Safety Gloves
- Safety Boots
- Dust Mask

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet	Ref: SWPS CCS 024
	Date: 24/07/2014
Buckling Apparatus	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Moving the machine in to the required position requires pushing, pulling or lifting the apparatus and can cause acute or chronic lower back and or musculoskeletal injuries.

Falling Machine
Attempting to lift and carry the apparatus on your own, apparatus resting at the edge of the work bench, being carried to another test workbench can fall causing major and minor lower leg and feet crush and impact injuries.

Falling Weights
Moving the apparatus laden with weights to a different workbench location, incorrect placement of weights on apparatus, failed or damaged weight string can result in falling weights resulting in minor lower leg and or feet impact injuries.

Mechanical
Changing of apparatus strut holding blocks, holding or touching the apparatus adjusting coiled spring when operating and levelling the apparatus can result in pinching of skin on hands and fingers.

Slips Trips and Falls
Poor housekeeping, personal belongings can result in slipping and tripping causing fall head and body impact injuries.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This apparatus is used to measure the failure points in various metal struts under load.

Controls

- The lecturer or technician must only use the apparatus, students must only observe for data collection.
- Follow the manual handling training guidelines at all times.
- Where possible carry out the test on the bench that the apparatus is resting on and incrementally move the machine into the required set up position.
- Never attempt to carry or lift the apparatus on your own.
- Seek assistance if required to move the apparatus from one workbench to another.
- Maintain a secure hold of the apparatus when moving to another workbench.
- Place the apparatus securely on the workbench and in from the edge when setting up or storing away.
- Ensure that the string for supporting wieghts is in good working order and free from defects prior to use.
- Place the weights onto the apparatus at right angles to each other.
- Never transport the apparatus laden with weights.
- Do not touch or hold the apparatus coiled spring when adjusting or using the apparatus.
- Keep fingers clear of strut holding clamps devices when changing and tightening.
- Maintain good housekeeping and work area free from personal belongings at all times.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling

Personal protective equipment required (last resort)

- Safety Boots

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Bearing Capacity of Shallow Foundations	Ref: SWPS CCS 025 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Pushing or pulling the soil test box into position, filling or emptying the soil test box can result in acute or chronic lower back and or musculoskeletal injuries.

Mechanical
Crushing of fingers if in between the ascending manually operated load screw and load cell.

Slips Trips and Falls
Poor housekeeping, personal belongings, sand, soil etc. on the floor can result in slipping and tripping causing fall head and body impact injuries.

Biological
Handling of test soil, sand samples with bare hands can result in contacting Weils disease and other bacterial infections causing a major illness.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This apparatus is used to test model footing failure in a soil test box.

Controls

- The lecturer or technician must only set up the apparatus.
- Students are permitted to carry out his task, under correct instruction and the supervision of the lecturer or technician.
- Follow the manual handling training guidelines at all times.
- Seek assistance if required when moving the soil test box.
- Use a scoop to empty or fill the soil test box.
- Never place hands and fingers in between the ascending manually operated load screw.
- Maintain good housekeeping at all times and work area free from personal belongings at all times.
- Any spilled soil, sand etc. must be swept up from the floor immediately.
- Wear gloves when handling soil.
- Food or drink is not permitted.
- Open cuts or wounds must be dressed with a plaster prior to commencement of work.
- Follow good hygiene practice at all times.
- Wash hands when work is complete.

Checks & Inspections

- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- MSDS

Personal protective equipment required (last resort)

- Safety Boots
- Safety Gloves

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Bearing Capacity of Deep Foundations	Ref: SWPS CCS 026 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Pushing or pulling the soil test tank into position, emptying the soil test tank, lifting sand bags etc. to fill the test tank can cause acute or chronic lower back and or musculoskeletal injuries.

Mechanical
Crushing of fingers if in between hinged parts of the bottle jack. Pinching of fingers when assembling the bottle jack to the apparatus.

Slips Trips and Falls
Poor housekeeping, personal belongings, sand, soil, leaking hydraulic oil on the floor can result in slipping and tripping causing fall head and body impact injuries.

Biological
Handling of test soil, sand samples with bare hands can result in contacting Weils disease and other bacterial infections causing a major illness.

Falling Apparatus
Failed wheels on the apparatus can result in a collapsing and falling apparatus causing lower leg and feet crush and impact injuries.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

This apparatus is used to model pile foundation to failure in a soil test tank.

Controls

- The lecturer or technician must only set up the apparatus.
- Students are permitted to carry out this task, under correct instruction and the supervision of the lecturer or technician.
- Follow the manual handling training guidelines at all times.
- Seek assistance if required when moving the soil test tank.
- Use a scoop to empty or fill the soil test tank.
- Never hold the bottle jack by the hinge parts when operating it.
- Keep your fingers clear of the bolt and nut when assembling onto the apparatus.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Any spilled soil, sand or leaking hydraulic oil must be swept and cleaned up immediately.
- Wear gloves if in contact with handling soil.
- Food or drink is not permitted.
- Open cuts or wounds must be dressed with a plaster prior to commencement of work.
- Follow good hygiene practice at all times.

- Wash hands when work is complete.
- Ensure that the wheels of the apparatus are in good working order prior to use.

Checks & Inspections

- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- MSDS

Personal protective equipment required (last resort)

- Safety Boots
- Safety gloves

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	3 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet	Ref: SWPS CCS 027
	Date: 24/07/2014
Flexure Bending Machine	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly connected, damaged or poorly maintained machine electrical wiring or plugs can result in Electrocution-Death. First second and or third degree burns

Manual Handling
Lifting of concrete or timber test beams to & from the machine, removing or replacing machine rollers or parts can cause acute or chronic lower back and or musculoskeletal injuries.

Mechanical
Crushing or entrapment of fingers or hands, loose clothing or long hair in between the descending platen and test material or ascending machine ram.

Slips Trips and Falls
Poor housekeeping, personal belongings, trailing power cable, test beams and fragments & machine parts lying on the floor, leaking hydraulic oil can result in tripping and slipping causing fall head and body impact injuries.

Falling test pieces
Unsecure hold of test piece when loading into the machine, test piece breaks and falls when being removed after testing resulting in lower leg and feet impact and crush injuries.

Sharps
Testing concrete and timber materials under load can cause material sharps to break off and result in minor cuts or puncture wounds to the hands and fingers when handling damaged beams or fragments.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The machine is used to test the failure point of concrete timber beams.

Controls

- Students are permitted to use the machine, under correct instruction and the supervision of the lecturer or technician.
- Ensure that the machine electrical cables and plug are free from damage or defect prior to use.
- Do not use the machinery if cable or plugs damaged in anyway.
- Competent person/s must carry out all electrical repairs.
- Avoid the trailing of power cables on walkways.
- Follow the manual handling training procedures at all times and seek assistance if required.
- Lecturer or the technician must set up the machine for use.
- Loose clothing or jewellery must not be worn when operating the machine.
- Long hair must be neatly tied back or a well fitted cap worn.
- Never place your hands and fingers in between the ascending or descending ram, platen and materials.

- Maintain good housekeeping at all times and work area free from personal belongings.
- Never store or place test beams and machine parts on the floor space around the machine.
- Check for hydraulic leaks prior to using the machine. Fix any leaks before using the machine.
- Clean up any hydraulic fluid from the floor immediately.
- Wear safety gloves if required to handle hydraulic fluid.
- Use a dust pan and brush to sweep up any test beam fragments from the ground or the machine.
- Use builder's gloves when handling beams before or after testing.
- Maintain a secure hold of the test material when loading into the machine.
- Exercise caution when removing and carrying tested materials from the machine. Place onto a wooden pallet for removal from the work shop.
- Ensure that the machine loading sensor is in good working order when using the machine.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling

Personal protective equipment required (last resort)

- Safety Boots
- Safety gloves

Initial Risk Rating (without any control measures)

Probability : **3** x Severity **3** = Risk Factor **9 High Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **3** = Risk Factor **3 Low Risk**

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Safe Work Practice Sheet Dry Brick Formation Building	Ref: SWPS CCS 028 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, holding and carrying bricks to and from storage for dry brick building on the floor can cause acute or chronic lower back and or musculoskeletal injuries.

Slips Trips and Falls
Poor housekeeping, personal belongings, stepping over building bricks formations on the ground, brick dust and debris, building brick formations in front of escape exits or on a walkway to an exit can result in tripping and slipping causing fall head and body impact injuries.

Falling Bricks
Unsecure hold of and carrying too many bricks to and from storage resulting in lower leg and feet impact and crush injuries.

Sharps
Handling bricks to and from storage can result in minor cuts to the hands and fingers from sharp brick cut edges and rough brick parts.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Demonstrating the various brick formations that can be applied when brick building

Controls

- Follow the manual handling training procedures at all times when brick building.
- Students are permitted to carry out this task, under correct instruction and the lecturer or technicians supervision.
- Never over load the body with too many bricks when lifting or carrying. Always carry what you can securely hold.
- Maintain good housekeeping at all times and work area free from personal belongings.
- Bricks must be returned to storage as soon as demonstration is complete.
- All brick dust and debris must be swept from the floor as soon as possible.
- Always walk around the dry brick formation and never step over it.
- Do not build brick formations in front of or near an escape exit or walk way to an exit.
- Wear builders gloves when handling bricks to and from storage

Checks & Inspections

- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling

Personal protective equipment required (last resort)

- Safety Boots
- Safety gloves

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	2	=	Risk Factor	4 Medium Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	2	=	Risk Factor	2 Low Risk

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Safe Work Practice Sheet	Ref: SWPS CCS 029
	Date: 24/07/2014
Dust Extractor Machine	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly connected, damaged or poorly maintained machine electrical wiring or plugs can result in Electrocution-Death. First second and or third degree burns

Manual Handling
Lifting, pulling and pushing the machine to and from storage can cause acute or chronic lower back and or musculoskeletal injuries.

Slips Trips and Falls
Poor housekeeping, personal belongings, stepping over trailing power cables, machine placed in front of an escape exit or blocking a walkway to an exit can result in tripping and slipping causing fall head and body impact injuries.

Falling Machine
The machine legs and or wheel of the machine fail resulting in a collapsing and falling machine causing lower leg and feet impact and crush injuries. .

Cement Dust
Removing the dust box from the machine can result in inhalation of cement dust causing acute or chronic respiratory illness, contact with cement dust on the skin can result in contact dermatitis, burns to the skin or eyes.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The machine is used for extracting cement dust from the air when making up cement batches.

Controls

- Students are permitted to use the machine, under correct instruction and the supervision of the lecturer or technician.
- Ensure that the machine electrical cable and plug is free from damage or defects prior to use.
- Do not use the machine if the electrical cable or plugs are damaged in any way,
- Competent person/s must carry out all electrical repairs.
- Follow the manual handling training guidelines at all times when moving the machine
- Maintain good housekeeping and work area free from personal belongings at all times.
- Always plug the extractor in from the back of the machine to power socket on the wall.
- Never position the machine in front of an escape exit or block a walkway to an escape exit.
- Inspect the wheels and legs of the machine for damage or defects prior to moving.
- Do not move the machine if the wheels or legs/frame are damaged in any way. Competent person/s must carry out repairs.

- Wear safety gloves, glasses and a dust mask when emptying the machine dust box.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- Chemical handling training
- PPE training.

Personal protective equipment required (last resort)

- Safety Boots
- Safety gloves
- Dust Mask
- Safety Glasses

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Rifle Boxes & Sieves	Ref: SWPS CCS 030 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Pulling, pushing, lifting and carrying the rifle boxes and sieves unloaded or loaded with gravel for grading can result in acute or chronic lower back and or musculoskeletal injuries.

Dust
Pouring dry gravel into the rifle box for separation or from the rifle box to a sieve or from one sieve to another for grading can result in the inhalation of dust causing acute or chronic respiratory illness or disease.

Flying debris
Pouring dry gravel from the rifle box or sieves can result in air borne flying debris causing acute minor irritation to the eyes.

Sips Trips and Falls
Poor housekeeping, personal belongings, stepping over grading equipment lying on the ground, spilled gravel can result in slipping and tripping causing head and body fall impact injuries, cuts and bruises.

Blocked fire exit
Setting the rifle box up in front of the fire exit or blocking walkway to an exit can result in an unsafe passage from the building in the event of an emergency.

Falling rifle box of sieves
Unsecure hold of rifle box and sieves when moving from storage, failed handles on rifle box when grading dry grave, sieves falling from workbench or weighing scales can result in crush and impact lower leg and feet injuries.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The rifle box and sieves are used to assist in determining dry gravel particle size distribution.

Controls

- Students are permitted to use the equipment, under correct instruction and the supervision of the lecturer or technician.
- Follow the manual handling training guidelines at all times.
- Wear a dust mask when handling dry gravel for decanting to and from rifle box or sieves.
- Wear safety glasses when performing gravel for grading.
- Maintain good housekeeping and workspace free from personal belongings at all times.
- Never step over equipment lying on the ground, always walk around it.
- Spilled gravel must be swept up immediately.
- Rifle boxes and sieves must be returned to storage when they are no longer required.

- Do not impede any escape exits or walkways when setting up the rifle box for use.
- Maintain a secure hold to equipment when handling.
- Always place sieves or rifle boxes in from the edge of a work bench.
- Ensure that sieves are placed flat and securely on weighing scales.
- Inspect that the handles of the rifle box are free from damage or defects prior to use, do not use if damaged in any way and report to the lecturer or technician for removal and repair.

Checks & Inspections

- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- PPE training.

Personal protective equipment required (last resort)

- Safety Boots
- Dust Mask
- Safety Glasses

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet	Ref: SWPS CCS 031
	Date: 24/07/2014
Sieve Shaking Machines	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Incorrectly fitted, poorly maintained, damaged machine electrical cables or plugs can result in electrocution– death or first, second and or third degree burns.

Manual Handling
Lifting and carrying the sieves loaded with gravel for grading to the machine, pulling and pushing the machine in and out from storage can result in acute or chronic lower back and or musculoskeletal injuries.

Dust
Shaking the sieves on the machine for gravel grading can result in the generation and inhalation of dust causing acute or chronic respiratory illness or disease.

Flying debris
Shaking the sieves mechanically for grading can result in air borne flying debris causing acute minor irritation to the eyes.

Sips Trips and Falls
Poor housekeeping, personal belongings, trailing power cables on the ground, spilled gravel can result in slipping and tripping causing head and body fall impact injuries, cuts and bruises.

Falling sieves and parts of machinery
Unsecure hold of sieves when moving to and from machines, sieves not placed properly in machines, unsecure hold of machine clamp for holding sieve in place can result in impact lower leg and feet injuries.

Mechanical
Inadvertent pinching of fingers when clamping sieves into place with descending tightening and clamp resulting in cuts and bruises.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The machines are used to shake dry gravel so as to determine the particle size distribution in the sieves.

Controls

- Students are permitted to use the machines, under correct instruction and the supervision of the lecturer or technician.
- Ensure that the machine electrical cable an plug are free from damage or defect prior to use, do not use if damaged or defected in any way.
- Competent person/s must carry out electrical repairs.
- Follow the manual handling training guidelines at all times.
- Seek assistance if required when moving machinery.

- Ensure that there is adequate ventilation. Wear a dust mask.
- Wear safety glasses at all times.
- Ensure that the lid of the sieve is place on the top sieve before and during the use of the machine.
- Maintain good housekeeping and workspace free from personal belongings at all times.
- Avoid the trailing of power cables and use the sockets mounted onto the wall behind the machines.
- Spilled gravel must be swept up immediately.
- Maintain a secure hold of sieves and clamps when handling.
- Ensure that the sieves are securely placed and clamped in the machine before operating it.
- Maintain hands and fingers free from descending tightening screws and clamps.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling

Personal protective equipment required (last resort)

- Safety Boots
- Dust Mask
- Safety Glasses

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Compactor for Gravel	Ref: SWPS CCS 032 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting and dragging the compactor to and from storage, lifting the mechanical compactor ram head or sample container can result in acute or chronic lower back and or musculoskeletal injuries.

Mechanical
Crushing of feet, hands and fingers with descending ram and machine platen. Severing of fingers with descending ram and sample container. Pinching of fingers on loading catch when positioning the descending ram.

Sips Trips and Falls
Poor housekeeping, personal belongings, sample containers lying on the ground, spilled gravel and dust can result in slipping and tripping causing head and body fall impact injuries, cuts and bruises.

Falling machinery and containers
Unsecure hold of the machine when moving and dragging to and from storage, unsecure hold of sample container can result in impact lower leg and feet injuries.

Dust
Compacting gravel in sample containers can result in the generation and inhalation of dust causing acute or chronic respiratory illness or disease.

Flying debris
Compacting gravel in sample containers can result in air borne flying debris causing acute minor irritation to the eyes or loss of sight.

Impeded Exit
Compactor device is positioned blocking an escape exit or walkway impeding safe exit from the building.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The apparatus is a mechanically operated device to compact gravel in sample containers.

Controls

- Students are permitted to operate this device under correct instruction and the lecturer or technicians supervision.
- Group gatherings are permitted with the device under the lecturer or technicians supervision.
- Loose clothing or jewellery must not be worn when operating the device.
- Long hair must be neatly tied back or a well fitted cap worn.
- Lecturer must determine safe distance stance position for student observers.

- Follow the manual handling training guidelines at all times.
- Seek assistance if required when moving machinery.
- Never place feet, hands or fingers in between the descending ram and platen. Follow the same rule when setting the device up.
- Ensure that the machine safety release bolt is in position when setting the machine up. Inspect the safety bolt for wear and tear and replace if necessary.
- Never lace fingers in between the loading catch of the device.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Never place or store gravel sample containers on the ground around the device.
- Clean up any spilled gravel or dust from the floor as soon as possible.
- Maintain a secure hold of the machine when moving to and from storage, seek assistance if required.
- Maintain a secure hold of gravel sample containers when loading and unloading the device.
- Ensure the room is well ventilated when carrying out the compacting procedure.
- Stand in an upright position when operating the compactor device.
- Never position the device in front of an escape exit or impede a walkway.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- PPE Training

Personal protective equipment required (last resort)

- Safety Boots
- Dust Mask
- Safety Glasses

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Slump Test	Ref: SWPS CCS 033 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, dragging and carrying the metal mixing tray, slump cone to and from storage, scooping wet cement into slump cone, compacting wet cement mix can result in acute or chronic lower back and or musculoskeletal injuries.

Sips Trips and Falls
Poor housekeeping, personal belongings, wet floors, slump cones lying on the ground, spilled wet cement on the ground, stepping on and off the mixing tray can result in slipping and tripping causing head and body fall impact injuries, cuts and bruises.

Chemicals
Handling wet cement when filling slump cones can result in severe burns to the hands, fingers and other exposed skin parts. Filling slump cones with wet cement can contaminate clothing and footwear resulting in severe burns to the skin.

Impeded Exit
Mixing tray is positioned blocking an escape exit or walkway and impeding safe exit from the building.

Waste Material
Disposal of wet cement when test is carried out can result generating large slaps of cement when pooled into one pile.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The slump test is carried out to test the workability of concrete.

Controls

- Students are permitted to use the slump cone, under correct instruction and the lecturer or technicians supervision.
- Group gatherings are permitted with the device under the lecturer or technicians supervision.
- Loose clothing or jewellery must not be worn when using the device.
- Long hair must be neatly tied back or a well fitted cap worn.
- Lecturer must determine safe distance stance position for student observers.
- Follow the manual handling training guidelines at all times.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Use the stainless steel mixing tray when carrying out slump test
- Never place or store slump cones on the ground or around the mixing tray.
- Maintain secure footing when stepping on and off the mixing tray.

- Clean up any spilled wet cement or water from the floor immediately.
- Maintain a secure hold of the mixing tray when moving to and from storage, seek assistance if required.
- Wear safety gloves, glasses and protective footwear when handling wet cement.
- Remove any clothing or footwear contaminated with wet cement immediately.
- Wash any skin contaminated with wet cement immediately.
- Never position the mixing tray in front of an escape exit or impede a walkway.
- When test is completed the wet cement must be scooped into small loads into plastics bags for safe removal and disposal.
- Test equipment must be returned to storage when test is competed..
- Always wash and dry your hands when testing is complete.

Checks & Inspections

- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- PPE Training
- Chemical Handling training
- MSDS Cement

Personal protective equipment required (last resort)

- Safety Boots
- Safety Gloves
- Safety Glasses

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Cube, Cylinder and Beam Molds	Ref: SWPS CCS 034 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, dragging and carrying the metal moulds to and from storage, dismantling and clamping the moulds scooping wet cement into the moulds, compacting the wet cement mix in the moulds, washing the moulds after use, using the metal tray for resting the moulds on, placing moulds onto the workbench can result in acute or chronic lower back and or musculoskeletal injuries.

Sips Trips and Falls
Poor housekeeping, personal belongings, wet floors, moulds lying on the ground, spilled wet cement on the ground, stepping on and off the mixing tray can result in slipping and tripping causing head and body fall impact injuries, cuts and bruises.

Chemicals
Handling wet cement when filling moulds can result in severe burns to the hands, fingers and other exposed skin parts. Filling moulds with wet cement can contaminate clothing and footwear resulting in severe burns to the skin.

Impeded Exit
Mixing tray or moulds are positioned blocking an escape exit or walkway and impeding safe exit from the building.

Mechanical
Crushing or pinching of fingers when assembling the moulds.

Falling Moulds
Unsecure hold of the mould when dismantling and assembling, mould placed on the edge of the workbench incorrect method of handling the mould can result in falling moulds and lower leg and feet crush and impact injuries.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The moulds are used to form cement into various shapes and sizes.

Controls

- Students are permitted to use the moulds, under correct instruction and the lecturer or technicians supervision.
- Group gatherings are permitted with the moulds under the lecturer or technicians supervision.
- Loose clothing or jewellery must not be worn when using the moulds.
- Long hair must be neatly tied back or a well fitted cap worn.

- Follow the manual handling training guidelines at all times.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Use the stainless steel mixing tray when required with moulding.
- Never place or store moulds on the ground or around the mixing tray.
- Maintain secure footing when stepping on and off the mixing tray.
- Clean up any spilled wet cement or water from the floor immediately.
- Maintain a secure hold of the mixing tray when moving to and from storage, seek assistance if required.
- Wear safety gloves, glasses and protective footwear when handling wet cement.
- Remove any clothing contaminated with wet cement immediately.
- Wash any skin contaminated with wet cement immediately.
- Never position the mixing tray or moulds in front of an escape exit or impede a walkway.
- Maintain fingers clear from mould clamping devices and hinges when assembling.
- Instruction must be provided for students in how to assemble, disassemble and handle moulds.
- Moulds must be placed in from the edge of workbench.
- Assembling and disassembling of small moulds should be carried out on a work bench.
- Moulds must be returned to storage when no longer required.
- Always wash and dry your hands when testing is complete.

Checks & Inspections

- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- PPE Training
- Chemical Handling training
- MSDS

Personal protective equipment required (last resort)

- Safety Boots
- Safety Gloves
- Safety Glasses

Initial Risk Rating (without any control measures)

Probability :	2	x	Severity	3	=	Risk Factor	6 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Vibrating Table	Ref: SWPS CCS 035 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, dragging, pulling or pushing the machine to and from storage, loading the moulds on and off the machine can result in acute or chronic lower back and or musculoskeletal injuries.

Electricity
Incorrectly fitted, poorly maintained, damaged machine electrical cable or plugs can result in electrocution–death or first, second and or third degree burns.

Sips Trips and Falls
Poor housekeeping, personal belongings, wet floors, moulds lying on the ground, spilled wet cement on the ground, trailing power cable can result in slipping and tripping causing head and body fall impact injuries, cuts and bruises.

Chemicals
Handling wet cement on the frame of the moulds or from the ground can result in severe burns to the hands, fingers and other exposed skin parts.

Impeded Exit
Vibrating machine or mould set up in such a way that it blocks an escape exit or walkway thus impeding safe exit from the building.

Mechanical
Pinching of fingers when tightening the moulds.

Falling Moulds
Unsecure hold of the mould when loading and unloading the machine, can result in falling moulds and lower leg and feet crush and impact injuries.

Vibration
Holding on to the machine when it is in operation may result in in hand arm vibration syndrome also resulting in white finger.

Noise
Running the machine to de-aerate moulds generates noise and may cause acute temporary hearing discomfort, long term use may result in loss of hearing.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The machine is used to vibrate and de-aerate wet loaded concrete moulds.

Controls

- Students are permitted to use the machine, under correct instruction and the lecturer or technicians supervision.
- Group gatherings are permitted with the machine under the lecturer or technicians supervision.
- Loose clothing or jewellery must not be worn when using the machine.
- Long hair must be neatly tied back or a well fitted cap worn.
- Follow the manual handling training guidelines when using the machine and loading with moulds.
- Inspect the machine electrical power cable and plug prior to use.
- Do not use the machine if cable or plug is damaged in any way, report to lecturer or technician for removal from use.
- Competent person/s must carry out electrical repairs.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Never place or store moulds on the ground or around the mixing tray.
- Clean up any spilled wet cement or water from the floor immediately.
- Ensure that there are no trailing power cables along the ground when setting up the machine. Use the power sockets above the workbench.
- Maintain a secure hold of the mixing tray when moving to and from storage, seek assistance if required.
- Wear safety gloves, glasses and protective footwear when handling wet cement.
- Remove any clothing contaminated with wet cement immediately.
- Wash any skin contaminated with wet cement immediately.
- Never position the machine in front of an escape exit or impede a walkway.
- Maintain fingers clear from machine clamping devices when loading the moulds.
- Instruction must be provided for students in how to load and operate the machine.
- Maintain a secure hold of the mould when loading the machine. Seek assistance when loading and unloading the machine with moulds.
- Never hold on to or touch the machine when it is in operation.
- Wear hearing protection when operating the machine or in the vicinity of the machine. Where possible tend other duties away from the machine.
- Always use the machine as per manufacturer's instructions.
- Always wash and dry your hands when moulding is complete.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- PPE Training
- Chemical Handling training
- MSDS

Personal protective equipment required (last resort)

- Safety Boots

- Safety Gloves
- Safety Glasses
- Hearing protection

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Cement Mixer	Ref: SWPS CCS 036 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, dragging, pulling or pushing the machine to and from storage, loading the machine with buckets of sand, gravel, cement and water, unloading the machine onto the cement stainless steel tray can result in acute or chronic lower back and or musculoskeletal injuries.

Electricity
Incorrectly fitted, poorly maintained, damaged machine electrical cable or plugs can result in electrocution–death or first, second and or third degree burns.

Sips Trips and Falls
Poor housekeeping, personal belongings, wet floors, spilled wet cement or spilled dry parts on the ground, trailing power cable can result in slipping and tripping causing head and body fall impact injuries, cuts and bruises.

Chemicals
Handling wet cement on the frame of the moulds or from the ground can result in severe burns to the hands, fingers and other exposed skin parts.

Flying Debris
Loading the machine with gravel, sand, cement can cause flying debris resulting in major or minor eye damage.

Impeded Exit
The mixer is set up in such a way that it blocks an escape exit or walkway thus impeding safe exit from the building.

Mechanical
Crushing of hands and fingers when in between the rotating mixing drum and frame, entanglement of loose clothing or long hair with rotating shaft or inner drum baffles.

Falling Moulds
Unsecure hold of the mould when loading and unloading the machine, can result in falling moulds and lower leg and feet crush and impact injuries.

Vibration
Holding on to the machine when it is in operation may result in in hand arm vibration syndrome also resulting in white finger.

Toppling Machine
Wheels or axle of the machine fail and cause the machine to topple resulting in lower leg and feet crush injuries.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The machine is used to mix a wet cement mix for various moulding.

Controls

- Students are permitted to use the mixer, under correct instruction and the lecturer or technicians supervision.
- Group gatherings are permitted with the machine under the lecturer or technicians supervision.
- Loose clothing or jewellery must not be worn when using the machine.
- Long hair must be neatly tied back or a well fitted cap worn.
- Follow the manual handling training guidelines when removing and returning the mixer to and from storage, loading and unloading the mixer.
- Inspect the machine electrical power cable and plug prior to use.
- Do not use the machine if electrical cable or plug is damaged in any way, report to lecturer or technician for removal from use.
- Competent person/s must carry out electrical repairs.
- Ensure that all machine guards are in place prior to using the machine.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Clean up any spilled wet cement, water or dry parts from the floor immediately.
- Ensure that there are no trailing power cables along the ground when setting up the machine. Use the power sockets above the workbench.
- Wear safety gloves, glasses and protective footwear when handling wet cement.
- Remove any clothing contaminated with wet cement immediately.
- Wash any skin contaminated with wet cement immediately.
- Safety glasses must be worn when operating the machine.
- Loose clothing must not be worn when operating the mixer.
- Long hair must be neatly tied back or a well fitted cap worn.
- Never place hands in between the rotating mixing drum and the frame of the machine.
- Never position the mixer in front of an escape exit or impede a walkway.
- Never place hands, arms or other body parts into the mixing drum.
- Instruction must be provided for students in how to operate the machine.
- Never hold on to or touch the machine when it is in operation.
- Always use the machine as per manufacturer's instructions.
- Always wash and dry your hands when mixing is complete.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- PPE Training
- Chemical Handling training
- MSDS

Personal protective equipment required (last resort)

- Safety Boots
- Safety Gloves
- Safety Glasses

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Curing Tank	Ref: SWPS CCS 037 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Loading and unloading the machine with cement beams, cubes or cylinders, emptying the tank of water for cleaning can result in acute or chronic lower back and or musculoskeletal injuries.

Electricity
Incorrectly fitted, poorly maintained, damaged machine electrical cable or plugs can result in electrocution–death or first, second and or third degree burns.

Sips Trips and Falls
Poor housekeeping, personal belongings, wet floors, trailing power cable, beams, cubes or cylinders lying on the ground can result in slipping and tripping causing drowning, head and body fall impact injuries, cuts and bruises.

Chemicals
Handling wet cement moulds to and from the curing tank can result in severe burns to the hands, fingers and other exposed skin parts.

Falling Moulds
Unsecure hold of the mould when loading and unloading into the curing tank can result in falling moulds and lower leg and feet crush and impact injuries.

Person Exposed to Risk

☑ Students ☑Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

The curing tank is used to prevent concrete beams, cubes and cylinders from drying out too quickly.

Controls

- Loan working is not permitted with this machine under any circumstances.
- Students are permitted to use the curing tank, under correct instruction and the lecturer or technicians supervision.
- Group gatherings are permitted with the machine under the lecturer or technicians supervision.
- Loose clothing or jewellery must not be worn when using the machine.
- Long hair must be neatly tied back or a well fitted cap worn.
- Follow the manual handling training guidelines when loading and unloading the curing tank.
- Always seek assistance when loading or unloading the beams to and from the tank.
- Maintain a secure hold of all moulds when loading or unloading the tank.
- Do not over load buckets with water when emptying the tank.
- Inspect the machine's electrical power cable and plug prior to use.
- Do not use the machine if electrical cable or plug is damaged in any way, report to lecturer or technician for removal from use.
- Competent person/s must carry out electrical repairs.

- Maintain good housekeeping and work area free from personal belongings at all times.
- Ensure that there are no trailing power cables along the ground when using the machine. Use the power sockets above the workbench.
- Cement beams, cubes or cylinders must not be left lying on the ground around the tank. Always store on a workbench and in from the edge.
- Wear safety gloves, glasses and protective footwear when handling wet moulds.
- Remove any clothing contaminated with wet cement immediately.
- Wash any skin contaminated with wet cement immediately.
- Loose clothing must not be worn when loading or unloading the tank.
- Long hair must be neatly tied back or a well fitted cap worn.
- Instruction must be provided for students in how to operate the machine.
- Always use the machine as per manufacturer's instructions.
- Always wash and dry your hands when curing is complete.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturers recommendations and records kept by the School
- Lecturers and Technicians to monitor compliance with control measures

Information, Instruction & Training

- Manual Handling
- PPE Training
- Chemical Handling training
- MSDS

Personal protective equipment required (last resort)

- Safety Boots
- Safety Gloves
- Safety Glasses

Initial Risk Rating (without any control measures)

Probability : **3** x Severity **3** = Risk Factor **9 High Risk**

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability : **1** x Severity **3** = Risk Factor **3 Low Risk**

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Safe Work Practice Sheet Corded and Cordless Hand Held Drills	Ref: SWPS CCS 038 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Poorly or incorrectly connected, fitted, damaged or defected electrical cables and plugs can result in electrocution-death or first, second and or third degree burns.

Slips Trips and Falls
Poor housekeeping, personal belongings or a trailing electrical cable, hand tool lying on the ground can result in slipping and tripping causing fall impact head and body injuries.

Mechanical
Entanglement of long hair or loose clothing with rotating tool or chuck head can result in minor cuts and bruises. Cuts to hands and fingers when in contact with rotating cutting tools.

Ergonomics
Operating the tool in crunched awkward positions and for extended periods of time can result in acute or chronic lower back and or upper body musculoskeletal injuries**.**

Vibration / Torque
Drilling various materials can result in vibration and cause hand and vibration injuries (white finger). Drilling various materials can result in sprains to the wrist and elbow when the drill comes to a sudden stop.

Flying Debris
Drilling various materials can generate flying debris (swarf) and result in loss of sight, drill bits can shatter when in use and fly resulting in loss of sight or minor cuts.

Noise
Drilling various materials can result in the generation of noise and cause temporary hearing discomfort**.**

Sharps
Drill bits can contain sharps and result in minor lacerations to the hands and fingers when handled.

Falling Machine
Unsecure hold of hand tool when operating it, hand tool placed on the edge of a work bench can result in a falling tool and cause lower leg and feet impact injuries.

Person Exposed to Risk

☑Students ☑ Employees ☐ Public☐ Contractors ☐ Visitors

Work Description

The hand tools are used for drillings holes or screws into or cleaning down various materials.

Controls

- Students are permitted use of the equipment, under correct instruction and the lecturer or technicians supervision.
- Where possible always use a battery operated or 110v drill. If required to use a 240v drill ensure that it is plugged in to a socket with a Residual Control Device (RCD).
- 240v power tools are not permitted to be used for external work.
- Inspect the electrical cable, plugs and drill for damage or defects prior to use.
- Do not use if cable or drill is defected or damaged in any way and remove from use for repair by a competent person or safe disposal of.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Avoid the trailing of electrical cables where possible.
- Never leave a hand tool lying on the ground, use a nearby work bench to rest it on.
- Loose clothing must not be worn when operating the machine.
- Long hair must be neatly tied back or a well fitted cap worn.
- Never touch a rotating cutting tool.
- Never assist in stopping or slowing down a rotating tool or chuck head.
- Do not use the hand tool for extended periods of time and tend to other duties for periods of rest or split the work load with another work colleague if possible.
- Maintain a firm and secure hold of the hand tool when drilling materials.
- Always place the hand tool in from the edge of a work bench when not in use.
- Wear safety glasses when drilling materials.
- Never touch swarf with bare hands.
- Wear safety hearing protection when required.
- Always use the drill as intended by the manufacturer.
- Never hold or handle a drill bit by its cutting tool head, wear gloves if required.
- Never leave a drill unattended and return to storage when no longer required.
- Always hold the tool with both hands when drilling materials.

Checks & Inspections

- Regular maintenance to be carried out according to manufacturer's recommendations and records kept by the School.
- Lecturers and technicians to monitor compliance with control measures
- Lecturers and technicians to monitor the wearing of PPE

Information, Instruction & Training

- PPE training.
- Safe use of operating the tool.

Personal protective equipment required (last resort)

- Safety Glasses
- Safety Boots

- Safety Gloves
- Hearing protection

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet	Ref: SWPS CCS 039
	Date: 24/07/2014
Workshop Floor Cleaning	Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Electricity
Contact with damaged, loose or poorly maintained electrical cables can result in electrocution-death or minor injuries, first, second and or third degree burns.

Manual Handling
Pushing and pulling hoover/buffer, cleaner, moving furniture, machinery etc. can result in acute or chronic lower back and or musculoskeletal injuries.

Chemicals
Applying cleaning chemicals and emptying machinery can result in chemical burns to the eyes, hands, face and other body parts and contamination of clothing. Damage to the lungs by acute wheezing or chronic asthma from the inhalation of fumes.

Slips Trips and Falls
Poor Housekeeping, wet floors, oil and dirt on the floors, trailing cables can cause slips trips and falls resulting in broken limbs, musculoskeletal injuries, broken fingers, cuts and bruises.

Mechanical
Contact with rotating buffer can result in entanglement of long hair, loose clothing causing asphyxiation, cuts and bruises.

Person Exposed to Risk

☑ Students ☑ Employees ☐ Public ☑ Contractors ☑ Visitors

Work Description

Class aid is required to clean the floors of the Carpentry / Joinery work shop by means of electrical hoover, buffer, Taski vacuum liquid sucker and liquid chemicals.

Controls

- Floor Cleaning must be carried out when students, contractors, visitors or other staff are not present.
- Food and drink are not permitted in the work shop/ lab at any time.
- Safety signage must be used when cleaning in progress.
- Inspect the electrical cable and plug of the cleaning equipment for damage or defects prior to use. Do not use if damaged or defected in any way and remove from use for repair or replacement.
- Class Assistant must not carry out repairs on cables, plugs or damaged cleaning equipment.
- All electrical repairs must be carried out by a competent person.
- Never transport cleaning equipment by pulling on the electrical cables.
- Chemicals must be stored (under lock and key controlled by class assistant) away in a designated area.
- Chemicals must remain in original containers with original Identification label description.
- Ensure that there is adequate ventilation prior to commencing cleaning and turn on the extract system where available.

- Liquid waste (Taski liquid vac hoover, bucket etc.) must be disposed of to external drains.
- Care must be taken when moving or lifting class furniture (seek assistance if required). Follow manual handling training at all time and seek assistance when required.
- Use a pallet truck for moving work benches or other items of furniture and repeat the process when returning to their original position.
- When cleaning machinery is in use, trailing electrical cables must be draped over shoulder of class assistance.
- Remove and replace any clothing contaminated by chemicals.
- When using a mop bucket do not over fill with water.
- When chemicals are required for cleaning ensure to apply them sparingly.
- On completion of cleaning, all cleaning machinery must be returned to storage.
- Observe where cleaning machinery cables are at all times, avoid walking over cables where possible.
- Always use cleaning equipment and chemicals as intended by their manufacturer.
- Never touch the rotating parts of cleaning machinery with any body part.
- Never wear loose clothing when operating cleaning machinery.
- Long hair must be neatly tied back or a well fitted cap worn.

Checks & Inspections

- Cables and Plugs on electrical machines must be checked before use.

Information, Instruction & Training

- Manual handling training.
- Chemical Handling training.
- PPE training.
- MSDS

Personal protective equipment required (last resort)

- Wear safety glasses, boots and gloves when cleaning in operation

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet Storage of Equipment	Ref: SWPS CCS 040 Date: 24/07/2014 Assessed by: G. Caffrey Approved by: E. Roe

Hazards

Manual Handling
Lifting, carrying, holding & pushing tripods, levelling staves, GPS, Trundle Wheels, sledge hammers & any other surveying hand held equipment can result in acute or chronic lower back & or musculoskeletal injuries.

Falling Equipment, Failed Racking
Lifting equipment to and from racking, not placed securely on the racking can result in falling equipment or materials and cause impact injuries to the head, racking is not secure resulting in head and upper torso crushing from falling equipment or racking.

Timber Splinters
Manually handling equipment with wooden handles etc. can result in puncture wounds to the hands, fingers and other body parts.

Slips Trips and Falls
Poor housekeeping, personal belongings, materials lying on the ground, wet floor of stores can cause slipping & tripping resulting in fall head & body impact injuries.

Sharps
Feet of tripod, range rod, nails, wooden stakes and other test equipment can cause puncture wounds to the feet hands and other body parts of person carrying equipment or bystanders in the path of equipment being moved.

Biological
Contact with equipment contaminated with earth & soil can result in contacting Weils disease, causing death, flu like symptoms, liver and kidney damage.

Fall from Heights
Climbing on shelving to gain access to equipment can result in a fall and head and body impact injuries.

Person Exposed to Risk

☑Students ☑ Employees ☐Public ☐Contractors ☐Visitors

Work Description

Employees are required to load and unload tripods, levelling staves, GPS, Trundle Wheels, sledge hammers & any other surveying hand held equipment from the stores.

Controls

- Students are not permitted to remove or replace equipment in the stores.
- Lecturer or technician must only carry out this task.
- Follow the manual handling training guidelines at all times.

- Never overload the body with too many pieces of equipment.
- Where required seek assistance when lifting, carrying, loading and unloading the racking.
- Heavy materials must be placed on the bottom of the racking.
- Ensure equipment is not over hanging on the edge of the racking.
- Inspect the racking from damage or defects prior to use, do not use if damage or defected in any way.
- Inspect wooden handles etc. for damage or defects prior to issuing out. Remove from the stores if damaged or defected in any way for repair or safe disposal of.
- Competent persons must carry out repairs.
- Maintain good housekeeping and work area free from personal belongings at all times.
- Maintain dry floors at all times.
- Items must not be stored on the walkway of the stores.
- Exercise caution when handling equipment with pointed ends and always observe for the presence of bystanders.
- The stores must be locked at all times when not in use. Access to the stores must be limited by issuing of key to approved users.
- Wear safety gloves when handling equipment after being used for external purposes.
- Wash hands immediately after handling equipment that was used externally.
- Climbing on the racking is strictly prohibited.

Checks & Inspections

- Lecturers and technicians to monitor compliance with control measures.

Information, Instruction & Training

- Manual handling training
- PPE Training

Personal protective equipment required (last resort)

- Safety Boots
- Safety Gloves

Initial Risk Rating (without any control measures)

Probability :	3	x	Severity	3	=	Risk Factor	9 High Risk

KEY		
PROBABILITY	**SEVERITY**	**RISK FACTOR**
Probable 3	Critical 3	1-3 Low Risk
Possible 2	Serious 2	4 Medium Risk
Unlikely 1	Minor 1	6-9 High Risk
Risk Factor = Probability x Severity		

Risk Reduction Rating (after controls introduced)

Probability :	1	x	Severity	3	=	Risk Factor	3 Low Risk

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Safe Work Practice Sheet General Health and Welfare Provisions	Ref: SWPS 015 Date: 2/02/2011 Assessed by: P. Killeen Approved by: E. Roe

The workplace regulations (general application) regulations 2007 S.I. No. 299 in particular regulation 18 and 19 gives specific standards to be maintained in the place of work.

These regulations refer to adequate facilities for "taking meals / consumption of food" "cleanliness," also that rest areas are "large enough". These facilities must be kept in a state that is free from accumulations of any dirt, dust etc..

Regulation 18 states:

(*f) "the taking of meals by employees is prohibited at any location in the place of work where there is likely to be a risk to safety, health or welfare."*

The Laboratories would not be deemed suitable as a place for taking meals (which includes beverages) for a number of reasons including the space limitations, the location of items stored at height, the lack of hygiene facilities and the fact that it is deemed a work area for a member of staff.

Regulation 19 states:

An employer shall ensure that—
"(a) where, because of—
(i) the type of activity carried out, or
(ii) the presence of more than a certain number of employees, and
(iii) the safety, health and welfare of employees so requires,
employees are provided with an easily accessible rest room or appropriate rest area,"

providing relaxation during breaks,
(b) rest rooms are large enough and equipped with tables with easily cleaned surfaces and seats with backs, adequate for the number of employees,

The Laboratories would not meet the criteria set out in section 19 above, because of the work activity carried out (where there is a presence of dirt and dust) and (it is deemed a work area) and (Insufficient space). Therefore under both sections of the Safety, Health and Welfare at Work (general application) regulations 2007 DkIT would be breaching the requirements.

Washing, food preparation and eating areas are made available at various locations:
The Well, The Coffee Dock, The Main Canteen, The Staff Room.

Information, Instruction

To meet the requirements of Health and Safety Legislation and to ensure that good hygiene practices are employed at all times, it is prohibited to consume or bring into laboratories or workshops any drinks or beverages.

Signed: _____

Head of School of Engineering

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EMERGENCY RESPONSE	Ref: SWPS 016 Date: 26/01/2011 Assessed by: P. Killeen Approved by: E. Roe

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Emergency protocol for everyday working environment.

Emergency Contacts

- Dial 9 for an outside line, then 999 or 112 and you will be connected directly to the emergency services.
- Be prepared to give the following information:
- Information on the condition of the victim, if there is a casualty.
- Details of any hazards, i.e. fire/chemical/gas/structural collapse etc.
- Exact location of the accident (room number and building).
- Call the Estates Office (2671/2670) and give the above details.
- If deemed necessary, contact the Nurse (2777) and trained Department first aiders.
- Call Reception (500), ask them to alert the caretaker on duty and give them the above details.
- Report to the Head of Department, Head of School, and your Supervisor (where relevant).
- As soon as practically possible, report the accident on an accident/incident report form and submit to the Head of Department/ Head of School of Engineering

- Emergency contact numbers are strategically located throughout the School of Engineering

Fire Fighting Equipment

The majority of fire-fighting equipment points are located in workshops, laboratories and on each floor in the School of Engineering building. There are a number of trained fire wardens in the School. Fire warden courses are run on a regular basis and are available through the
Estates Office. The School abides by the Institute Policy and Procedures on fire safety.

Information, Instruction & Training

All training in First Aid, Emergency Response, and Fire Safety/Wardens is available through consultation with your Head of Dept and HR Office. The School abides by the Institute Policy on first aid safety.

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EMERGENCY CONTACT NUMBERS	Ref: SWPS 017
	Date: 26/01/2011
	Assessed by: P. Killeen Approved by: Eugene Roe

Person Exposed to Risk

✓ Students ✓ Employees ☐ Public ☐ Contractors ☐ Visitors

Work Description

Important contact details which are available throughout all Departments in case of emergency

General

- Ambulance/Fire Brigade: 112 or 999
- Health Centre/Campus Nurse: 2777
- Doctor: Dr. Shane Gleeson: 2702/ 042 9320038
- Hospital: Louth Hospital: (042) 933 4701

A List of First Aiders is prominently displayed in all workshops and Lab Locations

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Appendix IV

Accident / Incident, Near Miss and Dangerous Occurrence Reporting Procedures

ACCIDENT, INCIDENT, NEAR MISS AND DANGEROUS OCCURRENCE REPORTING PROCEDURES

Dundalk Institute of Technology is committed to reducing accidents and ill-health to staff and students of the Institute. Procedures are in place in the Institute to ensure that all Accidents, Near Misses and Dangerous Occurrences are recorded. These procedures not only ensure compliance with the law, but are also used as a basis for analysing trends throughout the Institute, in an effort to reduce accidents and ill-health to staff and students. All reports are reviewed at each meeting of the Institute Safety Monitoring Committee.

The purpose of an investigation is to establish all the facts relating to the incident, to draw conclusions from the facts and to make recommendations to prevent reoccurrence. Each incident will be looked at from the point of view of place, plant, procedures and people, to see where the safety system has failed and to tighten controls. It is important to note the definitions of all incidents (Accidents, Near Misses & Dangerous Occurrences) in order to take the correct action.

DEFINITIONS

An **Accident** is defined as an unplanned event resulting in personal injury or property damage. This could include, but is not limited to:

- Sprain
- Laceration
- Broken bone
- Concussion
- Unconsciousness
- Ill-health
- Sickness due to exposure to a dangerous substance, fumes or gases, fire or explosion
- Sickness due to a chemical spill or environmental pollution
- Damage to building
- Damage to property

A **Near Miss** is defined as an incident in which there was no injury or property damage but where the potential for serious consequences existed.

A **Dangerous Occurrence** is one of a number of specific, reportable adverse events, which are defined within the Twelfth Schedule of the General Application Regulations 2007. Dangerous Occurrences are reportable to the Health & Safety Authority (HSA) using Form lR3 or via the HSA online notification process. Any Dangerous Occurrences which are notifiable to the HSA will be forwarded by the Health & Safety Co-ordinator.
These are incidents with a high potential to cause death or serious injury, but which happen relatively infrequently. Dangerous occurrences usually include incidents involving:

- Lifting equipment
- Pressure systems
- Overhead electric lines
- Electrical incidents causing explosion or fire
- Explosions, biological agents
- Radiation generators and radiography
- Breathing apparatus
- Diving operations
- Collapse of scaffolding
- Train collisions
- Wells
- Pipelines or pipeline works

All Accidents are 'Incidents'. However, the definition of an Incident is wider in that it includes Dangerous Occurrences and Near Misses.

REPORTING PROCEDURES

All incidents must be reported immediately using the DkIT relevant incident report forms. These are located in the Parent Safety Statement and also on the DkIT website at https://www.dkit.ie/safety/incidents-accidents-reporting-procedures. All sections of the form must be completed with as much accurate information as possible.

The immediate supervisor must investigate the cause of the incident, and complete the Institute Accident/Incident Report Form or Near Miss Form. A copy of this form must then be made available to the Head of Department/School/Function for review and final sign off. Copies of the completed form should be forwarded to the Health & Safety Co-ordinator, Secretary/Financial Controller and the Estate's Office. Copies of these forms are contained within this document.

Accidents involving visitors and contractors must be investigated by the staff member to whom the injury was reported, in conjunction with the staff member they are visiting or working with.

Accidents, which involve serious or fatal injuries to an employee, student or any third party must be notified to the Health and Safety Co-ordinator and the HSA without delay.

Any accidents at work that involve an employee being unable to carry out his/her duties for three or more consecutive days, or that involve a third party being injured and requiring treatment from a medical practitioner, are reportable to the HSA and must be notified using Form lR1 or via the HSA online process, as soon as practicable. Dangerous Occurrences are reportable to the HSA using Form lR3 or via the HSA online notification process. Any incidents, which are notifiable to the HSA, will be forwarded to the HSA by the Health & Safety Co-ordinator.

Internal Reporting Procedure

It is the responsibility of each Head of Department/School/Function to ensure that the appropriate investigation procedures take place in the event of an Accident, Near Miss or Dangerous occurrence arising in their area. Heads of Department/School/Function must also ensure that the appropriate forms are completed and forwarded to **each** of the relevant parties (i.e. Estates Office, Secretary/Financial Controller, Health & Safety Co-ordinator).

It is the responsibility of the Health & Safety Co-ordinator to ensure that all reported incidents are tabled and discussed at each ISMC meeting.

External Reporting Procedure

Arising from the internal reporting procedure, any incidents, which are notifiable to the HSA, will be forwarded to that body by the Health & Safety Co-ordinator.

ACCIDENT / INCIDENT REPORT FORM

Note:
This form should be completed whenever an accident or incident occurs which results in injury or damage to personnel or property.
If personnel or property WERE NOT injured or damaged during the Accident/ Incident, do not use this form. Use the NEAR MISS REPORT FORM.

Accident / Incident Report Form			
i	**Name of person involved in Accident/Incident:**		
ii	**Address:**		
	Phone:		
iii	**Who was involved in the Accident/Incident:** ☐ **Student** ☐ **Employee** ☐ **Public** ☐ **Contractor** ☐**Visitor**		
iv	**Occupation:**		
v	**If an employee of the Institute please state Department:**		
vi	**If no, please elaborate:**		
vii	**Particulars of Accident/Incident & circumstances under which the Accident/Incident occurred:** *Use additional pages and/or photos if necessary.*		
viii	**Place:**		
ix	**Time:**	**Date:**	
x	**Witness Phone No & Address:**		
	Witness Phone No & Address:		
xi	**When and to whom was the Accident/Incident initially reported?**		

xii **Details of injury/damage:**

Indicate type of injury (put an 'x' in one box only)

☐ Bruising, contusion	☐ Suffocation, asphyxiation
☐ Concussion	☐ Gassing
☐ Internal injuries	☐ Drowning
☐ Open wound	☐ Poisoning
☐ Abrasion, graze	☐ Infection
☐ Amputation	☐ Burns, scalds and frostbite
☐ Open fracture (i.e. bone exposed)	☐ Effects of radiation
☐ Closed fracture	☐ Electrical injury
☐ Dislocation	☐ Property damage, Specify_____
☐ Sprain, torn ligaments	☐ Other, Specify_____

xiii **Indicate part of body most seriously injured (put an 'x' in one box only):**

☐ Head, except eyes	☐ Fingers, one or more
☐ Eyes	☐ Hip joint, thigh, knee cap
☐ Neck	☐ Knee joint, lower leg, ankle
☐ Back, spine	☐ Foot
☐ Chest	☐ Toes, one or more
☐ Abdomen	☐ Extensive parts of the body
☐ Shoulder, upper arm, elbow	☐ Multiple injuries
☐ Lower arm, wrist, hand	☐ Other, Specify_____

xiv **Consequences of the Accident/Incident:**

Fatal ☐
Non Fatal ☐

Date of resumption of work if back

Year	Month	Day
____	_____	___

Anticipated absence if not back

4-7 days	☐
8-14 days	☐
More than 14 days	☐

xv **Treatment:**

xvi **Doctor's report and recommendation:**

xvii **Steps taken to prevent reoccurrence of this type of Accident/Incident:**

Signature of person completing report:	**Date:**
Print Name & Job Title:	
Signature of Head of Department/School/Function:	**Date:**
Print name:	

(Copies of the completed Institute Accident Report are to be sent <u>separately</u> to the Institute Health & Safety Co-ordinator, the Secretary/Financial Controller and the Estates Office)

NEAR MISS REPORT FORM

Note:
This form should be completed whenever a Near Miss occurs - that is an incident WITHOUT injury to person or damage to property.
If personnel or property were injured or damaged during the incident, do no use this form. Use the 'ACCIDENT / INCIDENT REPORT FORM'.

NEAR MISS REPORT FORM			
i	**Date of Near Miss:**	**Time of Near Miss:**	
ii	**Location of Near Miss:**		
iii	**Who was involved in the Near Miss:** ☐ **Student** ☐ **Employee** ☐ **Public** ☐ **Contractor** ☐**Visitors**		
iv	**Name of person(s) involved in Near Miss:**		
v	**Name, Address & Contact details of any witnesses to Near Miss:**		
vi	**Description of Near Miss:**		
vii	**Steps taken to prevent a reoccurrence of this type of Near Miss incident:**		
	Signature of person completing report:		**Date:**
	Print Name & Job Title:		
	Signature of Head of Department/School/Function:		**Date:**
	Print name:		

(Copies of the completed Near Miss Report Form are to be sent to the Health & Safety Co-ordinator, the Secretary/Financial Controller and the Estates Office)

First Aid and Emergency Contacts

	Location	
Jim Connolly	Mechanical Engineering Workshop	Ext 2966
Phil Dillon	Engineering Administration	Ext 2754
Simon O' Neill	Plumbing Workshop	Ext. 2847
Larry Quigley	Plumbing Workshop	Ext. 2594
Nick O'Rourke	Plumbing Workshop	Ext. 2593
Alan Gorham	Plumbing Workshop	042 9396510

- Ambulance/Fire Brigade: 112 or 999
- Health Centre/Campus Nurse: 2777
- Doctor: Dr. Shane Gleeson: 2702/ 042 9320038
- Hospital: Louth Hospital: (042) 933 4701

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