

Departmental Safety Inspections

In order to ensure that safety standards are met, all areas of the Department are inspected at least annually. Safety Inspections are carried out by members of the Departmental Safety Committee in teams of three. There are two types of Safety Inspections, which are detailed below.

1. Annual Inspections

Location

In Annual Inspections, all areas of the Department are considered, without exception. These include laboratories, of course, but also, offices, teaching rooms, common areas, etc...

Dates and Time

Annual Inspections take place in the first part of the calendar year (Late January to late June) and, specifically, are carried out weekly on Wednesday afternoons from 14:00.

Notice

Users are sent the schedule of inspections in advance, in order to allow them to tidy up their work areas, where needed.

Reports

Inspection reports are written free-form. Observations are listed, non conformities are pointed out and recommendations are given where deemed appropriate.

Inspection reports are sent out weekly, on the Monday of the week following the inspection. These are also posted on the Departmental Safety Drive in the folder **zz-Safety Inspection Reports** and made available to all members of the Chemical Engineering Department.

Follow-Up

Users will be given 2 weeks to address non-conformities pointed out in the inspection reports, after which the areas will be reinspected by the Departmental Safety Team.

Failure to rectify any faults by the deadline can result in the area being closed until the actions have been completed.

2. Spot Inspections or Spot Checks

Location

In Spot Inspections, only laboratories are usually considered. However, any area causing concern may be inspected.

Dates and Time

Spot Inspections are carried out weekly throughout the year.

Notice

No notice is given for Spot Inspections. These are designed to ensure that laboratories continually meet departmental Safety standards.

Reports

Spot Inspection Reports follow a pre-set checklist covering the main aspects of good laboratory practice. Further details are available below.

Laboratories receive a mark for each safety aspect in the checklist, where applicable. This then totals up to a final score. Spot Inspection scores above 70% are generally expected.

Inspection reports are sent out weekly, on the Monday of the week following the inspection. These are also posted on the Departmental Safety Drive in the folder **zz-Safety Inspection Reports** and made available to all members of the Chemical Engineering Department.

Follow-Up

Users will be given 2 weeks to address non-conformities pointed out in the inspection reports, after which laboratories will be reinspected by the Departmental Safety Team.

Failure to rectify any faults by the deadline can result in the area being closed until the actions have been completed.

3. Spot Inspection Checklist: Details

On the next page is displayed a blank Spot Inspection Report.

During the inspection, each item on the checklist is considered by the inspection team.

If an item is irrelevant to the laboratory inspected, it is ignored and the score is left blank.

All items relevant to the laboratory are allocated a mark between 0 and 4, based on how well the associated requirements have been implemented.

The Spot Inspection Checklist attempts to cover the main categories of safety, but cannot claim to encompass all practices.

Consequently, the Spot Inspection checklist includes Penalty Points ranging from -4 to -16 for any non-conformities which are not covered by the checklist. These penalty points are used for grossly bad practice which may lead to unsafe situations.

All marks are justified with comments and recommendations are made for improvements, where relevant.

All scores for items relevant to the laboratory considered total up to a final Spot Inspection score.

On the following pages, specific guidance is provided for each item on the Spot Inspection Checklist.

Blank Spot Inspection Report

Laboratory:

Inspection Date:

Supervisor:

Re-Inspection Date:

Inspection Team:

	Score	Comments
Signage and Warning Notices		
Overnight running notices are used correctly		
Appropriate hazard and warning notices in place		
Electrical Equipment and Testing		
Electrical testing carried out within the last year		
Cables and plugs in good condition and adequate		
Distribution boards off the floor and used properly		
Waste		
Hydrocarbon and chlorinated waste separated		
Sharps stored in correct sharps bin, no overfilling		
Only Biowaste in orange or yellow clinical bags		
Biological semi-sharps are disposed of in Biobins		
Grey box for clean glass reagent bottles, no tops		
Red bin used for clean broken glass only		
No glass or chemicals in domestic bins		
All waste labelled appropriately		
Storage		
Flammable materials kept to a minimum		
Liquids stored in drip trays		
Chemicals not in use stored correctly		
All bottles, samples, etc labelled appropriately		
Tools stored properly		
Refrigerator used is suitable for chemicals		
Appropriate hazard labels on chemical stores		
Housekeeping, Good Practice		
Floors, gangways and exits clear and clean		
Workbenches free from clutter		
No items overhanging benches or shelves		
Personal Protective Equipment available and in use		
Gas cylinders secured correctly		
Gas cylinders have correct regulators and gauges		
Fume cupboards tidy, clean, air flow unobstructed		
Equipment kept clean and uncluttered		
All equipment suitably guarded		
Door vision panel is kept unobstructed		
All Precautions, PPE, Signage, Relevant Authorisations for Specific Hazards are in Place		
Lasers		
Ionising Radiation		
Liquid Nitrogen		
Hydrogen Cylinders		
Penalty Points		
For non-conformities not listed above		
PERCENT MARK:		
General Comments		

Item	Spot Inspection Checklist: Specific Guidance
Signage and Warning Notices	
Overnight running notices are used correctly	Overnight notices should only be displayed when an overnight experiment is running. Specific dates should be indicated. Emergency actions should be clear and emergency stops should be indicated with labels.
Appropriate hazard and warning notices in place	These include hazard stickers (flammable, toxic, laser, ...) as well as hot surfaces, cold, risk of tangling, entrapment, refrigerator for chemicals only, etc...
Electrical Equipment and Testing	
Electrical testing carried out within the last year	<p>All appliances should carry an electrical testing sticker on the body, the plug or the power cable. This sticker is green or white and the next required testing date should be indicated. This date should fall within the next 12 months.</p> <p>Electrical testing is organised in bulk in March of every year. Outside this time, any new electrical equipment should be tested by the departmental Electronics services in 1M11 before it is used.</p>
Cables and plugs in good condition and adequate	All cables and plugs for electrical equipment should be kept in good condition and replaced when there are signs of wear or damage. Only UK plugs should be used - no foreign plugs or adapters are allowed. Plugs should be re-wired by Electronics Services in ACEX 1M11 or at least checked and tested by them.
Distribution boards off the floor and used properly	4-way cube distribution boards are NOT allowed. Distribution boards should be secured off the floor to prevent any electrical hazards in case of flooding. Distribution boards should never be connected together (daisy-chained), they should all be pugged into their own mains socket.
Waste	
Hydrocarbon and chlorinated waste separated	Self-explanatory
Sharps stored in correct sharps bin, no overfilling	The level of sharps for disposal should remain below the line indicated on the sharps bin label. Overfilling a sharps bin could cause it to break and release sharps, which would be very unsafe for the waste contractors.
Only Biowaste in orange or yellow clinical bags	Biological waste should be disposed of mainly in orange clinical waste bags carrying a biological hazard symbol. Yellow clinical waste bags should only be used in few special cases. Yellow and orange clinical waste bags (which carry a biological hazard symbol) should not be used for chemically contaminated or non-hazardous waste. Hazardous Material bags and black bin bags should be used respectively.

Item	Spot Inspection Checklist: Specific Guidance
Biological semi-sharps are disposed of in Biobins	These include stripettes, disposable pipettes, pipette tips, anything which can perforate a bag. It is now a College requirement that these items be disposed of in Biobins, in order to avoid perforated waste bag incidents.
Grey box for clean glass reagent bottles, no tops	This is specified on the label. Solvents should have been evaporated or bottles cleaned with soap and water. No plastic bottles should be placed in the grey box. If this is not respected, the cleaners will not empty the grey boxes.
Red bin used for clean broken glass only	This is specified on the label. No other material such as tissues, plastic, ... should be placed in the red bin. Glass should be broken, not bottles or glassware should be placed in this bin. If this is not implemented, the cleaners will not empty the red bin.
No glass or chemicals in domestic bins	Self-explanatory
All waste labelled appropriately	All waste containers should carry a label specifying the nature of the waste.
Storage	
Flammable materials kept to a minimum	These include chemicals, gases, but also paper, cardboard boxes, polystyrene boxes, ... The volume of flammable liquids stored in a lab, including waste, should be below 50L.
Liquids stored in drip trays	Bottles and drums should always have a drip tray to mitigate leaks.
Chemicals not in use stored correctly	Flammables, acids, bases and oxidisers should be separated - this means stored in separate chemical cabinets.
All bottles, samples, etc labelled appropriately	Labels should carry at least the following information: Contents, full name, date
Tools stored properly	Tools should not be strewn around on worktops or on the floor
Refrigerator used is suitable for chemicals	For the storage of flammables, the refrigerator used should be spark-proof.
Appropriate hazard labels on chemical stores	Flammable, Corrosive, Toxic, ... stickers should be displayed where appropriate.
Housekeeping, Good Practice	
Floors, gangways and exits clear and clean	Floors should be clean and dry to prevent slips and falls. No objects should be obstruct gangways and exits as these could cause trips and falls.
Workbenches free from clutter	Workbenches should be tidy and reasonably organised. Unneeded items should be put away after use.
No items overhanging benches or shelves	As these could tilt and fall on people ...

Item	Spot Inspection Checklist: Specific Guidance
Personal Protective Equipment available and in use	Labcoats and safety specs are compulsory in laboratories. Spares should also be available for visitors, either from dispensers/coat hooks or stored in a box, cupboard, ...
Gas cylinders secured correctly	Each cylinder should have its own clamp and strap. The clamp should be tight enough and secured to a sturdy and large enough rack. The strap should be properly tightened to avoid any cylinder movement.
Gas cylinders have correct regulators and gauges	Regulators should be used for the gases they have been specified for and within the pressures specified on their gauges.
Fume cupboards tidy, clean, air flow unobstructed	All the guidance for this is available in the Fume Cupboard Poster available on the departmental Safety Handbook page.
Equipment kept clean and uncluttered	Self-explanatory
All equipment suitably guarded	All equipment presenting a risk of burning, cutting, entrapment, entanglement, etc ... should be suitably guarded and guards used correctly. Built in guards should not be removed.
Door vision panel is kept unobstructed	All laboratory door vision panels should be unobstructed and allow view inside, except in the case of laser laboratories.
All Precautions, PPE, Signage, Relevant Authorisations for Specific Hazards are in Place	
Lasers	Warning sign on the door, shielding where relevant, interlock where relevant, registered with Departmental Laser Safety Officer.
Ionising Radiation	Warning sign on the door, shielding where relevant, interlock where relevant, RPS appointed, Code of Practice in place and available, registered with Departmental Safety Officer and Safety Department
Liquid Nitrogen	Dewar in good condition, Good Ventilation, Oxygen monitor where relevant
Hydrogen Cylinders	Authorisation from the Safety Team obtained and emergency shutoff valve installed
Penalty Points	
For non-conformities not listed above	
PERCENT MARK:	
General Comments	