

Standard Operating Procedure

SOP062

Title: INTRODUCTION OF NEW LABORATORY EQUIPMENT INTO CBE CONTAINMENT LEVEL 2 LABORATORIES

Location: CBE Laboratories

1. PURPOSE

The intent of this SOP is to describe the process for introducing new equipment into CBE Containment Level 2 laboratories. This could be a new piece of equipment which is purchased, hired or loaned and is either on a permanent or temporary basis (e.g. demonstration equipment). These procedures aid compliance to the Provision and Use of Work Equipment Regulations (PUWER) 1998.

2. SCOPE

This SOP applies to CBE personnel intending to procure and install new (permanent or temporary) equipment, or relocate existing equipment, within CBE laboratories.

3. RESPONSIBILITIES

CBE Laboratory Users intending to introduce new equipment must:

- 3.1. Ensure that the appropriate risk assessments are carried out, recorded and approved and that appropriate control measures are in place BEFORE commencing any work activity with the new equipment.
- 3.2. Ensure that an SOP is created, registered with the Document Controller and submitted for approval as appropriate
- 3.3. Ensure that they have read and understood all risk assessments and SOPs relevant to their work activity with the equipment BEFORE they start work and maintain a record of this in their training file.
- 3.4. Ensure all training for the equipment has been completed and recorded in training files.
- 3.5. Ensure all maintenance procedures are completed following manufacturers guidelines.

CBE Academic Supervisors must:

- 3.6. Ensure they liaise with Laboratory Manager/ Safety Officer/Operations Manager in advance of new equipment arriving to request permission for space for the new equipment and enquire if the required utilities are available. If required utilities (power, water, gases) are not available this is the responsibility of the supervisor to project manage in association with the relevant people.
- 3.7. Ensure they have reviewed and signed appropriate risk assessments for equipment.
- 3.8. Ensure all documentation is in place for the use of the equipment including any hire agreements, SOPs and maintenance or service agreements.

Version 002

Effective Date: 1st October 2020

Review 1st October 2022

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- 3.9 Ensure persons under their supervision have adequate training in the use of the Equipment and provide appropriate supervision.
- 3.11 Ensures new equipment is PAT tested, placed on the Asset Register and insured.

Laboratory Manager (LM)

- 3.12 Establishes an associated equipment file
- 3.13 Ensures that the new SOP's associated with the equipment are available
- 3.14 Ensures that appropriate training is supplied and documented to authorised users
- 3.15 Delegates responsibility for maintaining the equipment
- 3.16 Ensures regular audits are conducted to ensure compliance to health and safety procedures.
- 3.17 Ensures the equipment is PAT tested

4. EQUIPMENT AND MATERIALS

None

5. PROCEDURE

STEP 1: Order and Purchase of Laboratory Equipment

- 1.1. BEFORE ordering new equipment, verify with the DSO/LM that the intended supplier of the equipment is appropriate, as below:
 - The supplier should confirm that the equipment is CE marked and provide a Declaration of Conformity (DoC) (or Declaration of Inco-operation for partially complete equipment). This information can be sourced by reference to the approved suppliers list through desk-based website searches or directly from the supplier.
 - If the appropriate information is not available (e.g. common for small, newly established companies) an alternative supplier should be sought. If an alternative supplier cannot be

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identified the purchaser/requester should seek advice from the DSO **BEFORE** the equipment is ordered.

- Ensure the equipment is suitable for intended use and is provided with safety measures such as preventative devices and controls.
- 1.2. Verify with DSO/LM that there is adequate available space within the CBE laboratories to locate and site the equipment and any associated accessories, fixtures or fittings.
 - 1.3. Verify with the DSO/LM that the appropriate laboratory utilities/building services are or can be made available e.g. gas supplies, electric power, cooling water, de-ionised water etc.
 - 1.4. If the equipment is for temporary installation also complete the 'Receipt and Removal of Demonstration, Trial or Temporary Equipment' Form (QS-Form-004) available on the CBE LEARN page and submit to LM.
 - 1.5. If existing equipment is to be re-located between laboratories within the CBE Containment Level 2 facility, complete a change note form (QS-Form-001) and submit to Quality Manager.

STEP 2: Pre-Installation tests and marking of New Equipment

- 2.1 On arrival, deliver the equipment to electrical services for PAT testing OR otherwise arrange for testing in-situ in the CBE Laboratories before it is used.. This must be arranged by the individual user through respective departments (Wolfson School/Chemical Engineering) & be performed by a qualified PAT tester.
- 2.2 If required, arrange Asset Registration of the equipment¹. Attach labels to the registered item and place on the Asset registration database. Even if the equipment is 'temporary' it requires to be placed on the asset register for insurance purposes.
- 2.3 Consider if the equipment needs to be listed on other registers (e.g. LOLER, LEV).

STEP 3: Installation of New (or Temporary) Equipment

- 3.1 Consider the physical hazards e.g. mechanical, electrical hazards, hot/cold surfaces, lighting, working at height etc associated with the installation and use of new equipment, utilities or infrastructure etc. **Complete a physical/process Risk Assessment** and submit to **shared.ws.safety@lboro.ac.uk**

¹ Equipment must have an asset registration if:

- 1) it is valued at £1000 or more
- 2) it is valued at under £1000 but is a theft risk
- 3) it is to be placed on special registers e.g. pressure vessels, step ladders etc

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Note: Any Hazards identified must be either eliminated where possible or controlled by *hardware measures* (guards, protective devices, emergency stops or PPE) or *software measures* such as following safe systems of work and ensuring adequate training.

- 3.2 Consult the LM to identify an appropriate site to locate the equipment. Assess the impact of component (equipment, accessories etc) and activity dimensions (that define user space) on the performance of primary and secondary containment measures. Consult with others who may be impacted.
- 3.3 Consider the impact on the immediate environment, including worker ergonomics, comfort factors (working temperature/humidity), 'free air' space² and general user friendliness of the environment.
- 3.4 Ensure that the siting and operation of the Equipment does not interfere with air currents within the laboratory, i.e. sufficient to disrupt safety cabinet operator and sample protection.
- 3.5 Ensure that the siting and operation of the Equipment does not interfere with laboratory access, emergency exits or obstruct viewing panels.
- 3.6 Ensure that there is sufficient space between work surfaces and the equipment according to manufacturer's recommendations and British Standards
- 3.7 Ensure that the equipment and work space is accessible for cleaning and maintenance
- 3.8 Consider any waste products and how it will be disposed of safely.
- 3.9 Ensure the **stability** of the equipment and if there is a need for it to be bolted down.
- 3.10 Establish if there are any health risk associated with the equipment. (e.g. fumes, noise pollution hand/arm vibration).
- 3.11 Ensure equipment has adequate **markings** for reasons of health and safety (e.g. hazard warning symbols). The markings need to be clear and unmistakable.
- 3.12 Equipment must have clear **warnings** for reasons of health and safety (e.g. 'safety glasses must be worn'). They need to be easily understood and unambiguous.
- 3.13 With the agreement of the LM and/or DSO locate the equipment. Attach a 'Do not use' sticker pending completion of Step 4.
- 3.14 Implement any identified design and/or control measures BEFORE commencing any work activity with the equipment (i.e. according to the outcome of Steps 3.1 to 3.7).

NOTE: CE marking does **not** guarantee safety, so assessments of suitability and risk are required.

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STEP 4: Commissioning and Use of the Equipment

- 4.1 Create a new SOP for the new equipment or review and update the existing SOP if the equipment is a replacement item. Register the new or revised SOP with the 'Document Controller'.
- 4.2 If the equipment is not associated with any identified physical hazards and if adequate control measures are in place, including any required training, the equipment can be made available for use provided that Step 4.1 has been completed and that the SOP is submitted and approved within 2 weeks of the first use of the equipment.
- 4.3 If the equipment has been identified as likely to expose CBE personnel to physical hazards (identified in Step 3.1), Step 4.4 must be completed before any work activity involving the equipment can commence.
- 4.4 Complete the implementation of all actions identified in the process risk assessment and submit SOP for approval.
- 4.5 Once the risk assessment and the SOP have been approved, the equipment can be made available for use. Remove the 'Do not Use' sticker from the equipment.
- 4.6 Ensure the equipment is used in accordance to the manufacturer's guidelines.
- 4.7 Ensure all workers who will use the equipment have received sufficient training to use the equipment and it has been recorded in their training files. Training can take on many forms and be sure to consider refresher training when required. Competency should be demonstrated and never assumed. A list of authorized users for the equipment should be displayed near the equipment. Consider the people who will be using the equipment especially the young and inexperienced and those whose first language may not be English. Ensure adequate provision has been made for this in the training process.

Step 5: Use, maintenance and inspection of Equipment

- 5.1 Ensure you have considered the most appropriate Personal Protective Equipment for use with the equipment and have delivered training on how to use it correctly. Ensure it is clean and in good condition, replace if required.
- 5.2 Implement a pre-use checklist for hazardous equipment to assess day to day wear and tear which could compromise safety.
- 5.3 Implement a maintenance schedule for the equipment taking into account manufacturers recommendations. Ensure maintenance procedures are completed by competent individuals and complete maintenance records.

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- 5.3 Ensure any adaptation to the equipment is appropriately assessed.
- 5.4 Implement an inspection audit for the equipment to ensure safety related issues have been addressed and procedures followed.

NOTE: If purchasing *second hand equipment* follow the same steps as above but ensure it is inspected before purchase and adequate documentation provided.

6. Hire/Loan of equipment (internal)

- 6.1 When hiring or loaning equipment it is important that the equipment has been checked and inspected, training is provided, and an agreement is made with regards responsibility for the maintenance.
- 6.2 Complete form QS-Form-0023 *CBE 'Hire/Loan of Equipment Form'* if you wish to hire in/or hire out equipment. This form needs signing by both parties and a copy kept by both. Please also provide a copy to the laboratory Manager.
- 6.3 When the equipment is returned following the loan please inspect the equipment carefully before completing the relevant section on the form.

NOTE: Hiring or loaning of University owned equipment should be done between **internal** Loughborough Departments only).

7. In-House constructed equipment

In a University environment it is inevitable that there will be specialist research equipment/rigs that will be designed and constructed 'in-house' for use 'in-house'. However, these are still in the scope of PUWER and therefore must conform to the necessary regulations. The University must be able to demonstrate that equipment, machinery, rigs or apparatus constructed, assembled or modified by the University is safe. Equipment should be designed and constructed in accordance with relevant legislation and comply to Essential Health and Safety Requirements and the requirements of the Supply of Machinery (Safety) Regulations 2008.

All in-house constructed equipment should undergo a Risk Assessment, have a technical file, instructions for use, training programme and maintenance and inspection schedules.

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8. Disposal of Equipment

- 8.1 When you wish to dispose of work equipment no longer required the following aspects need to be considered:
- Decontamination (refer to Biological and Chemical Safety Policy)
 - Prevention of unauthorized re-use
 - Removal of labels
 - WEEE Regulations (refer to Sustainability Section of Facilities Management page)
 - Re-use
 - Recycling
 - Refrigerators/gases
 - Radioactive sources
 - Removal of Records
- 8.2 When considering disposal you are encouraged to adopt the waste management hierarchy of Prevention, Re-use, Recycling and Recovery to reduce waste and landfill.
- 8.3 Please complete QS-FORM-009 '*Decontamination of Equipment Certificate*' before disposing of any equipment following decontamination procedures.

9. DOCUMENTATION

The following records are outputs of this SOP:

- Safety Documentation Risk Assessment Form
- Receipt and removal of Demonstration, Trial or Temporary Equipment Form (QS-Form-004).
- Change Note Form (QS-Form-001).
- CBE Hire/Loan of equipment form (*QS-FORM-0023*)
- Decontamination of Equipment Certificate (*QS-FORM-009*)
- Maintenance and Inspection Records Form (*QS-FORM-0024*)

These records shall be filed on the CBE website that allows easy access and retrieval and for future review.

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SOP Version History

Version Reviewed	Date Revised/ Reviewed	Revision Summary	New Version Number
1.0	20.03.12	Procedure described supersedes the instruction in version 1 of SOP048 which was removed in subsequent versions of SOP048.	N/A
1.0	27.09.2019 by C.Kavanagh	Major Revision of SOP to include PUWER requirements and clear procedures for bringing in new equipment.	2.0

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