

# Pressure Systems

## 1. PURPOSE

- 1.1 The purpose of this procedure is to outline the process to ensure pressure equipment is installed, maintained and used safely.

## 2. SCOPE

- 2.1 This procedure applies to all Faculties and Departments in which there are systems or equipment which contain a liquid or gas under pressure.

## 3. DEFINITIONS

<b>Pressure Vessel</b>	A pressure vessel is generally taken to mean a closed vessel which operates at a pressure greater than atmospheric pressure. This includes steam boilers, steam receivers and air receivers.
<b>Pressure System</b>	<p>A system comprising one or more pressure vessel of rigid construction, any associated pipe work and protective devices.</p> <p>The pipe work with its protective devices to which a transportable gas container is, or is intended to be, connected; or</p> <p>A pipe line and its protective devices</p> <p>Examples of pressure systems and vessels are:</p> <ul style="list-style-type: none"> <li>• Boilers and steam heating systems</li> <li>• Pressurised process plant and piping</li> <li>• Compressed air systems (fixed and portable);</li> <li>• Pressure cookers, autoclaves and retorts</li> <li>• Heat exchangers and refrigeration plant</li> <li>• Valves, steam traps and filters;</li> </ul> <p>Pipe work and hoses; pressure gauges and level indicators.</p>

## 4. RESPONSIBILITIES

### Vice-Chancellor

- 4.1 On behalf of the Council the Vice-Chancellor has executive responsibility to ensure, that the requirements of the health and safety legislation and the University health and safety policy are complied with. The Vice-Chancellor will ensure that responsibility for health and safety is properly assigned and accepted at all levels within the University.

### Deans, Directors, Heads of Schools and Departments and Research Institute Directors, Managers

- 4.2 Deans, Directors, Heads of Schools and Departments and Research Institute Directors, Managers are responsible for ensuring the safe installation, use and maintenance of pressure systems.

## 5. PROCEDURE

### Pressure System Register

- 5.1 Physical Resources must be informed of the presence of a pressure system to enable them to maintain an up to date register of all pressure systems. Dependent on the category, as outlined above, they may act as (or appoint) a competent person to advise on the scope of the written scheme, draw up or certify schemes of examination and carry out examinations under the scheme.

### Provision of Safe Equipment

- 5.2 When installing new equipment, ensure that it is suitable for its intended purpose and that it is installed correctly.
- 5.3 The pressure system should be designed and manufactured from suitable materials making sure the vessel, pipes and valves have been made of suitable materials for the liquids or gases they will contain.

### Protective Devices

- 5.4 Fit suitable protective devices and ensure they function properly
- Suitable protective devices must be fitted to the vessels or pipe work.
  - Protective devices must be adjusted to the correct settings.
  - If warning devices are fitted, ensure they are noticeable, either by sight or sound.
  - Protective devices must be kept in good working order at all times.
  - If protective devices such as safety valves and bursting discs are fitted ensure these discharge to a safe place.
  - Ensure that, once set, protective devices cannot be altered except by an authorised person.

### Maintenance

- 5.4 All pressure equipment and systems should be properly maintained. There should be a maintenance programme for the system as a whole. It should take into account the system and equipment age, its uses and the environment.
- 5.5 Systems should be depressurised before maintenance work is carried out.
- 5.6 Ensure there is a safe system of work, so that maintenance work is carried out properly and under suitable supervision.

### Training

- 5.7 Everybody operating, installing, maintaining, repairing, inspecting and testing pressure equipment should receive appropriate training in the necessary skills and knowledge to carry out their job safely.

### Examination

- 5.8 A written scheme of examination is required for most pressure systems. Exempted systems are listed in the Regulations. Generally speaking, only very small systems are exempted.
- The written scheme should be drawn up by a competent person. It is the duty of the user of an installed system and the owner of a mobile system to ensure that the scheme has been drawn up.

- The written scheme of examination must cover all protective devices. It must also include every pressure vessel and those parts of pipelines and pipe work which, if they fail, may give rise to danger.
- The written scheme must specify the nature and frequency of examinations, and include any special measures that may be needed to prepare a system for a safe examination.
- The pressure system must be examined in accordance with the written scheme by a competent person.
- For fired (heated) pressure systems, such as steam boilers, the written scheme should include an examination of the system when it is cold and stripped down and when it is running under normal conditions.

**Note:** A statutory examination is designed to ensure that your pressure system is 'roadworthy'. It is not a substitute for regular and routine maintenance

## REFERENCE DOCUMENTS

- The Health and Safety at Work (NI) Order (1978)
- Control of Noise at Work Regulations (NI) 2006