

Guidance on choice of lab coat style and material

Background

This guidance is issued as a result of questions raised by several Schools regarding the suitability of lab coats for various procedures, particularly those involving use of naked flames or other sources of ignition with flammable liquids.

The Personal Protective Equipment [PPE] at Work Regulations 1992 require that where PPE is supplied it must have been assessed to ensure it is suitable for the intended purpose. Therefore the choice of style and fabric of lab coats provided must be arrived at as a result of risk assessment of the nature and quantities of the hazards involved and the circumstances of use. The following guidance is intended to assist Schools in making that choice.

Reasons for wearing a Lab Coat

A lab coat is worn to give you maximum protection in the following ways:

- The lab coat must be able to absorb or deflect splashes or spills so that harmful materials are kept off your skin.
- The lab coat must be able to absorb or deflect minute particles that you may not even be aware of, such as aerosols, dust and radiological hazards.
- The lab coat should offer some protection against flash and fire so that even if the coat starts to burn or char, you should escape without injury or with less serious injuries.

Lab Coat Style

- **Standard 'V' neck coats** are suitable only for general laboratory procedures involving the use of lower hazard substances. The sleeves are open so there is a potential for the lower arm to be exposed to harmful substances and aerosols, unless gloves are worn over the cuffs of the coat. Wide cuffs can also cause spillage if they inadvertently catch on items on the bench. The open neck offers poor protection to the upper part of chest and neck.
- **Double fronted, high neck coats with knitted cuffs [Howie style]** provide much greater protection than the standard coat and are mandatory in laboratories where biological and genetically modified materials are handled. They are also strongly recommended for laboratories where hazardous chemicals are used in higher risk procedures.

Fastening

Press stud fastenings are integral for Howie style coats, but they should also be the choice for all lab coats to enable the coat to be removed quickly should contamination occur.

Fabric

- **Polyester Cotton [65%:35%]**. Coats made from this fabric are light weight [195g/coat] and easily laundered. They can also be autoclaved so are often the choice for biological work where such treatment may be necessary. However these coats should **NOT** be used where resistance to flammability may be required. When exposed to a flame, or contaminated with pyrophoric substances, they burn very readily and due to the high polyester content will melt and stick to the body, causing severe burns.
- **Cotton** Less flammable than the above, but it is less durable, does not launder as easily and cannot be autoclaved. Heavier than poly cotton [330g/coat] so may be less comfortable in hot weather.
- **Cotton Polyester [75%:25%]** At 275g/coat this fabric is a more comfortable weight than cotton and the polyester content gives it better durability and laundering properties. Can be made flame-retardant (see below)

Flame retardant treatments

Pure cotton and cotton polyester [75%:25%] can be treated with Proban, which greatly reduces flammability. Therefore, the provision of Proban treated lab coats is strongly recommended for procedures involving significant quantities of flammable solvents in association with naked flames or sources of ignition.

Armguards

For some procedures that involve the use of Bunsen or spirit burners, such as might occur in biological containment laboratories, a fully flame retardant lab coat may not be warranted and a suitable alternative would be to use cuffed arm guards that have been treated with Proban.

Sources of Supply

E&E Workwear currently supply standard and Howie style coats to Medical School Stores. Details of the costs and minimum orders for Proban treated lab coats and arm guards have been provided to Medical School Stores. They can also be contacted directly at sales@eandeworkwear.co.uk

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