

High visibility shirt catches fire

Purpose

This alert informs employers and workers of the danger of synthetic high visibility clothing catching fire when flames or ignition sources are present. It also highlights the need to control risks associated with 'hot work' and the need to wear high visibility clothing when working in the vicinity of mobile plant.

Background

A road construction worker was using a demolition saw (demo-saw) to cut a steel upright when sparks ignited the stomach area of his high visibility shirt. He suffered burns to his stomach area and to both hands after trying to pat out the flames with his bare hands.

In this incident, two hazards were present – mobile plant and ignition sources. The high visibility clothing worn to make workers more visible to mobile plant operators introduced a secondary hazard – flammability.

High visibility clothing made from synthetic fibres such as polyester and nylon can catch fire or melt. Oxy-cutting, arc welding, angle grinding and demo-saw cutting are examples of common hot work activities that cause sparks that can ignite these types of fibres. Workers should not wear flammable synthetic clothing when performing hot work.

While high visibility clothing made from flammable synthetic materials is common, fire retardant high visibility clothing is also available.



Figure 1 – The fire damaged clothing

Recommendations

WorkSafe expects employers to provide the highest level of protection that is reasonably practicable – for **all** the hazards that are present. Where mobile plant and flammability hazards are both present, employers must manage both hazards.

Some options for reducing the risks from both of these hazards are outlined below. They are ranked from the highest level of protection and reliability to the lowest.

1. **Elimination** of either the ignition source or mobile plant hazard

- Order material to the correct size so it doesn't need to be cut onsite (hot work is not required).
- Prohibit hot work in areas where mobile plant is operating (perform hot work in an area without mobile plant) so that high visibility clothing is not required in the area where the work is being performed.
- Prohibit mobile plant in the area where hot work is being performed so that high visibility clothing is not required.

2. **Substitution** of equipment to reduce the risks through changes to systems of work.

- Replace grinders or other equipment that create sparks, with tools that do not create sparks such as bolt cutters (for cutting rods and reo), or pipe cutters (for cutting steel pipe).
- Issue workers who undertake hot work with fire resistant high visibility clothing. Workers who frequently work with or near ignition sources (e.g. welders, plumbers and electricians) should only wear natural fibre or fire resistant protective clothing.

3. **Administration and personal protective equipment**

- Workers, including contractors and/or sub-contractors, must receive training or instruction in the hot work task and related safety precautions.
- Use appropriate personal protective equipment (PPE) to protect workers from all the risks present. High visibility clothing is one type of PPE, and it should be carefully selected based on the risks present.
 - Select the appropriate high visibility clothing for the work being performed. There are several classes of high visibility clothing, each suited to different conditions (e.g. whether the environment is dark, bright, wet, foggy, cold or hot).
 - Fire resistant high visibility clothing is available in many fabrics, including cotton, wool, leather, Kevlar and Proban. These fabrics provide different levels of fire protection, and are suitable under different conditions. Read the manufacturer's instructions for use to ensure the clothing provides the appropriate level of protection.
 - Retro-reflective material, which reflects light back and is suited for use at night, is typically a plastic covering and should not be worn near hot work.
 - Ensure that workers undertaking hot work also use other appropriate fire resistant protective clothing, such as aprons, jackets, trousers, gloves, head and neck protection, goggles or welder's mask, as well as fire resistant high visibility or natural fibre clothing, for the task being undertaken.
 - Regularly clean and inspect high visibility clothing to ensure that its colour hasn't faded.
 - Cordon off the area around and underneath the hot work to protect other workers from the ignition source, and ensure that a fire extinguisher is readily available near the ignition source.

Further information

WorkSafe SWAT Bulletin [Safety for workers and traffic – High visibility clothing](#) provides an overview of high visibility clothing requirements for people working on or near roads, and provides an overview of the classes of high visibility clothing available, and the risks they control.

The material has been prepared using the best information available to WorkSafe Victoria. Any information about legislative obligations or responsibilities included in this material is only applicable to the circumstances described in this material. You should always check the legislation referred to in this material to ensure that you have complied with the law. Accordingly WorkSafe Victoria extends no warranties as to the suitability of the information for your specific circumstances.

Call us on 1800 136 089 or email us on info@workcover.vic.gov.au