Occupational Health and Safety

HAZARD ALERT

Title: 3D Print Lab fire

HA# 1702

Issue Date: 20 July 2017

Location: All Monash University Controlled Sites

Description:
An electrical fire had originated inside the internal power supply unit of a Flashforge 3D printer, around midnight 14 June 2017 in a 3D print laboratory. The fire resulted in the total loss of the contents of the laboratory.

Risk rating:

Score: Extreme Risk

Explanation:
Consequence = Major to Catastrophic
(Significant lost time injury/extremely serious/possible fatality)
Likelihood = Possible (Might occur)

Key Learnings / Actions for Prevention:

• Arrange for an electrician to immediately review the integrity of power packs in existing 3D printers.
• Ensure that volatile solvents used for cleaning the nozzles of the extruder are stored appropriately and are not left on the bench near the printers.
• If appropriate, install additional fire detection systems over existing 3D printer facilities and ensure appropriate fire detection systems are installed at the planning phase of new 3D printing labs/facilities.
• Ensure there is additional assisted ventilation in the room if using filaments such as Acrylonitrile Butadiene Styrene (ABS), PolyEthylene Terephthalate (PETT), nylon, ThermoPlastic Elastomers (TPE), etc.
• Ensure the fan units and air vents in the 3D printers are not obstructed and are free from dust. Ensure regular laboratory maintenance is conducted and documented.
• Review after hours’ access to 3D print labs/facilities.
• Review and risk-assess unsupervised after hours printing.
• Prepare safe work instructions that fully detail all controls identified in the risk assessment.
• When initialising a print job, observation is critical to detect potential issues e.g. extruder filaments sticking; extruder arm not moving freely; clogged extruder nozzle; and heat settings exceeding upper operating limits.

More Information:

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