

October 2022

Battery fire in underground storage

Summary of incident

On 8 July 2022 at 10.55pm, two tunnel workers observed smoke emerging out of a heavy-duty steel toolbox that was stored underground. A third worker radioed in for assistance in extinguishing the fire. A worker started to remove tools and other gear from the toolbox whilst the two other workers obtained a 9kg dry powder extinguisher. The worker who was removing tools and gear from the toolbox observed sparks flying towards them. They stepped back and, after using the extinguisher, the fire was thought to have been put out.

However, the tool sparked a fire for the second time. The workers closed the toolbox lid and a leading hand arrived at the scene with a second 9kg dry powder extinguisher. Workers opened the lid using scaffold tubes and the fire was extinguished a second time.

Workers started removing tools out of the toolbox and placed them on a nearby scaffold. Upon removing, workers found a 6V Hilti Lithium Battery 822 5.2 Li-Ion melted (connected) to a Hilti Sabre Saw SR6-A22. The leading hand used the extinguisher to spray down the battery and Sabre Saw. The fire had spread to other tools and batteries stored in the toolbox but the prompt actions of the workers prevented a larger fire.

What we know

- Lithium battery fires have occurred in the past.
- Lithium battery fires can be difficult to extinguish.
- Poorly maintained battery-operated tools could contribute to these types of fires.
- Any combustible material stored underground is potential fuel for a fire.



PCBUs should:

- undertake a risk assessment of any underground operations to determine if battery-operated tools can be stored above ground
- avoid storing multiple tools together
- ensure an inspection system is in place to monitor tool condition
- charge tools above ground
- consider steel toolboxes to contain potential fires
- ensure workers are trained to use fire extinguishers
- ensure the correct fire extinguishers are available
- alert workers to the potential for battery fires and the difficulty in extinguishing a battery fire
- consider removing the battery from the tool when not in use.

More information

www.fireandemergency.nz