



CBOS
Consumer, Building &
Occupational Services
Promoting a fair marketplace

Electrical Standards and Safety

Hazard Alert

Fire risk associated with tumble dryers: Spontaneous combustion

What is the hazard?

The use of tumble dryers, both commercial and domestic, to dry tea towels, dishcloths, bathroom towels and similar that have been exposed to either cooking oils, fats, bath oils or massage oils can result in a fire.

How does this hazard occur?

Heating and drying items which may have residual amounts of flammable oils or fats creates a risk of **spontaneous combustion**. This may result in fire damage to the drying equipment and surrounding building. This combustion can occur during the cycle or even long after the cycle has finished.

Washing these items does not always remove all the fats and oils, and placing them in a tumble dryer always raises the temperature. When you leave a sizeable bundle to cool, heat can store in the middle. The mix of high temperatures and the fats and oils can cause an **exothermic reaction**, which can cause a fire to start.

This occurs after the cycle has finished and the drum has stopped. The heated towels that remain in contact with the hot metal can be enough to cause spontaneous combustion.

Background

When the Tasmanian Fire Service attend to fires with a suspected involvement of electricity, or electrical equipment, an inspector from the Electrical Safety Inspection Service also attends to help with the investigation.

The investigation findings are presented to the Electricity Standards and Safety unit within CBOS for further action including measures to help reduce the risk of a reoccurrence.

Tasmania has recently experienced three examples of fires associated with dryers.

Case Study I

A commercial laundry had completed drying a load of around 400 tea towels, and removed the load to a metal caged trolley, which was then left unattended. The tea towels subsequently spontaneously caught fire, causing extensive damage to the building and contents.

Splitting the bundles into smaller bundles and separating them may have prevented this fire.



Image 1: Commercial laundry damaged by fire

Case Study 2

Tea towels from a restaurant were washed and dried at a laundromat. It is suspected that the load was left in the dryer for an extended period of time before self-igniting. The fire caused extensive damage to that shop and other neighbouring shops.

Removing the tea towels from the dryer immediately after the drying cycle finished and splitting the tea towels into small piles to cool down may have prevented this fire.



Image 2: Fire damaged contents inside a tumble dryer

Case Study 3

A load of tea towels were brought home from a pizza shop. After washing they were placed into the dryer for a short cycle. The following morning the load still felt damp so was restarted for a second cycle. Shortly after restarting, a fire started in the dryer causing extensive damage.

These towels should have been split into smaller loads and removed immediately after the first drying cycle finished.



Image 3: Fire damaged tumble dryer

Risk

Factors which increase the risk of fire from tumble dryers include:

- Excessive cycle time, where the load becomes too hot
- Large volumes of items that have oils and fats
- Insufficient detergent in the wash cycle to neutralise the oil build up
- Overloading of the dryer
- Blocked lint filters resulting in reduced airflow through the dryer and providing a possible source of ignition
- Not completing the cool down at the end of the cycle
- Worn components of the dryer – any fault in a dryer that causes the drum rotation to ‘struggle’ to rotate, in either direction, is reason to stop using the dryer until the problem is resolved
- Storing dried items in large bundles – you should split into small bundles keeping each bundle away from the other, and
- Leaving the laundry unattended after tumble drying – check the laundry until items are properly cooled.

Remember

Ensure all smoke alarm batteries are regularly replaced and tested to ensure they are working as intended.

Document Development History

Version	Application Date	Sections amended
1.0	December 2020	Original release
2.0	September 2022	Format update, minor updates

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