



## Electrical Equipment Incident Report

REPORT NUMBER: IR201632f

Response Assessment: 462757

CIS Event: 285967

### EQUIPMENT PARTICULARS

Property Record No.: QFES

<b>EQUIPMENT TYPE:</b>	Liquid Heating Appliance	Bread Toaster	Socket Outlet	Kitchen Machine
<b>BRAND/TRADENAME:</b>	Home&Co	Unknown	Unknown	Vorwerk
<b>DETAILS:</b>	WK831, 240V, 1850-2200W	Unknown	Unknown	Thermomix 31-1, 220-240V~,50/60Hz 1500W
<b>HAZARD CLASSIFICATION:</b>	Fire			
<b>INCIDENT LOCATION:</b> <small>(SUBURB)</small>	DUGANDAN			

#### **INCIDENT SUMMARY:**

Four items of electrical equipment from a kitchen fire were submitted by the QFES to the ESO with a specific request for examination for evidence of electrical cause in a kettle heating element and the elimination of the other submitted items as potential fire ignition sources.

The submitted samples included the remains of an electric kettle (Photo 1) with a request to examine for suspected pitting in the kettle heating element as possible evidence of an electrical source of ignition of fire. A toaster (Photo 2) was also submitted with a request to examine it for evidence to rule out as an ignition source. A badly damaged kitchen machine submitted (Photo 3) was identified as a Vorwerk brand, model Thermomix. This was confirmed by the rating markings found under the machine (Photo 4). Two fire damaged wall socket outlets were also provided (Photo 5& 6).

The plastic enclosure and assembly of both of the socket outlets appeared badly melted from direct external radiant heat. Both outlets' internal metal bus bars and terminal connections survived the fire and short lengths of building cable could be seen still attached. These cable connections were all found to be terminated correctly. Because of fire damage it was not possible to determine if the outlets were switched on or off at the time of the fire. Two three pin plugs were observed inserted in each of the wall socket outlets (Photos 7 & 8). These were found still connected to the kettle and toaster via their respective supply flexible leads and plugs. There was no evidence of any additional plugs being inserted into the wall socket outlets. No evidence of adverse electrical activity could be observed on the surviving metal bus bars, terminals of the wall socket outlets or the building cable conductors. The pattern of damage was consistent with exposure to radiant heat and these wall socket outlets were eliminated as potential points of fire origin.

**INCIDENT SUMMARY:**

The kettle was identified as a Home&Co brand, model WK8321. This kettle was a cordless type removable in normal use from its plastic base containing an electrical mains connection. Even though the plastic kettle had melted down to its base the underside of the kettle base was not badly damaged and the identifying rating label was able to be read (Photo 9). The heating element was found undamaged (Photo 10) with no pitting evident. A concentration of fire damage with charred plastic was observed around the cordless kettle connector at the base and rear of the kettle (Photo 11). The kettle's thermostat switch and indicator lamp in this vicinity were consumed by the fire. No evidence of adverse electrical activity was observed on the kettle's internal electrical connections or terminals.

The submitted toaster was badly damaged by fire with all the plastic components and original enclosure consumed leaving only the metal frame and mechanism. The make and model of the toaster could not be identified. The toaster was also too badly damaged by fire to show any evidence of adverse electrical activity. The double leaf-spring switch that disconnected the power when the toaster's carriage was in the up position was damaged with one contact missing (Photo 12), however the leaf-spring switch contacts that could be seen appeared to be in good order. (Photo 13).

The Thermomix model kitchen machine was also badly damaged with the plastic components and enclosure melted down (Photo 14). The metal bowl of the Thermomix that survived the fire was still in an upright position and showed no particular concentration or pattern of fire damage on its inside (Photo 15). It appeared to have been affected by radiant heat damage only. No adverse electrical activity could be observed on the surviving conductors or terminals of this kitchen machine. The Thermomix's plug and supply flexible cord was missing and therefore no evidence the Thermomix was connected to electricity at the time of the fire could be found.

The toaster and kettle could not be eliminated as potential fire sources because they were both found still connected to the wall socket outlets and may have been energised at the time of the fire. The toaster was too badly damaged to find evidence of adverse electrical activity.

The pattern of damage around the location of the kettle's cordless connector and thermostat switch is consistent with an overheating event (Photo 16). Even though no direct evidence of an arc tracking event could be seen on the cordless connector conductors, the very localised charring of the plastic could be indirect evidence of arc tracking. However, it is not possible to determine if this is insulation breakdown was a cause or consequence of the fire.

Approved  
Reg Neil  
Senior Equipment Safety Advisor  
15/5/2020

Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
**Reg Neil**  
**Senior Equipment Safety Advisor**  
**Electrical Safety Office**

Approved  
Carl Porritt  
Manager Equipment Safety  
27/5/2020

Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
**Carl Porritt**  
**Manager Equipment Safety**  
**Electrical Safety Office**

**Statement Re: Provision of Information.**

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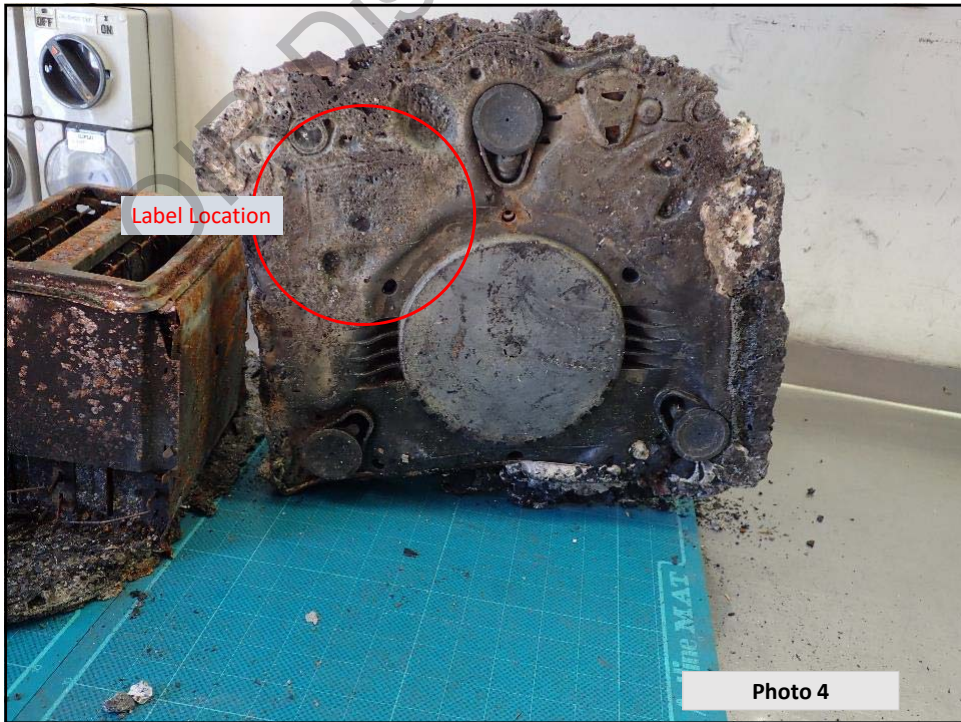
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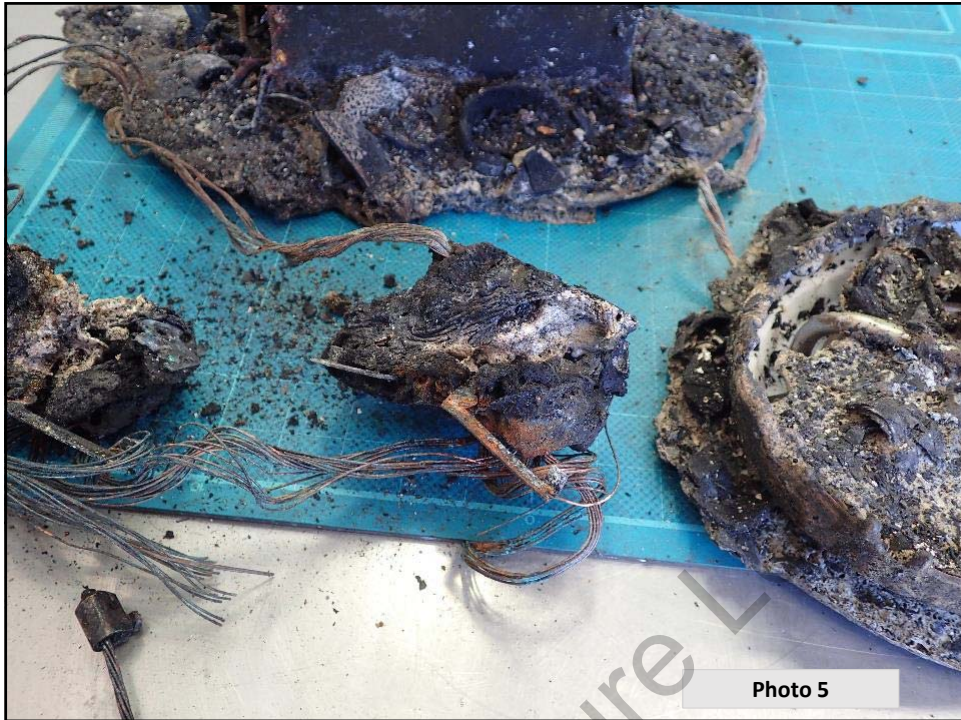


Photo 5

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Photo 6

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Photo 9

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Photo 10

10



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