Incident Summary #II-1113068-2020 (#20115) (FINAL)

SUPPORTING INFORMATION	Incident Date		November 27, 2020
	Location		Abbotsford.
	Regulated industry sector		Electrical - Low voltage electrical system (30V to 750V)
	Impact – Injury	Qty injuries	0
		Injury description	N/A
		Injury rating	None
	Impact – Damage	Damage description	Components of the electric fireplace warped and melted. The surrounding wood framing burnt.
		Damage rating	Minor
	Incident rating		Minor
	Incident overview		An electric fireplace was installed in a renovated dwelling. When the fireplace was turned on for the first time for testing purposes, the fireplace caught on fire.
INVESTIGATION CONCLUSIONS	Site, system and components		The fireplace is designed to work with either 120 volts or 240 volts. The internal wiring for 120 volts has yellow jumper wires from the manufacturer connecting terminals together. When the fireplace is intended to be used by 240 volts, the yellow jumpers are to be removed according to manufacturer's instructions. Regulations require electrical apprentices performing electrical work to be supervised by a qualified individual.
	Failure scenario(s)		The electric fireplace was installed in the dwelling at framing stage of the renovation and the electrical connections made. The fireplace was connected to a 240 volt circuit and the yellow jumper wires were not removed. The house was then dry walled and painted. At the end of the job the contractor turned the breaker for the fireplace on for the first time to ensure it was working properly. The contractor noted the fire place was working and the heating elements started to glow. The contractor left the home with the breaker in the "on" position. The home owner came downstairs, smelt burning, noticed the smoke and called 911.
	Facts and evidence		On site observations: - 3 conductor #12 AWG non-metallic sheath cable was installed from the breaker to the fireplace location. - The wire was cut when the fireplace was removed from the wall and the remaining portion was still connected to the fireplace. - The remaining portion of the wire was found attached to the fireplace. All three conductors were connected which would have supplied it 240 volts.

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	- The fire originated from the internal components of the fireplace. - The yellow jumper wires were still installed on the terminal block. (Photo 7) Electrical contractor statements: - The qualified individual instructed the electrical apprentice to remove the yellow jumper wires. - The fireplace was energized for the first time at the time of the incident. - The fireplace breaker was left in the “on” position when the contractor left. - The homeowner came downstairs after the electrical contractor left and found the fireplace on fire. Manufacturer’s installation manual: - It instructs the installer to remove the yellow jumper wires for 240 volt installations. (Photos 4,5,6)
Causes and contributing factors	The apprentice not removing the yellow jumper wires from the terminal block is the cause of the incident. A contributing factor is that the qualified individual responsible for overseeing the apprentice’s work did not check the connections prior to energizing the fireplace.

Photo 1: Location where the electric fireplace was installed.

Photo 2: Damage to the wooden framing surrounding the fireplace location.

Photo 3: Damage to the top of fireplace.

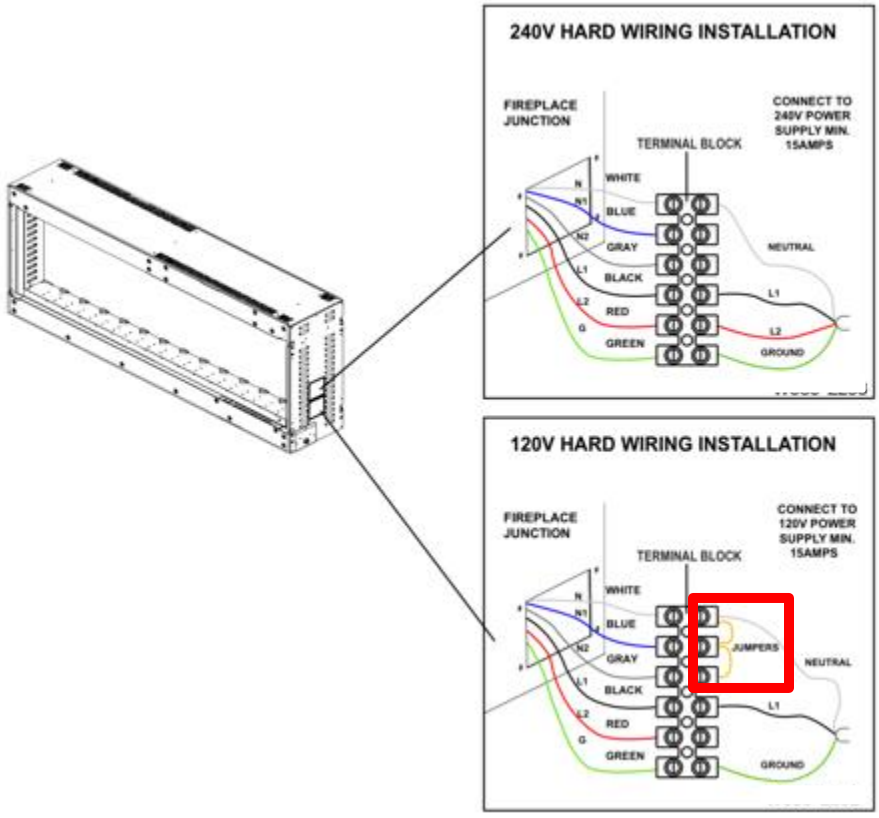

Photo 4: Wiring installation methods showing the yellow jumpers from the manufacturer.

3.3 120V hard wire connection

A. Loosen the securing screw from the terminal block to remove the cord from the terminal block. **KEEP 2 WIRE JUMPERS IN THE TERMINAL BLOCK.**

B. Add a strain relief and feed the supply wires through the 7/8" (22mm) hole from the terminal block.

C. Insert White (N) wire from power supply to the designated (N) slots in the terminal block. Secure by tightening the screws on the (N) slots. **ENSURE JUMPER WIRES ARE SECURED.**

D. Run Black (L1) and Green (G) wires from the power supply to designated slots on the terminal block.

E. Re-install cover plate.

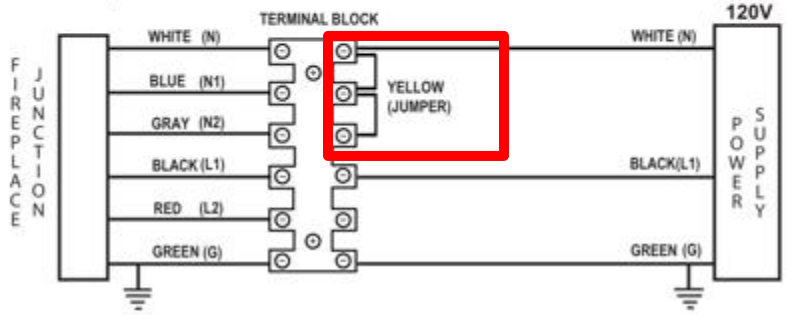

Photo 5: Manufacturer's installation instructions for 120 volts.

electrical information

3.4 240V hard wire connection

A. Loosen the securing screw from the terminal block to remove the cord from the terminal block. **REMOVE 2 WIRE JUMPERS IN THE TERMINAL BLOCK.**

B. Add a strain relief and feed the supply wires through the 7/8" (22mm) hole from the terminal block.

C. Insert White (N) wire from power supply to the designated (N) slots in the terminal block. Secure by tightening the screws on the (N) slots.

D. Run black (L1), Red (L2), and Green (G) wires from the power supply to designated slots on the terminal block.

E. Re-install cover plate.

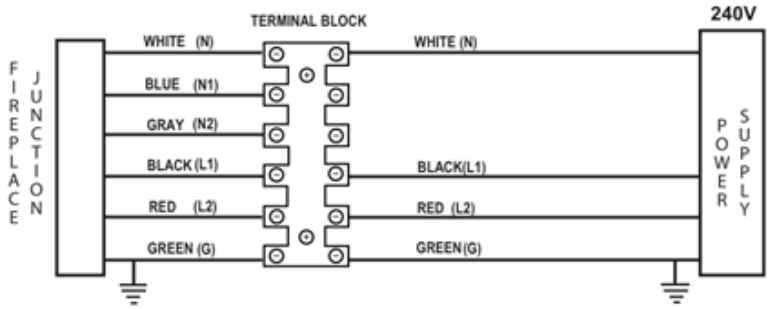

Photo 6: Manufacturer's installation instructions for 240 volts.

Photo 7: Yellow jumpers installed on fireplace terminal block.