

## Incident Summary #II-1346918-2022 (#26711) (FINAL)

SUPPORTING INFORMATION	Incident Date	March 18, 2022	
	Location	Port Coquitlam	
	Regulated industry sector	Electrical - Low voltage electrical system (30V to 750V)	
	Impact	Qty injuries	0
		Injury description	No Injuries
		Injury rating	None
	Damage	Damage description	Arcing and corrosion damage to an electrical floor receptacle located in a grocery stores customer walking area.
		Damage rating	Minor
Incident rating	Minor		
Incident overview	Water and corrosive contaminants (wax floor stripper and floor cleaners) used to clean the floors in a grocery store seeped into the floor receptacle. Over time this caused damage to the floor receptacle gaskets and caused the metal components of the receptacle to corrode and oxidize.		
INVESTIGATION CONCLUSIONS	Site, system and components	<p>When receptacles are installed in floors, they are required to be installed in floor boxes. These floor boxes are either installed flush with the finished floor or raised slightly above and are equipped with special covers designed to restrict water, dust and other particulates from contacting the receptacle when not in use.</p> <p>Receptacles are installed in floors usually due to a lack of wall space in the area where receptacles are usually located. They can be placed at any point along the floor which provides flexibility for positioning equipment like conference room tables, displays, and helps prevent the need to run extension cords in high traffic areas.</p>	
	Failure scenario(s)	<p>While in the process of removing the floor finish in a grocery store with floor stripper which requires a liberal amount of solution to be applied to the floor, a floor receptacle began to smoke in the area where the floor finish was being removed. A dry chemical extinguisher was used on the receptacle by a store employee and the fire department was called. When the fire department arrived on-site, they disconnected power to the floor receptacle by turning off the circuit breaker feeding the receptacle.</p> <p>Over time removing the floor finish, finishing the floors, floor cleaning damaged the gasket and allowed water and corrosive substances to corrode, oxidize and rust the receptacle. With the degraded gasket and receptacle components, the liquid-based substance entered the floor receptacle box and made contact between the energized and grounded parts resulting in shorting, arcing, overheating, and smoking.</p>	
	Facts and evidence	-Nothing was plugged into the floor receptacle at the time of the incident.	

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	<ul style="list-style-type: none"><li>-Smoke was observed emerging from the floor receptacle by the store employee who used the fire extinguisher on the floor receptacle, this was at the same time the floors were being re-finished.</li><li>-When the fire department arrived on-site, they turned off the circuit breaker feeding the floor receptacle.</li><li>-The product used to strip the floor finish had corrosive properties.</li><li>-Other floor receptacles located in the facility showed the same level of corrosion, rust, and oxidization as the one where the incident occurred.</li><li>-The bottom of the floor boxes was dryer then at the top indicating the moisture was entering from floor level.</li><li>-The floors were routinely cleaned by a machine and mopped creating a scenario that over time water and other products could enter the receptacle after the gaskets had failed.</li><li>-Floor receptacles have been in place since the original construction of building.</li></ul>
Causes and contributing factors	<p>It is highly probable that over time the floor cleaning, finishing and treatment liquids damaged the floor receptacle gaskets allowing moisture and particulates to enter the receptacle causing the receptacle to corrode, rust and oxidize. Those liquids created shorting between the energized components and grounded components of the receptacle leading to overheating and/or arcing causing the smoke to be emitted from the floor receptacle.</p>



Image 1 – Location of floor receptacle involved in the incident.



Image 2 – Images (2-5) are from a sampled floor receptacle located in the same building showing corrosion (not the one involved in the incident) sampled receptacle was energized before removal.



Image 3 – Floor receptacle with cover and gasket removed, when the cover was removed the receptacle corrosion was so severe the receptacle broke away exposing the corroded unprotected terminals.



Image 4 – Removing the receptacle from the floor box, the corrosion was so severe the receptacle was fragmenting into pieces.



Image 5 – The amount of debris inside the floor box.

## INGREDIENTS / INGRÉDIENTS :

Water / Eau (7732-18-5); Monoethanolamine / Monoéthanolamine (141-43-5); Benzyl alcohol / Alcool benzylique (100-51-6); Diethylene glycol butyl ether / éther butylique de glycol diéthylène (112-34-5); Sodium xylene sulfonate / Xylènesulfonate de sodium (1300-72-7); Alcohol ethoxylates / Alcools éthoxylés (68439-46-3)

Image 6 – Floor stripper chemical ingredients.

This product is a powerful product designed specifically for floor finish removal on resilient flooring (vinyl, vinyl composition, vinyl asbestos).

### **IMPORTANT:**

Do not use on wood, linoleum, rubber, marble, painted surfaces, on surface colored and acid dyed concrete floors as this product may harm these surfaces. Test for softening or color bleeding on asphalt floors before using.

Image 7 – Floor stripper warning.