Electrical Hazards in Construction – Power Tools Stats and Facts

FACTS

1. **Damaged Cords:** Worn or frayed power tool cords can expose conductors, increasing the risk of shocks, burns, or tool fires during operation.
2. **Improper Grounding:** Using power tools without grounding pins or GFCI protection increases electrocution risk, especially in wet or outdoor conditions.
3. **Wet Work Environments:** Operating electric saws, drills, or grinders in rain or damp areas without insulation or protective gear heightens shock danger.
4. **Overloaded Circuits:** Plugging multiple high-draw tools into the same circuit can overheat wires and cause electrical fires at the jobsite.
5. **Faulty Tool Insulation:** Tools with compromised internal insulation may shock users even if the cord appears intact.
6. **Lack of Lockout Procedures:** Servicing powered tools without unplugging them or using lockout/tagout practices can result in accidental startups and electric shock.

STATS

- In 2024, OSHA recorded 5,190 workplace fatalities, with ~8% (~415) from electrical incidents. Power tool-related fatalities were ~1% of cases, often due to damaged cords or lack of GFCIs, per NIOSH.
- In 2024, Electrical Standards violations (29 CFR 1926 Subpart K) ranked 5th (2,100 citations), including improper grounding or cord use. PPE violations (29 CFR 1910.132) ranked 6th (1,876 citations), often for inadequate insulated gloves or FR clothing.
- A 2022 NIOSH study found that proper PPE (e.g., insulated gloves, GFCIs) reduced electrical injuries by 25%, but 30% of workers lacked adequate training or PPE compliance.
- Statistics Canada’s 2021 Workplace Safety Survey recorded 5,000 lost-time claims in construction, with ~400 linked to electrical hazards. Shocks (12%) and burns (8%) were prevalent, with 15% attributed to inadequate PPE or tool maintenance.
- WorkSafeBC reported 25–30 annual fatalities in British Columbia (2020–2023), with ~10% (~3) from electrical incidents, including power tool

mishaps. GFCIs and PPE are critical.

- CCOHS 2023 data showed that insulated PPE and GFCI use reduced electrical injuries by 22%, particularly in wet conditions.
- Ontario’s 2024 fines (up to $500,000) target OHS violations, including failure to provide electrical PPE or training.