Effectiveness of Chainsaw Chaps Against Battery-Powered Chainsaws

Background

ASTM F1897-25, published in December 2025, is the most recent North American standard governing the performance, design, and testing of chainsaw cut-protection leg garments. This updated standard clarifies performance criteria for chap materials and incorporates testing intended to reflect modern chainsaw technology, including both gas-powered and battery-powered saws. The standard continues to rely on the core principle of protective fibers designed to rapidly clog and stop a moving chain, reducing the severity of injury.

Importantly, during the development of ASTM F1897-25, side-by-side standardized testing was completed using both gas-powered and battery-powered chainsaws. These controlled tests demonstrated that certified chaps performed just as effectively against battery-powered saws as they did against traditional gas-powered models, validating that modern chap construction continues to meet protective expectations across saw types.

Recent public attention has focused on several at-home, non-standardized tests posted online and on social media platforms. These informal demonstrations often involve retired or damaged chaps, and atypical testing setups. In some of these non-controlled tests, chaps appear to fail to stop the chain. While these videos have raised understandable concern, they do not follow ASTM testing methodology, lack reproducibility, and should not be taken as evidence of actual certified performance.

Effectiveness Against Battery-Powered Chainsaws

Analysis presented by industry sources highlight the common misconception that battery-powered chainsaws inherently defeat chap protection. While battery-powered saws often deliver steady torque without a traditional clutch, ASTM F1897-25 testing confirms that certified chaps continue to perform as intended. In standardized conditions, the protective fibers in chaps consistently jam and stop the chain of both battery-powered and gas-powered saws, demonstrating equivalent protective function.

It remains important to distinguish between certified performance under controlled testing and mixed outcomes in informal demonstrations. Battery chainsaw technology continues to evolve, and high-end professional models may produce greater torque than consumer units commonly shown online. However, the ASTM tests conducted in 2025 were specifically designed to address these concerns, and the results indicate that chap protection remains reliable across saw types.

Summary

- ASTM F1897 25 (Dec. 2025) includes performance testing with both battery-powered and gas-powered saws.
- In standardized testing, chaps performed equally well against both saw types, validating ASTM 1897 certified leg protection effectiveness.
- Industry analysis reaffirms that ASTM F1897 certified chainsaw chaps continue to provide a critical injury mitigation layer when used with battery and gas-powered chainsaws.
- Proper PPE, combined with safe operating practices, remains essential regardless of saw type.

For more information, visit the National Saw Program SharePoint page or contact your respective Regional Saw Program Manager. You may also contact the Acting National Saw Program Manager, Justin Nash, Justin.Nash@USDA.gov.