

Whitepaper 1

Structural Resilience: How SIP Walls Perform in Seismic Zones

Quacent B.V.

www.quacent.eu | info@quacent.eu

Executive Summary

Structural safety is a top priority in earthquake-prone regions. SIPs have proven to be equally resilient as light-frame wood construction. Backed by research and testing, SIP walls meet seismic code requirements across all categories (A–F).

The Challenge: Meeting Seismic Design Codes

The 2009 IRC limited SIPs prescriptively to seismic categories A, B, and C. For D, E, and F, additional testing and evaluation reports are required. Developers often question whether SIPs provide equivalent ductility and drift capacity.

The Solution: SIPs as Equivalent to Light-Frame Construction

Under ICC-ES AC04 and ASTM D7989, SIPs are confirmed equivalent to wood-frame shear walls. USDA FPL studies showed SIP walls meet ductility, drift, and overstrength criteria.

Evidence

Tests of 54 SIP walls (FPL) and 29 walls (APA) confirmed equivalency to conventional wood-frame walls in seismic loading.

Relevant Standards (NEN/EN/ISO)

- NPR 9998 – Seismic design guidance for the Netherlands
- NEN-EN 1998 (Eurocode 8) – Design of structures for earthquake resistance
- NEN-EN 1995-1-1 (Eurocode 5) – Timber structures
- NEN-EN 14509 – Self-supporting sandwich panels

Conclusion

SIPs are resilient and code-compliant under seismic loading, equivalent to conventional wood systems.

Call to Action

Contact Quacent B.V. via www.quacent.eu or info@quacent.eu for seismic-compliant SIP solutions.