

Structural Load and Fatigue Testing



- Static and fatigue load testing
- 24-hour monotonic load testing
- High- and low-cycle fatigue performance testing
- Occupational Safety and Health Administration (OSHA) testing
- Cyclic stress-strain testing
- Finite element analysis
- Creep testing
- Relaxation testing

“One load test is worth more than a hundred professional opinions.” This principle articulated by WJE founder Jack Janney has guided our practice since 1956. Leveraging state-of-the-art testing equipment in our extensive in-house laboratory facility, WJE engineers routinely test materials and systems to failure under controlled conditions. Whether the results indicate structural deficiencies or verify the component can withstand specified service loads, structural load and fatigue testing provide critical information about the integrity of a structure.

Clients turn to us when they suspect construction deficiencies, observe deterioration that could lead to strength loss, anticipate a change in load demands, or need to verify the effectiveness of repairs or performance of a new structural system. Our in-house structural and materials testing facilities and state-of-the-art equipment offer a unique advantage in developing solutions to construction-related problems.

WJE’s nationally recognized laboratories are capable of full-scale specimen testing using fixed testing equipment, including 120 kip Satec, 500 kip Riehle, and 400 kip Tinius Olsen fatigue-rated test machines; a high-frequency cyclic portal frame; and a 1200 kip concrete cracking frame. Our 8,000-square-foot structural laboratory also includes a strong floor to allow for custom testing configurations with load capacities greater than 2 million pounds.

Drawing upon the knowledge gained from more than 125,000 projects, we apply advanced laboratory testing and analytical techniques to help clients understand the ultimate strength and durability of their structural components.



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REPRESENTATIVE PROJECTS

- Chicago Transit Authority - Chicago, IL: Track direct fixation study and fatigue testing
- County of San Bernardino Medical Center - San Bernardino, CA: Building joint assembly cyclic testing
- General Technologies, Inc. - Stafford, TX: Static testing of barrier anchorages and couplers in accordance with AC303
- Haldex - Kansas City, MO: Spring fatigue and loading response testing and consulting
- Precision-Hayes International - Seagoville, TX: Static and fatigue testing of strand anchorage in accordance with ETAG 013
- Precision Sure-Lock - Dallas, TX: Post-tension anchorage static and fatigue testing in accordance with AC303
- Reliable Void Forms - Austin, TX: Load testing using soil heave on collapsible forms
- Schwager Davis, Inc. - San Jose, CA: Fatigue testing of 2.5-inch diameter high-strength bar in accordance with PTI DC45.4-12, Section 3
- Splice Sleeve Japan, Ltd - Livonia, CA: Five million cycle elastic fatigue tests on grouted splice sleeves
- USA-Form Shoring Tower - St. Charles, IL: Full-scale load testing of 40-foot tower

