



Nail Testing and Quality Control



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Our nail testing and quality control department is unique to the industry. Most nail manufacturers do only what is required, which is to submit samples for testing. We conform to this simple requirement as well. However, at Halsteel we go beyond this requirement by consistently subjecting our raw materials and finished products to demanding in-house inspections and testing.

Our testing facilities are accurate to 0.5 micrometers, and have the capabilities to test and measure:

- Tensile strength of our raw materials
- Bend yield strength of our nails (a measurement required by the ASTM for acceptability of nails)
- Withdrawal testing for fasteners
- Stress and fracture tests for finished fasteners
- Quality conformity of fasteners

Self-Checking Facility

To help ensure the integrity of every test, Halsteel "Smart" machines automatically perform a series of self-diagnostics prior to the start of each test. Analog to Digital converters for load and strain measurements are calibrated and various PC components are subjected to diagnostic tests. The PC system powers down its monitor and enters sleep mode after a short time of no activity.

Digital Signal Processor (DSP) Technology

Each Halsteel "Smart" test machine incorporates analog-to-digital converters and servo controller equipped with digital signal processors. Operating under computer control, the digital signal processor provides high-precision data conversion and motion control. Analog-to-digital conversions are synchronous and performed at a rate of up to 8192 conversions per second at 20 bits. The motion control update rate is 3300.

- Smart Loadframe Features
- Twin Column Loadframe:
- Twin ball screw drive with closed-loop servo and motor controls
- Crosshead Guidance System: Uses heavy channel shape steel columns. Maximum lateral motion + 0.010" over full crosshead travel.
- Anti-backlash system: standard on floor models, optional on table models.
- Emergency Stop control via rocker switch and mechanical limit switches.
- Interchangeable electronic loadcell weighing system is standard.
- Electronic self-identifying loadcells and extensometers are optional.
- Automatic overload protection.
- Quick Disconnect Loadcell and Fixture System.
- Controlled release of load in the event of power failure. A power failure trips emergency stop; operator "start" to resume operation.