



ICC Evaluation Service, Inc.
www.icc-es.org

Business/Regional Office ■ 5360 Workman Mill Road, Whittier, California 90601 ■ (562) 699-0543
Regional Office ■ 900 Montclair Road, Suite A, Birmingham, Alabama 35213 ■ (205) 599-9800
Regional Office ■ 4051 West Flossmoor Road, Country Club Hills, Illinois 60478 ■ (708) 799-2305

Legacy report on the 1997 *Uniform Building Code*™

DIVISION: 05—METALS

Section: 05090—Metal Fastenings

LADD CEILING MASTER FASTENING SYSTEM

ITW RAMSET

700 HIGH GROVE BOULEVARD

GLENDALE HEIGHTS, ILLINOIS 60139

1.0 SUBJECT

Ladd Ceiling Master Fastening System.

2.0 DESCRIPTION

2.1 General:

The Ladd Ceiling Master Fastening System is used to attach ceiling hanger wires to the soffit of concrete decks and steel beams. The system consists of a drive pin, a No. 14 (0.0747 inch) gage steel ceiling clip and a No. 12 (0.1046 inch) gage steel wire with a minimum of four twists at the clip connection. The pin is driven flush with a Ladd Model 1600 low-velocity power driven tool. The drive pin is 0.156 inch in diameter, 1½ inches long and is fabricated from AISI-C1062 modified steel, austempered to a Rockwell “C” hardness of 48-52. The system supports direct pullout and diagonal (45 degree) tension forces. The maximum 45-degree diagonal tension and pullout force for the system with the fasteners driven into normal-weight concrete with a f_c between 3,000 and 5,000 psi or a minimum ¾-inch-thick steel plate is 235 pounds. Fasteners driven into steel plate have sufficient length so that the entire pointed portion of the shank pierces the plate.

The diagonal tension value may be used for determining compliance with the lateral restraint requirements indicated in Table 16-O of the 1997 *Uniform Building Code*™. No shear values are recognized for the system.

The drive pins are to be installed in accordance with the manufacturer’s instructions.

2.2 Identification:

Each drive pin box contains a label indicating the ITW Ramset/Redhead name, the part No. L684, and the evaluation

report number (ER-3618). Each ceiling clip is stamped with the patent number and part No. L651. The drive pin and ceiling clips are also available as an assembly, part No. L652.

3.0 EVIDENCE SUBMITTED

Tension tests for drive pins into concrete and steel plate, product brochures and a quality control manual.

4.0 FINDINGS

That the Ladd Ceiling Master Fastening System complies with the 1997 *Uniform Building Code*™, subject to the following conditions:

- 4.1 The allowable tension (direct pull) force is 235 pounds for fasteners driven into concrete and steel plate. No increase is permitted for duration of loading.**
- 4.2 The allowable diagonal (45-degree) tension values shall not exceed 235 pounds. No increase is permitted for duration of loading.**
- 4.3 Fasteners shall not be installed closer than 4 inches to the edge of any concrete nor shall be spaced closer than 10 inches on center. When installed in steel, the minimum edge distance is ½ inch.**
- 4.4 Fasteners shall not be installed in concrete where the thickness is less than 4½ inches.**
- 4.5 Fasteners are not driven into concrete until the concrete has reached the designated ultimate compressive strength.**

This report is subject to re-examination in one year.