



## Cabinet Design and Environmental Testing

### Quality Design Assurance for Indoor, Outside Plant and-Wireless Electronic Cabinets

CommScope is a market leader in indoor, outdoor and wireless cabinet design, manufacture and integration. A dedicated cabinet design team with over a decade of experience optimizes equipment density, heat transfer, power reserve, environmental protection, and craft friendliness. As a result, CommScope's electronic and cross-connect cabinets have gained world-wide acceptance.

### Superior Design and Components

CommScope's electronic enclosures are completely corrosion resistant, made of 1/8 inch (.32cm) aluminum with galvanized or stainless steel hardware for enhanced strength, durability, heat transfer, and fire resistance. A polyester powder paint is electrostatically applied, producing an extremely durable, high quality finish. The cabinets also use CommScope's patented sealed cooling systems to meet equipment thermal requirements without using outside air in the electronics compartment. This system eliminates any need for filters and keeps water, dust, and pollutants out of the electronics area further preventing contamination, condensation, and corrosion.



### Cabinet Design

The CommScope Cabinet Business Unit has the full backing and support of a dedicated team of CommScope developers. This team of design engineers have dedicated their careers toward development and innovations of Electronic Equipment Housings. The results of this dedication can be seen by numerous patents, innovative



**Wind Resistance Test**

### Fire Resistance Test



**Seismic Vibration Test**

design approaches, as well as a full portfolio of high quality, reliable, cost effective products. These products are clear market leaders and boast features that consistently outperform the competition including: larger line capacity cabinets, higher thermal performance cabinets, larger battery reserve, enhanced battery cooling, longer battery life, patented EMI shielding, superior environmental sealing, and superior corrosion resistance.



**Heavy Rain Test**

## Extensive Testing Ensures Quality

All cabinets undergo extensive environmental testing and system qualification by CommScope based on expected worst case conditions to help provide trouble-free field installation and performance. Cabinets are subjected to the environmental tests outlined by Telcordia TR-TSY-000487 or by customer specified qualification plans. CommScope's complete testing facilities provide in-depth performance understanding and rapid testing of new designs. This extensive testing provides assurance that CommScope's

## A Wide Range of Qualification Tests

All cabinets are subjected to a variety of tests including:

- **Impact Resistance Test:** The cabinet is subjected to an impact of 100 ft-lbs on each exposed surface. No fractures or any loss of function are allowed.
- **Battery Ventilation:** The charging system, batteries, and cabinet ventilation are tested as a system under worst case fault conditions.
- **Acoustical Noise Suppression Test:** Sound levels are measured five feet from a closed cabinet with the fan and all other noise producing equipment running to help assure that systems meet specified requirements.
- **Door Restraint Strength Test:** A force equivalent to a 40 mph (64 kph) wind is applied to the cabinet door with the door in the open position and the door restraint engaged. The force is applied in both the opening and closing direction. The door restraint must successfully resist these forces.
- **Shock/Drop Test:** The cabinet is dropped with and without the shipping container on each corner to simulate shipping and installation activity.
- **Transportation Vibration Test:** The cabinet with and without the shipping container is placed on a hydraulic shaker table and subjected to acceleration forces and frequencies of vibration. This helps assure the cabinet can withstand the shipping and handling activity.
- **Weather Tightness Test:** The cabinet is placed in an enclosure and a very fine white hydrated alumina silicate is blown into the enclosure surrounding the cabinet at 60 mph (97 kph). The cabinet is then checked for evidence of dust entry.
- **Seismic Vibration Test:** The cabinet, equipped with batteries, is placed on a hydraulic shaker table and subjected to acceleration forces and frequencies of vibrations simulating an earthquake.
- **Ground Current Capacity:** A6 AWG (4.1 mm) copper ground wire is attached to the cabinet ground terminal strip. A current of 1000 amperes for 20 seconds is drawn through the 6 AWG ground wire and cabinet ground terminal strip. The wire-terminal strip connection must not open during the test.
- **Paint Adhesion Test:** Panels coated with the paint used on the cabinet are subject to a scraping loop with an 8 lbs (8.0 kg) load. Additionally, manufacturing paint samples are routinely checked as part of manufacturing in-process testing.
- **Lifting Detail Strength:** The cabinet is rigged for lifting as it would be during installation. Forces of three times and six times the weight of the cabinet are applied to lifting details of the cabinet. No deformation is allowed at the force of three times the cabinet weight and no failure is allowed for the force of six times the cabinet weight.
- **Water Tightness Test:** The cabinet is sprayed with water at 45° and 90° angles. No water penetration is allowed.
- **Wind Driven Rain Test:** CommScope owns and operates its own hurricane machine which is dedicated for cabinet development. This machine simulates hurricane conditions by blasting cabinets with wind and water spray at 75 miles per hour (120 kph).
- **Fire Resistance Test:** Brush fire conditions are simulated by igniting wheat straw surrounding a cabinet mounted on a concrete pad. No melting, burning, charring, or damage of the cabinet contents is allowed.
- **Thermal Performance Test:** Fully equipped cabinets are subjected to simulated worst case field conditions of temperature, solar load, and wind. Equipment components must not exceed their specified safe operating limits.
- **Wind Resistance Test:** The cabinet is mounted to the concrete pad, and a horizontal force equivalent to a 100 mph (161 kph) wind is applied to the cabinet. The cabinet must resist this force without overturning.

## Protect Your Investment – Protect Your Future

CommScope has attractive and rugged cabinet systems which are deployed throughout the world in harsh environments including Saudi Arabia, Southeast Asia, Southwest United States, South Central America, and Canada. Successful operation in these climates provides testimony to the robustness of the designs and overall reliability of CommScope's cabinet systems.

For more information on our products, please contact your CommScope Sales Representative or call 1-800-4CABNET (1-800-422-2638). You can also visit our website at <http://cw.commscope.com>

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