

Warranty

Quality and customer satisfaction are two promises overused and seldom supported in today's world. You would think that would make guaranteeing our products hard, but actually, it's quite easy. Our fiberglass-reinforced composite poles are made of such a phenomenal material, it seems natural to describe them as high quality and it is even easier for us to guarantee your satisfaction.

Not only do they resist rot, rust and extreme temperatures, but they are strong, long-lasting and aesthetically pleasing. Composite-based poles are the logical solution to lighting, distribution and transmission needs.

We are so confident that we promise the Shakespeare Composite Structures poles you select will do what we say. They will stand up to the wind, the cold, the sun, and even time. Our resin-rich Tuff-Pole® has a coating that is expressly designed to protect the makeup of the poles. Test after test and time after time, they have proven this to us and to our many customers around the globe.

Our Statement of Warranty

All of Shakespeare Composite Structures composite poles are guaranteed to be free of defects in material or craftsmanship for three years from the date of purchase, when used under normal conditions.

In addition, we guarantee that the below-ground portion of our poles, when properly direct buried and backfilled, will not weaken or deteriorate so as to shorten the service life, for a period of 20 years from the date of purchase.

Correction of any defect by either repair or replacement at the option of Shakespeare Composite Structures constitutes fulfillment of the Seller's obligation under this warranty and constitutes the Purchaser's sole remedy. Shakespeare makes no other express or implied warranty, nor any warranty of fitness for a particular purpose, nor merchantability. Shakespeare's obligation to repair or replace does not include any obligation to reimburse the Purchaser for expenses of transportation, installation, removal or other expenses which may be incurred. In no case shall Shakespeare be liable for consequential, special or indirect damages resulting from breach of this warranty.



Shakespeare
Composite Structures

a Genlyte company

WIND DATA

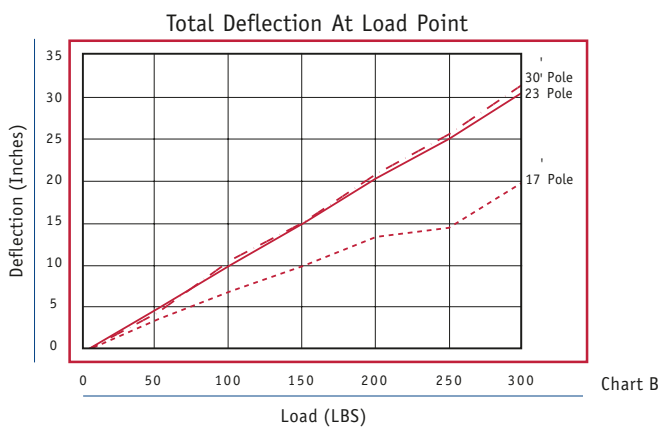
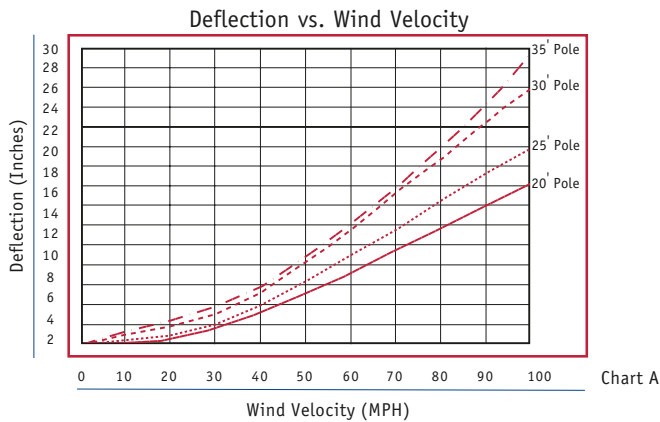
Wind Velocity Exposure Test Results Shakespeare simulated the effects of wind loading on its poles in accordance with the American Association of State Highway and Transportation Officials (AASHTO) LTS-1 and LTS-2.

The wind velocities illustrated by Chart A are isotach values, not gust values. Shakespeare's design velocities include a gust factor of 1.3, which results in a pole designed for winds considerably greater than the isotach value.

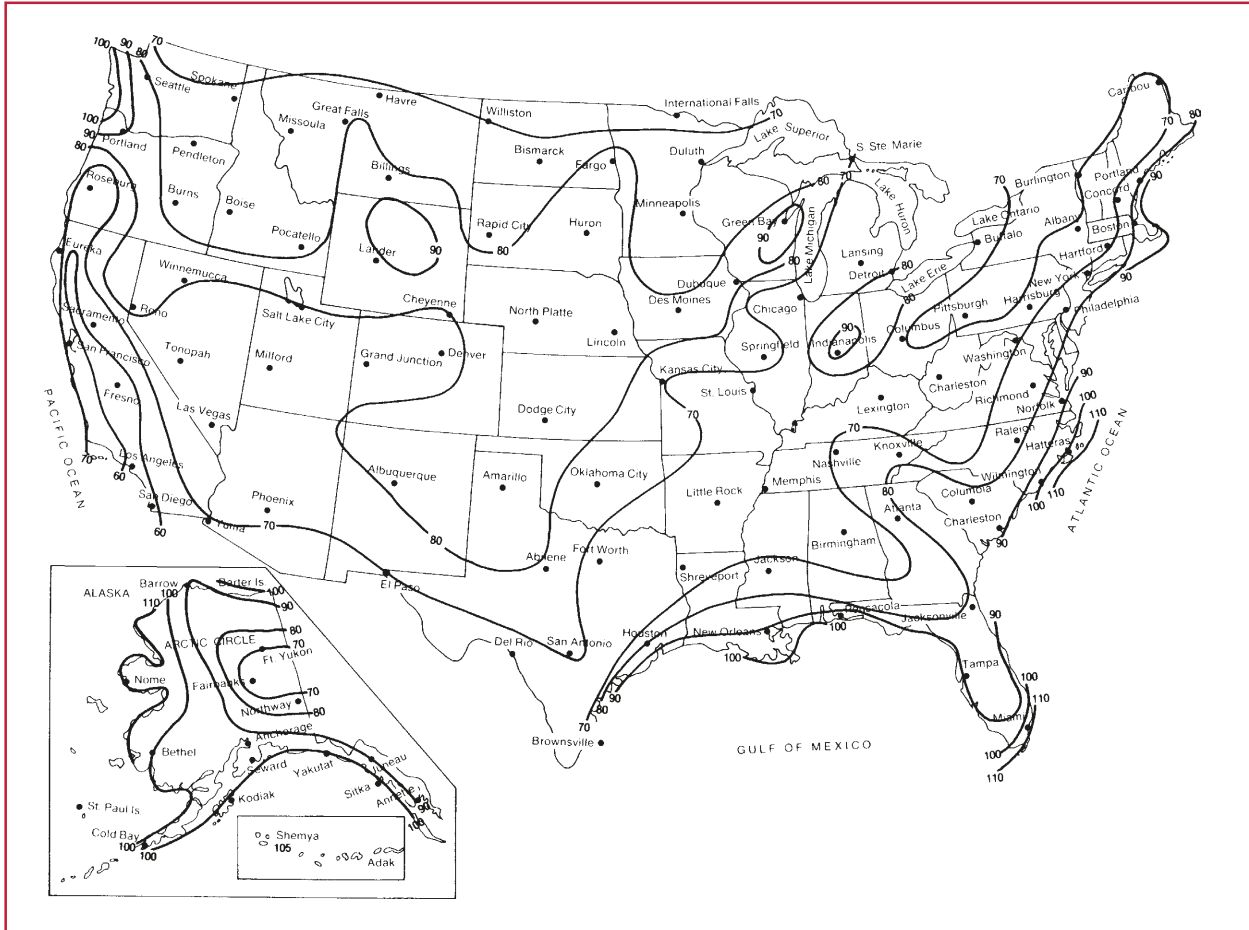
Wind loading for Shakespeare Composite Structures fiberglass-reinforced composite poles is calculated in accordance with AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

Lateral Load Deflection Test Results Shakespeare tested the lateral load deflection of its 30-foot Round Anchor Base and 23- and 17-foot Round Direct Burial poles in accordance with the American Society for Testing and Materials (ASTM) D-4923. The poles were subjected to loads ranging from 0-300 lbs. Chart B illustrates inches of total deflection at load point.

Applications Shakespeare composite poles are currently resisting the effects of strong winds in Florida, Hawaii, Colorado, Wyoming, Alaska and near the Arctic Circle, among other locations.



Maximum Expected Wind Velocities in the U.S.



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Isotachs of Extreme Mile
at 30 Feet Above Ground

| Isotach Value | Gust Velocities |
|---------------|-----------------|
| 60 | 78 |
| 67 | 87 |
| 75 | 98 |
| 80 | 104 |
| 85 | 111 |
| 90 | 117 |
| 95 | 124 |
| 100 | 130 |
| 110 | 143 |
| 120 | 156 |

Interval for Hawaii is 80 mph.
Interval for Puerto Rico is 95 mph.

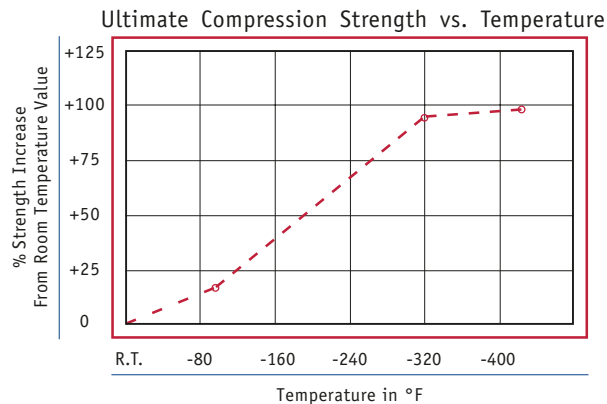
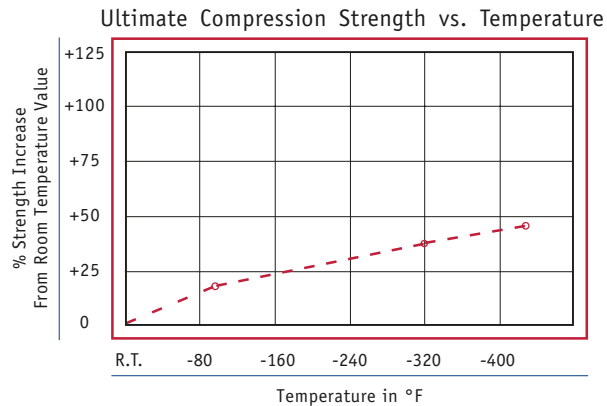
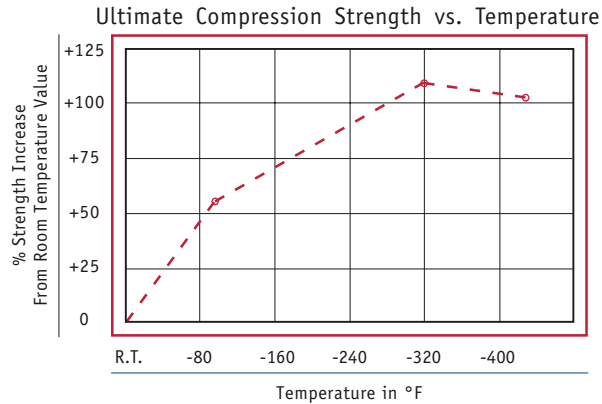
Isotach 0.02 Quartiles,
in Miles Per Hour:
Annual Extreme-Mile 30 feet
above ground, 50-year Mean
Recurrence Interval.

50-year Mean Recurrence (miles per hour)

LOW TEMPERATURE DATA

Low Temperature Exposure Test Results The following tests of fiberglass-reinforced composite materials were conducted by Owens Corning® Research Labs.

Under temperatures ranging from room temperature to -425 °F, scientists attempted to pull apart (tensile), bend (flexural) or compress (ultimate compression) fiberglass-reinforced composite materials in order to induce failure. The results, as cited below, show the percentage of strength increase in cold air.



Applications Shakespeare composite poles are currently resisting the effects of low temperatures in Alaska, Montana, Wyoming, Colorado and near the Arctic Circle, among other locations.

The Manufacturing Process All of Shakespeare Composite Structures Tuff-Poles and crossarms are protected with an integrated system of weather blockers.

UV absorbers are built into the basic resin formulations. Smooth poles have an additional resin-rich, non-woven, polyester veil cloth pole surfacing medium. All Tuff-Poles and crossarms have a thickness-controlled, UV-absorbing, polyurethane coating for further protection from fiber exposure. The result is a system approach to protection from weathering with scientifically tested, provable results.

Sunlight/UV Exposure Test Results Shakespeare Composite Structures tests its weather-blocker protection system in accordance with the American Society for Testing and Materials (ASTM) G154, Standard Practice for Operating Light and Water Exposure Apparatus for Exposure of Non-Metallic Materials using a fluorescent UV-condensation apparatus. The testing equipment is the QUV Accelerated Weathering Tester made by the Q-Panel Company of Cleveland, Ohio.

Shakespeare's tests use a UVA lamp with peak emission at 340 nm with a four-hour cycle, lamp on and off time. The UVA lamp intensifies the damaging UV component and with applied heat and intervals of water spray mimics a very severe Florida-level environment. Among scientists, Florida is the international benchmark for durability testing of materials because it is considered worst case and produces faster deterioration than in northern climates.

Under these conditions, Shakespeare composite poles and crossarms exhibited no fiber exposure, crazing, chalking or color change within a 2,500-hour test period. Further accelerated tests have substantiated our products' UV weathering abilities beyond 15,000 hours. Shakespeare has also conducted extensive accelerated testing by other means, including a 996-day test utilizing the EMMAQUA sunlight concentrating machine in the Arizona desert (ASTM G90-91 Procedure B). In addition, our engineers have been able to observe real-time, real-world weathering effects on our products that have been in service for more than 35 years.

Moisture/UV Exposure Test Results Using accelerated testing guidelines of ASTM G154, Shakespeare composite poles were exposed to saturated air and water vapor on one side of the specimens and cooling ambient room air on the other, further mimicking Florida's climate.

Under these conditions, the poles exhibited no fiber exposure, crazing, chalking or color change within an accelerated 2,500-hour test period.

According to ASTM D-2565, using a water-cooled xenon arc light source with alternating periods of water spray, the composite pole material underwent 7,000 hours of testing with no significant change in appearance.

Applications Shakespeare composite poles are currently resisting the adverse effects of the combination of UV rays and moisture in Florida, Hawaii, California, Mississippi and Texas, among other locations.