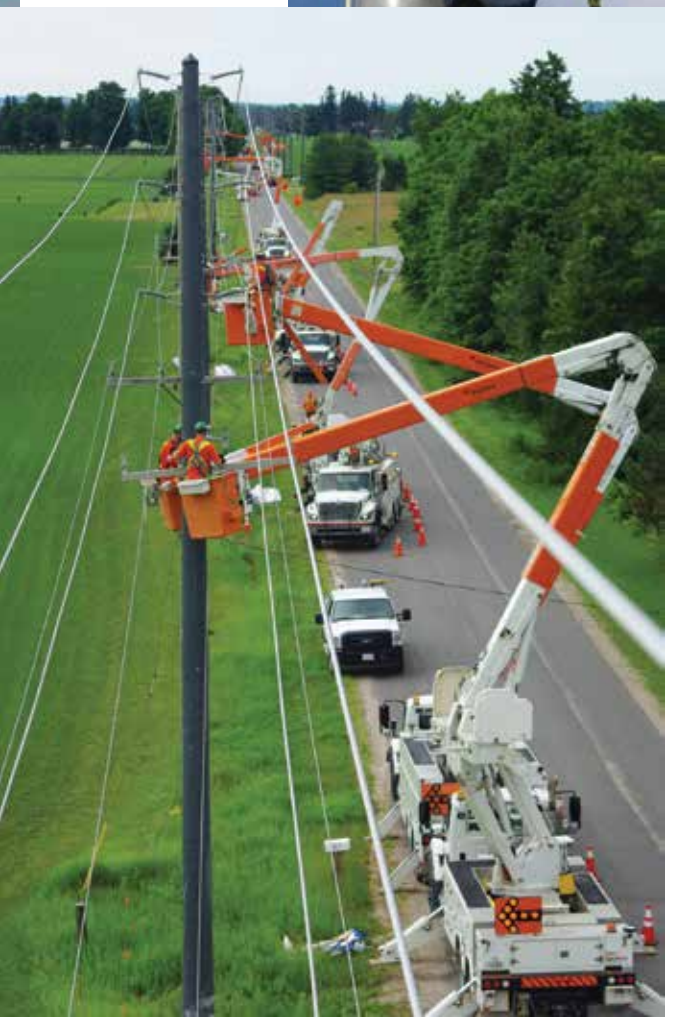
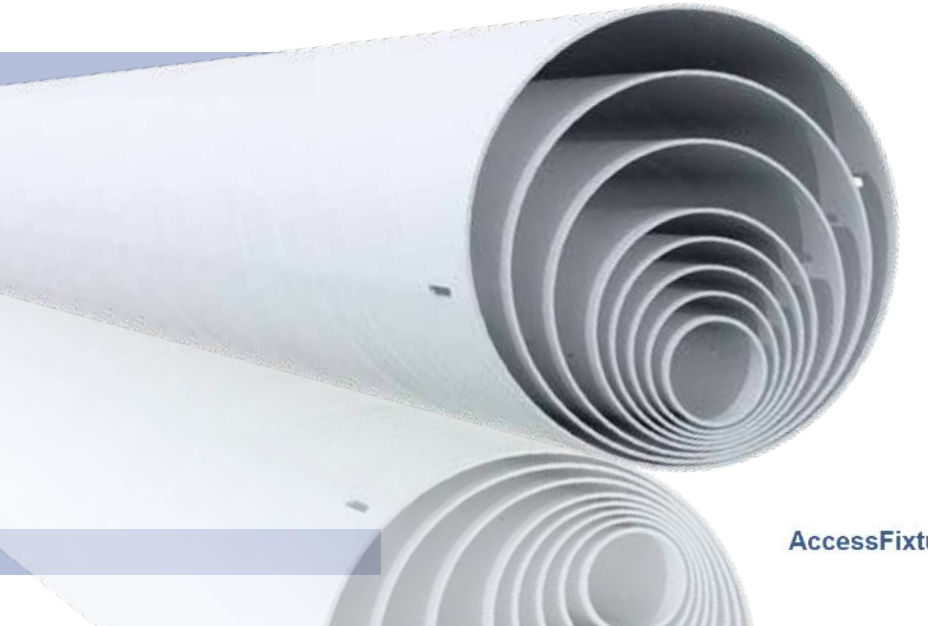
AccessFixtures
High-Performance Lighting Solutions

# Modular Composite Poles for All High Mast Lighting and Power Transmission Applications





- Longest service life
- Lowest logistics cost
- Zero maintenance

AccessFixtures.com 800.468.9925 Sales@AccessFixtures.com

AccessFixtures
High-Performance Lighting Solutions

# Access Fixtures high performance modular composite light poles provide a cost effective, reliable solution where environmental conditions, weight, physical access, lead time, aesthetics, transportation, high strength, enhanced safety or long service life are required for new applications or replacement.

Many light poles and power transmission poles were installed decades ago. Aging structures endure constant attack from rot, corrosion, woodpeckers and termites and are regularly challenged by ice storms, hurricanes, tornadoes, vandals and even vehicular impact.

Access Fixtures (AF) composite light poles and power transmission poles are the superior choice for ease moving to the installation site, faster and lower cost direct burial installation, environmental impact, longevity, and tolerance to calamity.

**Case Study:**
**Innovative Materials & Design**
These poles were chosen for Southern California Edison's "Circuit of the Future" – a project that utilized the most advanced, reliable utility products on the market.

## Our Pole Solution

Access Fixtures Composite Poles are constructed from combinations of standard-sized tubular modules to create poles with heights ranging from 30 ft. [9.1 m] to 155 ft. [47.2 m] that use standard industry hardware.

### Lowest Logistics Costs
- Industry best lead times
- Lower transportation cost
- Fast, easier, lowewr cost installation

### Lowest Liability
- Limited 41 year limited warranty
- Superior storm and high wind reliability
- Minimal environmental impact.

### Longest Life
- 80 year service life
- Integrated UV protection
- No scheduled maintenance



"The *highest performing* **Poles** on the **Market**"

Access Fixtures composite poles have been used by over 360 utilities worldwide, including installations in North America, Scandinavia, Europe, Australia, South America, Asia and the Caribbean.

AccessFixtures
High-Performance Lighting Solutions

## COMPOSITE MATERIALS

Access Fixtures composite poles are made from an advanced composite material with integrated UV protection that combines an ultra strong polyurethane resin and E-glass fiber rovings. The poles\can also be pre-drilled and pre-assembled.

## MODULAR DESIGN

Access Fixtures pole's unique tapered design enables the modules to be nested in compact bundles allowing for maximized efficiencies in storage and transportation. The eight module system can be configured to build virtually any pole class up to 155 ft. [47.2 m], which lowers the lead time for deliveries and simplifies transportation, handling and installation.

# ADVANTAGES

### Hardware Compatibility

Smooth surfaced hardware, without cleats or sharp edges of contact, should used with these poles and are commonly available for round cross-sectioned steel and concrete poles. Solutions like steel bearing plates can be supplied to enable the use of existing hardware.

### Superior Temperature Performance

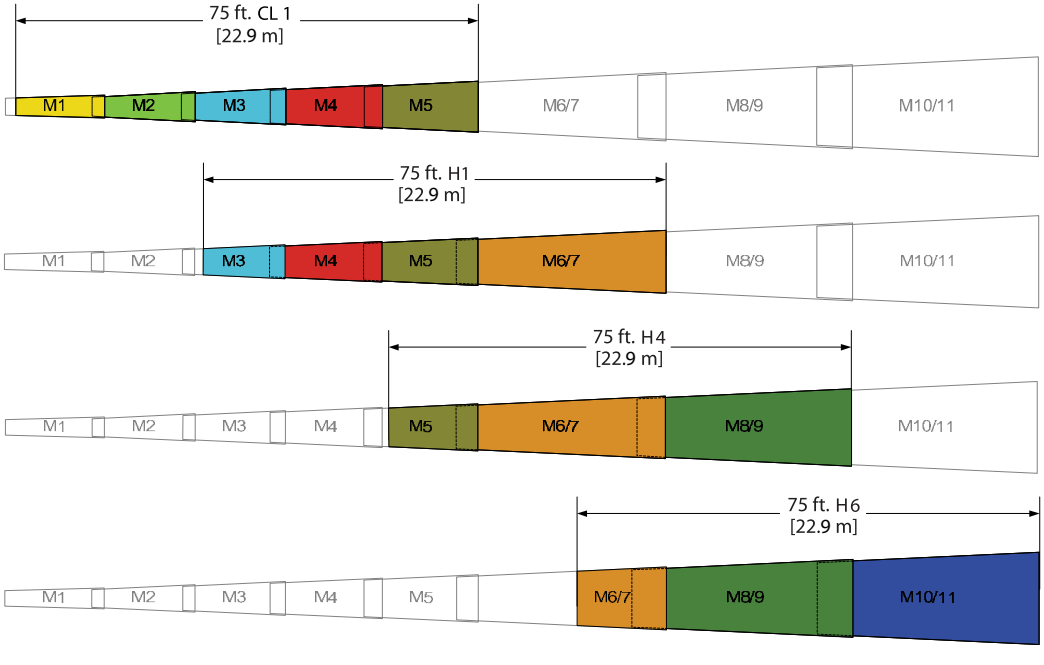
Composite material performs well in both hot and cold environments. The established temperature range is -76°F to +167°F [-60°C to +75°C].

### Fast Assembly

Pole slip joints assemble in approximately 10 minutes each, or with the assistance of assembly racks, entire poles can be completed in 15 minutes with a crew of four. Poles can be pre-drilled for specific framing patterns and/or pre-assembled prior to shipping to reduce installation time.

### Modularity

Custom length and strength poles are created from standard sized modules for ultimate flexibility. Below are different module combinations to build a 75 ft. [22.9 m] pole:



AccessFixtures
High-Performance Lighting Solutions

**Case Study:**
**Inventory Advantage**
"Having the ability to build a variety of pole lengths and classes from just eight modules gives utilities faster deployment time for emergency outages."

Utility Products, November 2006

## LOWEST LOGISTICS COST

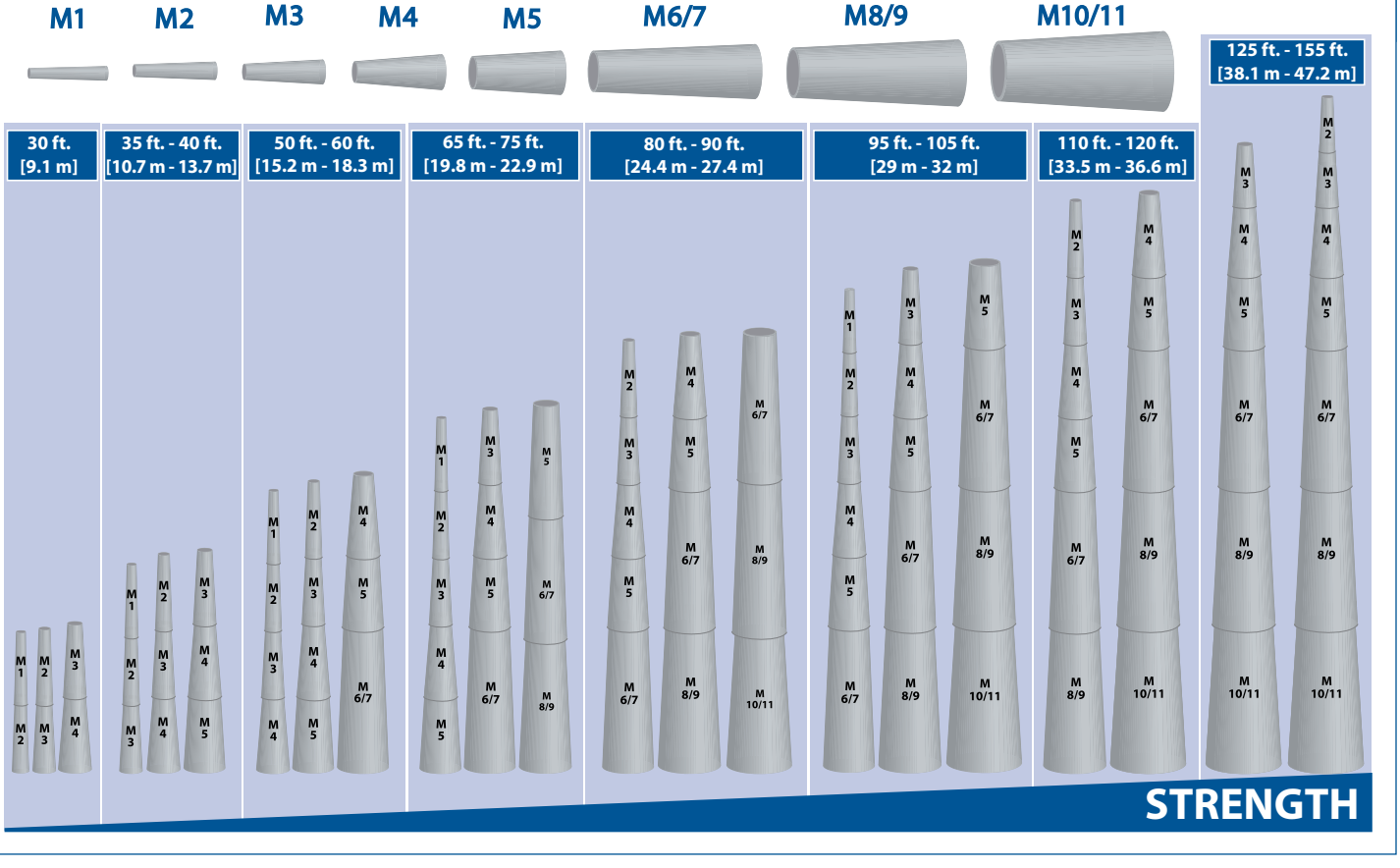
The pole's modular design offers the fastest delivery and lowest logistics cost of any sports light poles or utility pole, from the time the order is placed to the time the pole is installed.

## Industry Best Lead Times

A large inventory of modules and hardware which enables even large custom pole orders to be shipped within weeks. Standard production components and on demand production capability ensures reasonable delivery times for lighting or power transmission poles.

"***One Set of Modules*** can build ***262 Different poles***"

### Composite Modular Pole Combination Sampling



AccessFixtures
High-Performance Lighting Solutions








## Pole Capabilities From One Set of Modules

| Pole Length | 30 ft. 9.1 m | 35 ft. 10.7m | 40 ft. 12.2 m | 45 ft. 13.7 m | 50 ft. 15.2 m | 55 ft. 16.8 m | 60 ft. 18.3 m | 65 ft. 19.8 m | 70 ft. 21.3 m | 75 ft. 22.9 m | 80 ft. 24.4 m | 85 ft. 25.9 m | 90 ft. 27.4 m | 95 ft. 29 m | 100 ft. 30.5 m | 105 ft. 32 m | 110 ft. 33.5 m | 115 ft. 35.1 m | 120 ft. 36.6 m | 125 ft. 38.1 m | 130 ft. 39.6 m | 135 ft. 41.1 m | 140 ft. 42.7 m | 145 ft. 44.2 m | 150 ft. 45.7 m | 155 ft. 47.2 m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NESC Grade B Pole Class H6 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | | | | | | | |
| H5 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | | | | | | |
| H4 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | | | | |
| H3 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | | |
| H2 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | |
| H1 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 1 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 2 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 3 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 4 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| 5 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| # of Pole Capabilities | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 10 | 9 | 9 | 8 | 8 | 7 | 7 | 6 |

**Total Pole Capabilities = 262**

AccessFixtures
High-Performance Lighting Solutions

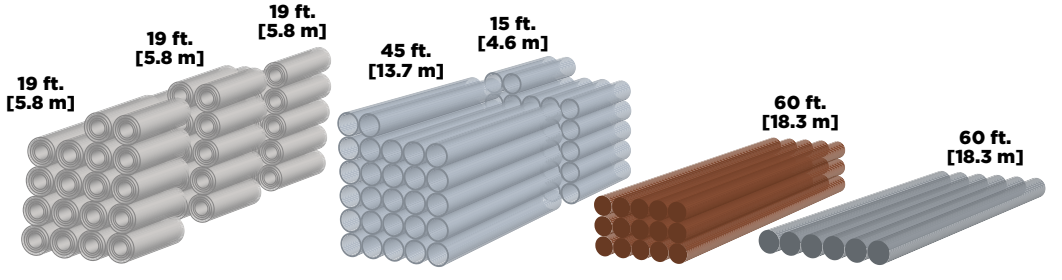
**Case Study:**
**Transportation Advantage**
"Compared to other poles we evaluated, these poles were the most cost effective. Transportation, assembly and installation was easier and less expensive than that of traditional poles."

Shawn Woon, Manager, Midlite Powerline Construction

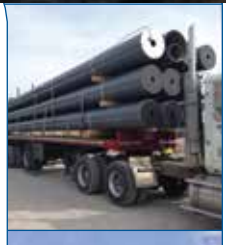
## Efficient Transportation

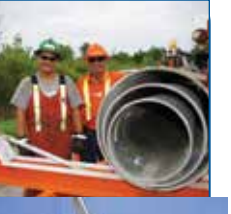
Access Fixtures pole nesting modules mean even the longest poles only require standard length trailers and they eliminate the need for slow and expensive long load permits. See the Truckload Quantity Comparison below to review the significant shipping efficiencies that can be realized with these poles. Depending on pole size, the modules can also be shipped and stored in 20 ft. [6.1 m] or 40 ft. [12.2 m] intermodal containers for international deliveries and quick deployment after natural disaster damage to the grid.

### Truckload Quantity Comparison
60 ft. [18.3 m] Class 1 Poles




| Composite | Steel | Wood | Concrete |
|---|---|---|---|
| 53 Poles | 27 Poles | 15 Poles | 6 Poles |





## Installation Flexibility

When setting the pole, in addition to using lighter duty machinery, modularity allows for installation sequencing options. The entire pole can be assembled on the ground and then installed. Alternatively, the base can be installed first and the remaining top modules added at a later time either one at a time or as a pre-assembled unit. Poles can be pre-assembled and pre- drilled to reduce on site installation time. On-the-fly line design changes to pole height and class are easily accomplished by simply adding or removing the desired module. Pole modularity also provides for simple circuit height adjustments, future system expansion and revenue generating joint use potential. Compared to traditional pole materials, smaller helicopters can be used to lift fully constructed poles for challenging location drops. The poles are easily cut and drilled in the field.

**Case Study:**
**Installation Advantage**
Norwegian utility NTE has calculated that the installed cost of composite poles is about 10% less than wood when span lengths are optimized and helicopters are used for installation.

AccessFixtures
High-Performance Lighting Solutions

# LOWEST LIABILITY

## Access Fixtures high performance composite poles reduce the risks and costs associated with managing lighting and utility infrastructure and increases reliability.

### Reliable Before and After Extreme Conditions

Access Fixtures ultra strong composite poles can absorb significant elastic strain energy in high-load situations like hurricanes, tornados, ice storms and seismic events. This capability delivers infrastructure reliability far beyond the expected performance of conventional utility pole materials. The exceptional load carrying capacity combined with the pole's light weight reduces the potential for cascade failures. Excellent fracture toughness protects against crack initiation and propagation. Additionally, AF poles are self-extinguishing and maintain the initial published pole strength values from full scale bend tests conducted after exposure to fire tests simulating moderate to severe wildfires.

### Increased Safety

Manufactured with a non-conductive and hydrophobic material, AF poles reduce the risk of second point of contact injuries, eliminate electrical tracking and help prevent arcing due to lightning or switching. AF poles pass the 100 µA test for a hotstick which makes live-line installations safer. Lightweight AF modules decrease the probability of worker injury and equipment fatigue. Hollow AF poles allow ground wires to be run internally to reduce theft potential.

### Environmentally Responsible

Access Fixtures poles are free of toxic preservatives common to wood poles and as a result they do not leach chemicals into the ground or water table.

Soil remediation is never required. To confirm they are inert, AF poles have been tested to ASTM C1308-08 Leach Test and the water used in the test subsequently passed both Canadian and US drinking water safety standards. The RS manufacturing process releases no volatile organic compounds (VOC) or hazardous airborne pollutants (HAP).

### Public Satisfaction

Access Fixtures controlled manufacturing process ensures a consistent lifetime aesthetic. AF poles are available in either grey or brown to match existing wood and steel poles or to blend in with the scenery. Custom colors are available. The surface of the AF pole is easily cleaned of graffiti and poster glue and is resistant to staples.

**Case Study:**
**Reliability**
"You can't beat the warranty. We like to use these poles to harden our infrastructure in critical, high value locations."
Steve Coltharp
West Kentucky EC

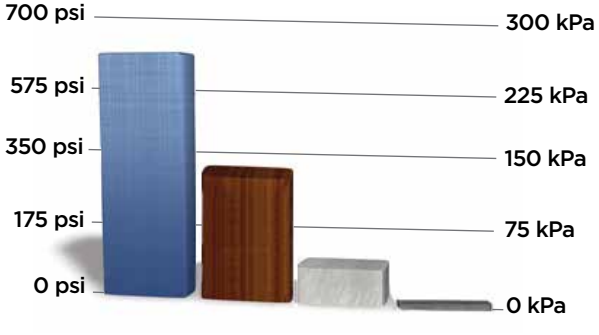
**Case Study:**
**Reliability**
Rio Grande EC had just finished installing a 34.5kV line when a tornado touched down. "We lost eight 40 ft. [12.2 m] Class 3 wooden poles. RGEC Operations reported that the composite poles that we installed in this area 'did not budge at all'."
Dan Laws
Rio Grande EC

**Case Study:**
**Non-Conductivity**
Composite poles were proven by test lab Kinectrics in Ontario, Canada to pass the test for a hot stick, making them one of the safest poles on the market.

**Case Study:**
**Environmental Advantage**
"These poles do not need to be coated with Penta, arsenic or creosote. As a result, these poles are the most environmentally friendly ones available in the market place."
NWPPA Bulletin, January 2006

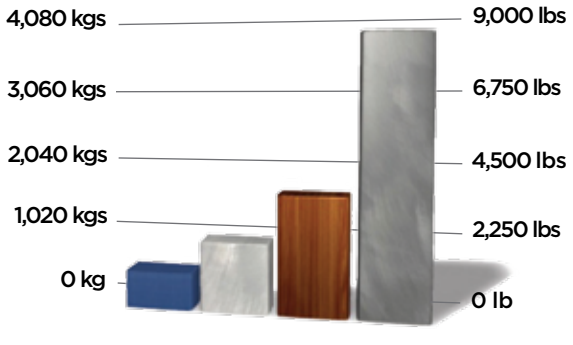
### Specific Strength Comparison

- AF poles: 630 psi.ft³/lb [271 kPa.m³/kg]
- Wood (Douglas Fir): 272 psi.ft³/lb [117 kPa.m³/kg]
- Steel: 119 psi.ft³/lb [51 kPa.m³/kg]
- Concrete: 7 psi.ft³/lb [3 kPa.m³/kg]




### Weight Comparison

- AF poles: 1,181 lbs [536 kg]
- Steel: 2,190 lbs [993 kg]
- Wood: 3,695 lbs [1,676 kg]
- Concrete: 8,500 lbs [3,856 kg]




75 ft. [22.9 m] Class 1 Pole



# LONGEST LIFE

## Manufactured with integrated UV protection and a durable composite material, Access Fixtures composite poles have a longer service life than any other poles.

### Excellent Weathering and UV Protection

These high performance poles are engineered for an 80 year service life that requires no scheduled maintenance. This extended life expectancy, tested to ASTM G154 for 14,000 hours, is achieved from a single step manufacturing process which creates a monolithic laminate with an imbedded layer of aliphatic UV protection that cannot be scratched or flaked off. AF poles retain their hydrophobic qualities over their entire service life ensuring that the poles continue to be self-washing and maintain their high dielectric strength. AF poles are covered by a 41 year limited warranty – see the Composite Pole Limited Warranty for complete details.

### Corrosion, Rot and Pest Resistant

Access Fixtures composite poles will not rot or corrode and are resistant to salt, soil pH levels and chemicals. This allows for excellent wet area and coastal performance. The poles are impervious to woodpeckers, termites and other pests. These performance advantages dramatically increase the pole service life and reliability of the lighting and/or grid.

### Maintenance Free Poles

AF poles require no scheduled maintenance, like preservative treatments or repainting, resulting in significant operational savings. Inspections are fast and non-invasive. Typical pole replacement frequencies are cut in half.

### Installed Cost and NPV Advantage

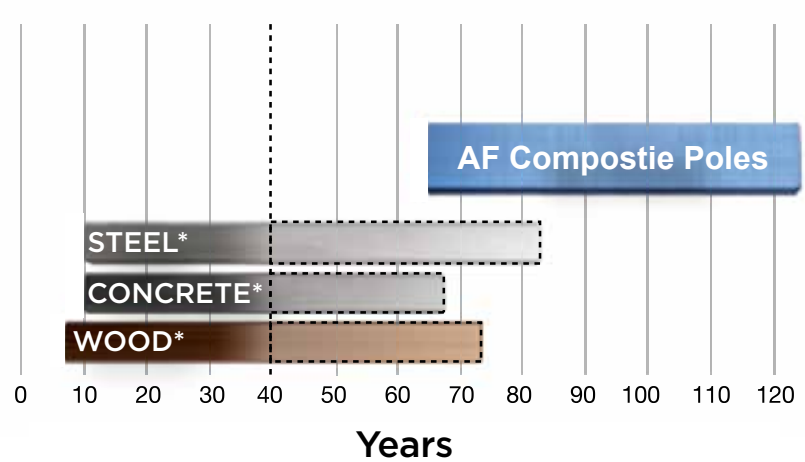
Access Fixtures poles deliver the lowest total ownership cost based on Net Present Value (NPV) calculations. For installations with challenging terrain, long length poles, remote locations or helicopter lifts, Access Fixtures poles can provide the lowest installed cost. Move beyond the material cost comparison and find out how much wood poles truly cost.

**Case Study:**
**Grid Hardening**

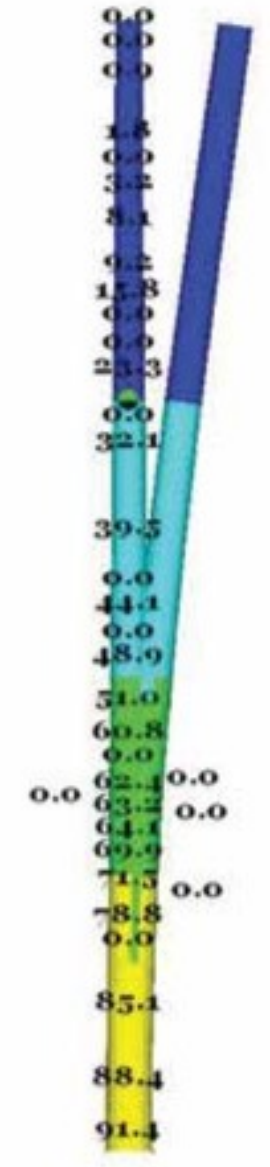
A major Canadian utility replaced a 400 pole feeder line to an automotive assembly plant with our composite poles to achieve the highest reliability and eliminate wood pole failures in storms.

LOWEST TOTAL OWNERSHIP COST

### Expected Service Life




*Grid infrastructure replaced at 2.5% annually
(100/2.5 = 40 year typical service life for traditional pole materials)



AccessFixtures
High-Performance Lighting Solutions

# WORLD CLASS CUSTOMER SUPPORT

To provide world class composite light pole performance to the sports facilities, industrial sites, transportation hubs, roadways, and ports, a qualified team of experienced engineers and representatives will work with you from preliminary planning to completion.

## Design Support

The technical department is involved throughout the entire process to ensure you chose the right pole for your application. Design support includes structural analysis for your application.

## Technical Binder

All technical information, available upon request and canis compiled in a single package containing the following. :

- Pole Data from 30 ft. [9.1 m] to 155 ft. [47.2 m]
- Structural Design Guide
- Hardware Guide
- Maintenance and Inspection Guide
- Technical Specification
- Module Testing and Quality Assurance Overview
- (MTQAO) Assembly and Installation Guide
- Frequently Asked Questions

## Application and Installation

Engineers will assist with project planning and assessment and are available to answer questions and provide support. Prior to commencing a project, they can complete a full hardware review and provide the necessary recommendations to ensure a long lasting, successful installation. On-site field support is provided during installation to ensure your field crews receive thorough AF pole training.

# LAB TESTED, FIELD PROVEN

The controlled manufacturing environment produces consistent pole modules each and every time for measured, reliable performance in your grid. You can count on it.

## Quality Assurance

ISO 9001:2008 certified - Maintains a stringent quality focus throughout the manufacturing process, from material inputs to production to order preparation, each step is monitored to ensure you receive the best pole on the market.

## Testing

All poles have been thoroughly full scale tested and verified to all relevant ASTM, ANSI and IEEE standards.

## Line Installations

Current installations are subject to extreme temperatures, corrosive environments, pest attacks, heavy loading and severe weather. All poles continue to deliver superior, predictable performance, without a single documented failure in over a decade of our pole installations.

**Case Study:**
**Hardware**

Non-cleated, flat surfaced hardware is required for these poles. In most cases, existing hardware that is compatible with concrete and round steel poles can be used on RS poles.

AccessFixtures
High-Performance Lighting Solutions

AccessFixtures.com 800.468.9925 Sales@AccessFixtures.com

AccessFixtures
High-Performance Lighting Solutions