



Shakespeare
A valmont. BRAND

BRACELESS ALLEY ARM

COMPOSITE BRACELESS ALLEY ARM

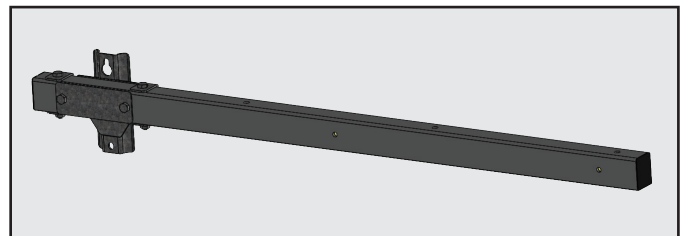
The new Shakespeare braceless alley arms are specially engineered crossarms which in the field are mounted to only one side of a utility pole.

With exceptional strength and durability, our alley arms are ideal for use in applications where space and easements are restricted. The braceless design, a first for composite crossarms, frees up vertical space on the pole, allowing for additional clearance.

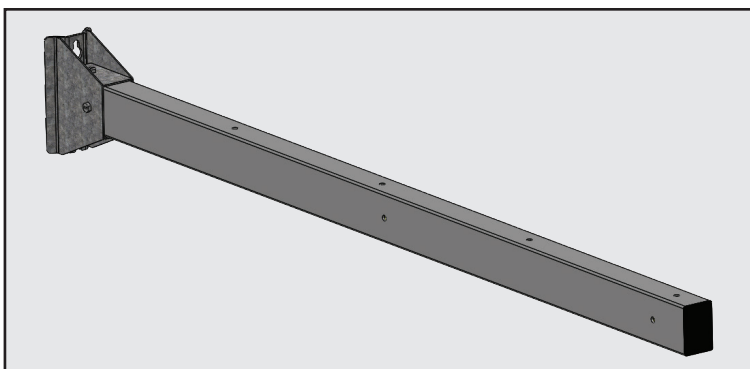
Utility decision-makers are increasingly demanding Shakespeare crossarms because the long-lasting composite material will never rust like metal, nor rot and splinter like wood.

SHAKESPEARE ADVANTAGES

- Lightweight - Easy to Install
- Environmentally Safe
- Triple UV Protection
- Excellent Dielectric Properties
- Standard Installation - No Special Tools Needed
- Ships completely Assembled with Hot Dipped Galvanized Hardware
- Impervious to Insects, Woodpeckers



HAB096N12302 - H-SERIES 3.5" X 4.5" X 96" ALLEY ARM ASSEMBLY



IAS120N12402 - I-SERIES 4" X 6" X 120" ALLEY ARM ASSEMBLY

OPTIONS

- Available in 3 Profiles
M-Series (3.5" x 4.5")
H-Series (3.5" X 4.5")
I-Series (4" x 6")
- Lengths to 12'
- Available in Gray or Dark Bronze
- Custom Drilling

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COMPOSITE STRUCTURES



Composite Braceless Alley Arm

REFERENCE STANDARDS

ASTM A153 (Zinc Coating); ADTM D635 (Burning of Self Supporting Plastics); ASTM G154 (Operating light and water exposure apparatus for non-metallic materials); ASTM D8019-15 (Determining the full section flexural modulus and bending strength of fiber reinforced polymer crossarms assembled with brackets).

WEATHER AND UV PROTECTION

UV inhibitors shall be added to the resin system and the outside surface of the crossarm shall be covered with a polyester surface veil to prevent fiber bloom. Also, the arm shall be coated with a minimum of 1.5 mils of UV resistant coating. Crossarms shall be tested for a minimum of 15,000 hrs. on the veil surface and 15,000 hrs. on the coated surface or a combined test of 30,000 hrs. with QUV-A per ASTM G154 with 4 hour light cycle and 4 hour humidity cycle.

FOAM FILLING

Crossarms shall be foam filled with a closed cell high density foam to prevent water ingress and must completely fill the crossarm and adhere to the inside walls.

MOUNTING BRACKET OR HARDWARE

Mounting brackets shall be manufactured from hot dipped galvanized steel using 50,000 psi steel. All bolts, nuts and other hardware to be hot dipped galvanized.

END CAPS

Crossarm shall be sealed with non-removable flush mounted endcaps. External caps are not acceptable.

MECHANICAL STRENGTHS

The ultimate strengths should be listed per ASTM D8019-15. Compressive strength in both the vertical and horizontal directions shall be a minimum of 500 psi without permanent deformation or damage to the fiber/ resin matrix.

ELECTRICAL CHARACTERISTICS

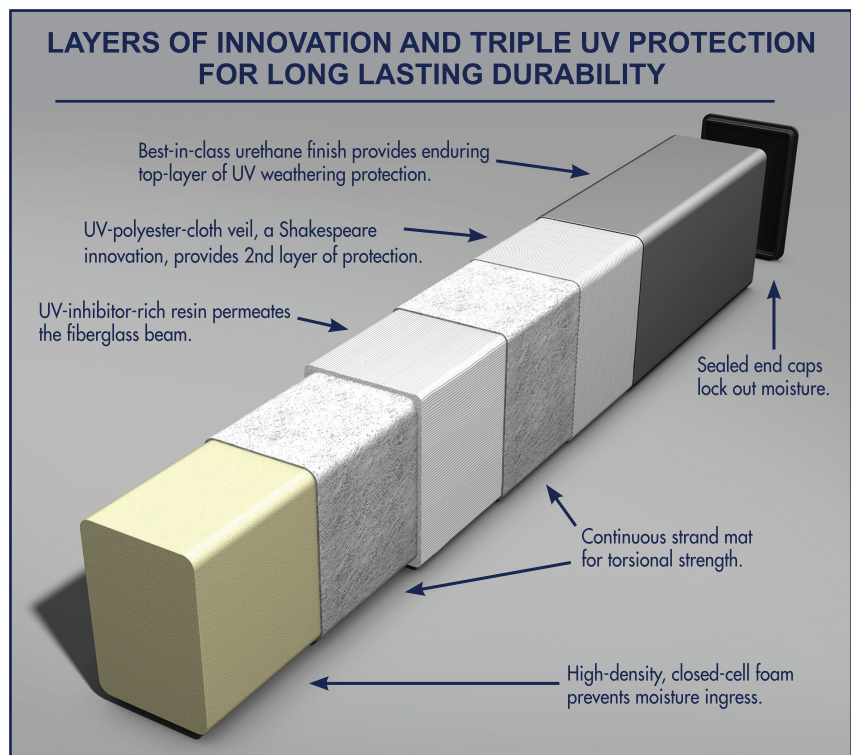
Fiberglass crossarms shall have an average 60 Hz BIL of no less than 15 kV/inch and an average wet 60 Hz BIL of no less than 12 kV/inch.

IDENTIFICATION

Each fiberglass crossarm shall be permanently marked with the manufacturer's name or logo and the date of manufacture.

PACKAGING

Fiberglass crossarm shall be shipped fully assembled.



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