



One Tough PUPI™

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## PUPI® Crossarm Mechanical Testing

Mechanical testing of PUPI crossarms has been performed at several independent test facilities including: EDM International, Fort Collins, CO; the Composite Materials Technology Center (COMTEC) at Winona State University, Winona, MN; and PFS Corporation, Madison WI. EDM specializes in testing services for the electrical power industry, COMTEC specializes in testing fiber reinforced composite structures, and PFS specializes in testing wood structures. Published strength and deflection data for PUPI crossarms are based upon extensive testing of PUPI arms performed at these independent test facilities.

PUPI test beams are taken as random samples from standard pultrusion runs. 10' and 12' arm flexure tests have been conducted at EDM; 5', 8', and 10' arm flexure tests have been conducted at COMTEC; pin torque tests have been conducted at EDM and COMTEC; and ASTM D198 tests (test for solid wood crossarms) have been conducted at EDM and PFS. Crossarm flexure tests for braceless tangents and deadends use PUPI mounts and attachment hardware.

Flexural test fixtures at EDM and COMTEC use two large I beams to support mounts for attachments to eyebolts on each end of a crossarm. Tests are conducted by applying a vertical load at a constant rate to the steel mount and measuring load versus deflection to beam fracture. Load/deflection plots are essentially linear to the fracture point for all PUPI crossarms. An example of a flexure test setup at COMTEC is shown here:



PUPI test methods closely replicate actual product service conditions. Test specimens are drilled with the same hole configuration as in the final product, production mounts and beam attachment hardware are used, and loads are applied at the same points as in the final product application.