PRODUCT OVERVIEW & SELECTION GUIDE

# GRIDCORE™
## COMPOSITE UTILITY POLES

AVIENT™

# INTRODUCING GRIDCORE™ COMPOSITE UTILITY POLES FOR ELECTRIC POWER DISTRIBUTION

GridCore™ Composite Utility poles from Avient are engineered to enhance grid resilience as a superior alternative to wood, steel, or concrete poles. Compared to traditional materials, fiber reinforced polymer (FRP) composites are more durable, require less maintenance, and provide a longer service life. They are also significantly lighter in weight, allowing for safer and simplified installation.

## GRIDCORE™ POLE TIP DEFLECTION UNDER WOOD POLE-EQUIVALENT ALLOWABLE CLASS LOADS[1] (IN)

| Pole Class | Pole Length (ft) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| C4 | 13 | 20 | 27 | 37 | 49 | 63 | | | |
| C3 | 17 | 24 | 34 | 47 | 61 | 79 | 100 | 124 | 152 |
| C2 | 21 | 30 | 42 | 57 | 76 | 61 | 77 | 96 | 118 |
| C1 | 25 | 37 | 32 | 44 | 58 | 74 | 94 | 117 | 143 |
| H1 | 19 | 28 | 39 | 52 | 69 | 89 | 113 | 140 | 172 |
| H2 | 22 | 33 | 46 | 62 | 82 | 106 | 134 | | |
| H3 | 26 | 38 | 54 | 73 | 96 | | | | |

## POLE TIP DEFLECTION COMPARISONS: GRIDCORE™ POLES VS. SOUTHERN YELLOW PINE

| Pole Class | Pole Length (ft) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| C4 | 35% | 40% | 45% | 50% | 55% | 60% | | | |
| C3 | 48% | 55% | 61% | 68% | 75% | 81% | 88% | 95% | 101% |
| C2 | 64% | 73% | 82% | 91% | 100% | 68% | 74% | 79% | 85% |
| C1 | 84% | 96% | 67% | 75% | 82% | 90% | 97% | 104% | 112% |
| H1 | 68% | 77% | 87% | 96% | 106% | 115% | 125% | 134% | 144% |
| H2 | 86% | 98% | 110% | 122% | 134% | 146% | 158% | | |
| H3 | 107% | 122% | 137% | 152% | 167% | | | | |

[1] Tip deflection is calculated at wood pole-equivalent allowable class load based on ANSI O5.1 and NESC Grade B construction strength factor of 0.65. Standard pole setting depth is 10% of pole length plus 2ft. Selections of Gridcore™ composite poles are typically deflection-controlled. We recommend limiting the maximum tip deflection to no greater than 10% higher than that of a wood pole (Southern Yellow Pine). For details, please contact Avient.

[2] All Gridcore poles listed in this table are of single-piece construction with a non-tapered cylindrical cross-section of 14 inch outer diameter.

Highlighted cells represent circumstances in which Gridcore pole strength satisfies wood pole-equivalent class load (allowable, Gr. B) but deflection of FRP pole may be greater than wood pole under the same load. All calculated pole deflections are average values per ANSI O5.1-2022. Wood poles are a natural material with wide variations in deflections. Many wood poles will deflect substantially more than the stated average deflection. Gridcore™ composite poles, on the other hand, are an engineered product and have more consistent deflection properties.

## GRIDCORE™ POLE WEIGHT (LB)

| Pole Class | Pole Length (ft) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| C4 | 707 | 795 | 884 | 972 | 1060 | 1149 | | | |
| C3 | 707 | 795 | 884 | 972 | 1060 | 1149 | 1237 | 1325 | 1414 |
| C2 | 707 | 795 | 884 | 972 | 1060 | 1691 | 1821 | 1951 | 2081 |
| C1 | 707 | 795 | 1301 | 1431 | 1561 | 1691 | 1821 | 1951 | 2081 |
| H1 | 1041 | 1171 | 1301 | 1431 | 1561 | 1691 | 1821 | 1951 | 2081 |
| H2 | 1041 | 1171 | 1301 | 1431 | 1561 | 1691 | 1821 | | |
| H3 | 1041 | 1171 | 1301 | 1431 | 1561 | | | | |

## POLE WEIGHT COMPARISONS: GRIDCORE™ POLES VS. SOUTHERN YELLOW PINE

| Pole Class | Pole Length (ft) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| C4 | 61% | 57% | 54% | 52% | 49% | 47% | | | |
| C3 | 52% | 49% | 46% | 44% | 42% | 40% | 39% | 37% | 36% |
| C2 | 45% | 42% | 40% | 38% | 36% | 51% | 49% | 48% | 46% |
| C1 | 39% | 37% | 51% | 49% | 47% | 45% | 43% | 42% | 40% |
| H1 | 51% | 48% | 45% | 43% | 41% | 39% | 38% | 37% | 35% |
| H2 | 45% | 42% | 40% | 38% | 37% | 35% | 34% | | |
| H3 | 40% | 38% | 36% | 34% | 33% | | | | |

## GRIDCORE™ CATALOG NUMBERS[2]

| Pole Class | Pole Length (ft) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 |
| C4 | X34B-DG-40C4 | X34B-DG-45C4 | X34B-DG-50C4 | X34B-DG-55C4 | X34B-DG-60C4 | X34B-DG-65C4 | | | |
| C3 | X34B-DG-40C3 | X34B-DG-45C3 | X34B-DG-50C3 | X34B-DG-55C3 | X34B-DG-60C3 | X34B-DG-65C3 | X34B-DG-70C3 | X34B-DG-75C3 | X34B-DG-80C3 |
| C2 | X34B-DG-40C2 | X34B-DG-45C2 | X34B-DG-50C2 | X34B-DG-55C2 | X34B-DG-60C2 | X34A-DG-65C2 | X34A-DG-70C2 | X34A-DG-75C2 | X34A-DG-80C2 |
| C1 | X34B-DG-40C1 | X34B-DG-45C1 | X34A-DG-50C1 | X34A-DG-55C1 | X34A-DG-60C1 | X34A-DG-65C1 | X34A-DG-70C1 | X34A-DG-75C1 | X34A-DG-80C1 |
| H1 | X34A-DG-40H1 | X34A-DG-45H1 | X34A-DG-50H1 | X34A-DG-55H1 | X34A-DG-60H1 | X34A-DG-65H1 | X34A-DG-70H1 | X34A-DG-75H1 | X34A-DG-80H1 |
| H2 | X34A-DG-40H2 | X34A-DG-45H2 | X34A-DG-50H2 | X34A-DG-55H2 | X34A-DG-60H2 | X34A-DG-65H2 | X34A-DG-70H2 | | |
| H3 | X34A-DG-40H3 | X34A-DG-45H3 | X34A-DG-50H3 | X34A-DG-55H3 | X34A-DG-60H3 | | | | |

# KEY PERFORMANCE ADVANTAGES

**Lower Total System and Lifecycle Cost**
GridCore Composite Poles have an expected service life of up to 80 years, compared to 30-40 years for wood poles. Considering the cost of replacing aged, damaged, and failed poles, the longer lifespan of an FRP pole results in total cost savings over the life of the pole.

**Lightweight and Safer Installation**
GridCore poles are significantly lighter than equivalent wood and concrete poles and can be installed using light-duty equipment and without expensive cranes. The poles have excellent dielectric strength that allows for safer installation near energized lines.

**Lower Maintenance and Resistant to Pests**
Also contributing to lower lifecycle cost, composite poles require only visual inspection and are not susceptible to damage from woodpeckers and insects, reducing maintenance and repair costs. Superficial damage can often be repaired on-site, using recommended products and procedures available from Avient.

**No Assembly Required**
GridCore pultruded composite poles are fully fabricated as one-piece, uniform diameter, requiring only one size through-bolt length, saving assembly labor in the field, and reducing outage time.

**Customized and Consistent Material**
Manufactured in a continuous pultrusion process, GridCore poles are engineered for consistent strength and uniform appearance and are not subject to warping, shrinkage, or splintering. Unlike wood they can withstand strong storms without breaking.

**Simple to Drill**
GridCore poles can be purchased pre-drilled, and they can easily be field drilled using a handheld cordless drill and recommended bits.

**For the latest product information, please visit gridcore.avient.com or call +1.844.4AVIENT.**

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