

7 Industries That Use Non-Metallic Enclosures

Non-metallic electrical enclosures constructed of fiberglass or polycarbonate materials are quickly becoming the material of choice for architects and engineers, general contractors, and electricians. Here are 7 industries that have made the shift to nonmetallic electrical enclosures, pull boxes, junction boxes, and device boxes.



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Outdoor Solar Energy Projects

Nonmetal enclosures play a huge role in solar energy installations as they not only protect electrical components from extreme weather events and ultraviolet rays, they also stand up well to extremes in temperature while providing an extra layer of flame-retardant protection. According to Energy.gov, "Since 2008, U.S. solar power installations have grown 35-fold to an estimated 62.5 gigawatts (GW) today. This is enough capacity to power the equivalent of 12 million average American homes."

Harsh Industrial Environments

Fiberglass enclosures provide the low weight and high strength characteristics required in an industrial setting, and they are low maintenance. Expect non-metallic electrical enclosures to resist color change, gloss reduction, or surfaced degradation even in the most challenging industrial environments.

Extreme Conditions in Oil Refineries

The environmental conditions in the oil and gas industry require the use of NEMA 4X non-metallic electrical boxes which are gasket-sealed to prevent the infiltration of hose directed water, as well as the extreme byproducts of converting crude oil into gasoline, diesel fuel, and jet fuels. Corrosion of electrical enclosures and junction boxes is so common in oil refineries that the American Petroleum Institute (API) recommends NEMA 4X electrical enclosures that are corrosion-resistant, stainless, and nonmetallic.



Easy Installation for New Construction

Polycarbonate electrical enclosures have the additional benefit of being inexpensive when compared to metal enclosures. General contractors also know they can save both time and money with polycarbonate boxes that have integral mounting flanges and integrated cable clamps that makes installations fast and easy. And since these enclosures and junction boxes are plastic, they don't require grounding. According to Automation World, "Nonmetallic enclosures are now spreading throughout the plant... increasingly being used to house equipment that tracks specific portions of the process, such as the number of cycles, error tracking, decision-making, maintenance, and reporting."

Watertight for Food and Beverage

NEMA 12 fiberglass electrical enclosures are preferred within high-speed, automated factories and are available with many options such as pre-punched holes, cutouts, lift-off hinges, insulation, latches or locks, and gasket-sealed against dust, falling dirt, fibers, dripping water and other noncorrosive liquids.

Corrosion Resistant in Wastewater Treatment

Non-metallic electrical enclosures are not prone to material deterioration from anaerobic sulfate-reducing bacteria that will attack the protective coatings on metal and concrete, leaving them vulnerable to corrosion by sulfuric acid that can shorten the lifecycle of electrical components.

Strong and Durable for Electrical Utilities

Non-metallic pull boxes and splice boxes located underground and above ground electrical are used to protect electrical wiring, fiber optic cables, telephone phone lines, and other wires or cables that are buried underground. The strength of fiberglass electrical enclosures means protection from cracked lids and sidewall deflection.