

STATEMENT Z

Use of Calcium Carbonate (CaCO₃) Additives in HDPE Conduit

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High-density polyethylene (HDPE) conduit is used extensively in the protection of fiber and power cable in applications such as telecommunications, broadband networks, cable TV, low and medium power distribution, and command/control. HDPE is also used for cable-in-conduit conductors.

For the production of HDPE conduit, polyethylene resins and color concentrates are blended in specific formulations and extruded into conduit and “innerduct”. The material Calcium Carbonate (CaCO₃) is often used as part of the formulation of color concentrates, in very small amounts.

HDPE conduit is produced to various industry standards such as ASTM F2160, ASTM D3485, NEMA TC 7 and UL 651A (See [PPI TN-50 “Guide to Specifying HDPE Conduit”](#) for more information about conduit standards). ASTM D3350 *Standard Specification for Polyethylene Plastics Pipe and Fittings Materials*, covers the identification of polyethylene pipe materials in accordance with a cell classification system, while the specific HDPE conduit product specifications define the properties of the polyethylene resins, and describe the minimum performance requirements for finished conduit products.

Other polymer raceway products, such as PVC conduit, may include the use of Calcium Carbonate (CaCO₃) as part of the formulation. When this is practiced, it is done so in compliance with relevant and appropriate industry standards.

However, for high-density polyethylene conduit, none of the current industry standards allow additives such as Calcium Carbonate in the material formulation, outside of that used in the color concentrate formulations. Furthermore, there has been no documented testing on the long-term physical or chemical effects of Calcium Carbonate as part of a HDPE conduit formulation.

Therefore, for reasons of long-term product safety and reliability, PPI recommends against the use of Calcium Carbonate (CaCO₃) additives in HDPE conduit formulations, with the exception of additives used in the color concentrate formulations.