

Use of Polypropylene/Polyethylene Fibers in a Dairy Barn Application

The use of polypropylene/polyethylene fibers in concrete became common practice in the 1980s. Fibers manufactured from these resins meet applicable specifications and codes that include ASTM C1116, Section 4.1.3 and Note 2 as well as ASTM D7508. Furthermore, ICC ES has established fiber use requirements in residential and commercial applications. State DOTs also have specifications for these fibers in highway/bridge applications. Finally, UL lists ABC Polymer Industries' macrosynthetic fibers for use in all composite deck cross-sections.

As to use in specific applications where the concrete is reinforced with these fibers where exposed to animal urine/food acids, there is a lengthy history. We have worked with **Dole** in the construction of their pineapple processing facility in Hawaii, as well as **Campbell** and **Hershey** as well as others in their food processing facilities. FDA approved the use of polypropylene/polyethylene fibers in concrete used in food processing and handling facilities back in the '80s.

The use of these fibers in zoos and other facilities exposed to animal urine goes back to the '80s. Our first exposure to this application was an elephant enclosure at the **Seattle Zoo**. This was a successful application as others in zoos across the country. We have also provided fibers for dairy and pig farms, with cattle guards being the everyday application.

The standard chemical handbook verifies that polypropylene/polyethylene fibers would survive in an animal urine application. Animal urine is classified as a nitric acid. The chemical handbook shows that in a 50% solution of nitric acid polypropylene/polyethylene resins will survive. For the record urine is approximately 90% water. These resins also resist potassium, which is the other major chemical component of urine.

The long positive track record coupled with the findings in the chemical handbook would strongly support the successful use of the ABC Polymer Industries' macrosynthetic concrete reinforcement system in dairy barn interior and exterior slabs-on ground.