Corrosion College

Knowledge-based specification of products combined with a solid maintenance plan reduces downtime at infant formula manufacturing plant.

In the food processing and packaging industry there are strict regulations to ensure food product safety including the critical need for proper wash-down and cleaning of equipment.

Due to direct exposure to water and chemicals used during wash-downs, equipment can corrode quickly. If corrosion is found in or near food, inspectors can delay production or shut down a plant, causing significant loss of time and money. In addition, undetected or untreated corrosion can cause early failure of equipment and supporting systems, thereby causing unacceptable cost increases.

In order to prevent unexpected system failures and instances of production downtime, corrosion must be prevented. Again, reliable protection against corrosion prolongs product life of equipment and machinery components, ensuring continued production and avoiding the high cost of replacement and repair. Of paramount importance, preventing corrosion improves overall food safety.

Corrosion discovered on lighting fixture by an electrical engineer in a food manufacturing plant shortly after graduation from Corrosion College. Immediate replacement of the fixture eliminated any potential danger of corrosion flakes falling into the food being processed directly below.

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Richard McGrath is a retired electrical inspector and formerly oversaw electrical maintenance for 11 years at a large infant formula facility. According to Mr. McGrath:

"One of my tasks was to conduct 'preventative maintenance' on all the machinery and systems pertinent to the production line. While performing this work, I witnessed the fact that the use of PVC coated conduit and fittings fared much better than uncoated or exposed ridged conduit. As a matter of regulations for food safety, all conduits in the designated areas are required to be corrosion resistant. We found that in areas not exposed to the product or cleaning agents, and not required to meet federal standards, it would be prudent to use PVC protected materials at the time of installation, in case that area was to be utilized at a later date due to expansion of production lines or processing systems, even if of a temporary nature."

McGrath's experience was not only helpful for ensuring safe and efficient operation of facilities and machinery, but also helped to solve longstanding problems that could have otherwise caused years of damage without the knowledge of facility operators. He explains:

"As an Electrical Inspector, I have found several instances of evidence of corrosion in underground installations. This intrigued me as to why some areas were subjected to this deleterious effect and others were not. In particular, at a renovation of a convenience store with fueling islands, it was revealed that the conventional conduit that runs to the pumps had suffered greatly from corrosion. Enough damage had occurred that a definite hazardous condition existed. It was determined that some seven years earlier a leaking underground fuel tank had contaminated the surrounding area. It was replaced and the site was deemed clean. When using conduit for underground burial, you always run the risk of corrosion due to the fact that the conduit is in two different environments (underground and above ground), which also means it is in two different electrolytes. This causes corrosion to occur naturally, but the fact that there were additional chemicals introduced into the environment made it that much worse."

Rigid metal conduit placed underground at a renovation of a convenience store with fueling islands, it was revealed that the conventional conduit that runs to the pumps had suffered greatly from corrosion. To learn more about corrosion and how to eliminate the cost associated with replacement of product due to failure – attend Corrosion College.

Mr. McGrath notes that professionals can now benefit from unique educational opportunities designed to provide professionals with knowledge-based tools necessary to overcome corrosion challenges. He states:

"I was fortunate to attend and graduate the CORROSION COLLEGE course. The course focused on learning the causes of corrosion via real-life case studies and provided proven methods for preventing corrosion including proper installation of PVC-Coated conduit."

This PVC Coated Conduit was installed with an uncoated GUA fitting, which could compromise the performance of the installation. When installing PVC Coated Conduit it is important to create a sealed system. Knowledge of PVC-Coated Conduit regulations and proper installation is essential for success of a project. Graduation from Corrosion College ensures your project will succeed in a corrosive environment.

CORROSION COLLEGE is two-day short course that provides solutions for the prevention of industrial corrosion through classroom and hands-on experience. Additionally, the course grants 15 Professional Development Hours participants upon successful completion. The course is accredited through national-recognized institutes of learning such as Purdue University, Kilgore College, the American Institute of Architects, and PDH Seminars.

"Without knowledge, nothing happens," he states: ***"Anyone who truly wants to win against corrosion needs to begin with that fact."***

Mr. McGrath is of the opinion that the proper selection of anti-corrosion products is the logical extension of knowledge. By way of example he cites the following based on his own on-the-job experiences.

"For the eleven years that I worked as the maintenance electrician at an infant formula facility, we used PVC-coated galvanized rigid conduit as a preferred product in fighting corrosion. Interestingly, though, it wasn't until several years later I expanded my knowledge of corrosion that I became aware of the fact that not all PVC-coated rigid conduits are created equally. While it is important that UL6 listings are needed for safety, it is also great to know that the ETL PVC-001 standard is available to evaluate product performance.

PVC-coated rigid conduit that has passed ETL performance evaluations is proven to have a product service life of ten or more times longer than brands that don't. Consequently, once I knew that fact I began specifying brands which are ETL-Verified. Not only did I specify them, but I refused to let anyone break those specs. I wanted the protection I had paid for!"

Mr. McGrath believes that knowing how to fight corrosion leads to the ability to specify proper products, but that using such products correctly necessitates a carefully planned maintenance program. He explains:

"We specified ETL PVC-001 Verified rigid conduit because it has a proven ability to withstand the rigors of daily wash-downs and helped enable us to keep our equipment running without the need for regular replacement or the risk of premature product failure. Dependability of this degree enables the third step in successfully dealing with corrosion, and that is the integration of the best available products with a solid, well-defined maintenance program. In that context, documented reliability will support all key objectives of benefiting dramatically from the long life cycle of a product that does what it is supposed to do." ♦

For more information about Corrosion College: CorrosionCollege.com

For more information about PVC-001 ETL-Verified brands of PVC-coated galvanized rigid conduit:
www.plastibond.com
www.permacote
www.korkap.com
http://youtu.be/6vBlc8rv8zA