

CASE

Soybeans are enormously important to the US both domestically and internationally. Soy is the leading U.S. agricultural export, valued at more than \$23 billion and annual US farm receipts total over \$40 billion. The beans are grown on 75 million acres and they comprise some 90% of US oilseed production.

The number one customer for soy meal are livestock farmers with 98% going to feed pigs, chickens and cows.

Production facilities handling the beans need robust coatings. In this case, involving a plant at the largest cooperative soybean processing company in the world, the client wanted a 'green' product.

Problem

The processing of soy beans is a mechanical process whereby beans are reduced to meal. There is substantial vibration and movement of vast volumes of product against concrete structures with additional stresses resulting from temperature changes. The client wanted not only a high performance coating, but also one that had exceptional grip on concrete surfaces and met with sustainability guidelines. They also wanted to keep production downtime to the absolute minimum with the minimum disruption to employees in the general area.

Solution

With regard to being in keeping with a client's sustainability policy, Ecodur is made of castor oil and gypsum. The oil is produced from castor bean plants and is renewable and the gypsum in the coating is potentially recyclable if it is recovered as it can be re-incorporated into the veggie plastic mix as Ecodur has the unique ability to re-bond to itself for the entire lifetime of the coating.

Additionally, on sustainability and 'green-ness' goals, Ecodur is completely free of toxic Volatile Organic Compounds commonly referred to as VOCs, and is also free of BPA and is completely non-toxic. It is also virtually odorless except for a mild hint of castor oil smell. It is rated for use in contact with potable water, and no solvents are used either in the application process, or clean-up.

The client also wanted a coating that would allow as rapid a return to production as possible as many conventional epoxy coatings require up to three days, particularly if the weather is very cold, slowing the curing process.



Application Results

The applicator, Coating Specialties, sprayed a 40 mls coat on the concrete containment area for the tanks. With no practical limitations on thickness, this also allowed for crevices to be filled.

The Ecodur formulation has over 20 years of prior history in protecting concrete in parking areas and its adhesion is approximately double that of conventional epoxy coatings. In tests it has even been shown to stick to Teflon.

The coating was touch dry in about 30 minutes which is the normal setting time, and the entire cure was also achieved in a standard period of 24 hours at which time it was given a final inspection and signed off ready for production throughput to resume.

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