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Case Study

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Apasco, Estado de Mexico cement plant North Mexico City.

The Problem

The belt damage consisted of a deep gouge along the entire length of the 460 foot belt. It was 5.5 inches wide and varied in depth from 1/16th to ¼ inches. The belt is made by Goodyear, 460 foot, 48 inch wide, fabric carcass with 4 plies. It has a 3/8th top and a 1/16th bottom. The damage went through the first two layers of fabric, and the third layer was exposed and deteriorating rapidly due to the highly abrasive nature of the material conveyed. The belt would need to be replaced within 3–6 months unless the protective rubber layer could be repaired. The belt cost over \$20,000 and was only two days old when the damage occurred so a viable solution for cost effective repair needed to be found.

The Solution

The plant was operational for 20 hours a day, 6 days a week. The repair needed to be completed in one day. Hot vulcanizing was not an option because it was too time consuming and expensive. Eli-Flex was considered the only viable option.

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The Apasco group is one of the largest producers of cement products in Latin America. The repair was done at the Estado de Mexico Plant north of Mexico City. The belt is a 460 foot, 48 inch wide, fabric carcass with 4 plies. It has a 3/8th top and a 1/16th bottom. The damage occurred 2 days after the belt was installed when large aggregate was jammed between the skirt and the belt.

The belt was worn through the first two layers of fabric carcass leaving the third layer exposed and very vulnerable to further wear. The total width of the damage was 5.5 inches, length was 460 feet. Fortunately the damage was 6 inches from the edge of the belt and not in a high load bearing area. The repair needed to cover the exposed fabric in order to maintain belt integrity.



A wire brush attachment was used on an industrial grinding machine that was set to the lowest possible speed. Care was taken not to melt the rubber or further damage the fabric of the belt. There was a lot of dust present so a solvent was used to clean off the area before the Eli-Flex was applied.

The easy to use packaging of the Eli-Flex product allowed for the exact amount of product to be prepared for each stage. The exact ratio of Epoxy to hardener is in the bag ready for mixing. There was no wastage due to product curing while the belt was being staged, cleaned and prepared.



Two people worked on the belt applying Eli-Flex, while the other spread the product evenly. There is no expansion or contraction which greatly simplifies the application because there is never any guess work about how much product should be applied. "What you see is what you get" Eli-Flex replaces the missing cover effectively protecting the fabric carcass from impact and abrasion.

Eli-Flex has the viscosity of toothpaste so it is easy to work on slopes, vertically and even upside down. Eli-Flex only requires 2 hours for every 2mm or 1/16th of depth of the repair. Eli-Flex cures to a Shore hardness of 60 – 65 depending on the ambient temperature. This superior elongation of 190% mean that Eli-Flex will not "pop out" when the belt wraps around the pulley