Vulcanization for Light Duty Belt

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A vulcanized splice is quiet in operation, will not mark the conveyed product, and is a strong, long-lasting splice. Its main drawbacks are related to the downtime and cost of installing the splice. Unlike mechanical splices, which require only basic mechanical skills and simple installation tools, vulcanized splices need highly skilled personnel to install the splices with expensive equipment. Due to these factors, the vast majority of vulcanized splices are installed by an outside crew…taking hours, if not days, to install a single splice.

To avoid this lengthy downtime, many users will keep spare belts for emergencies. Even so, since the belt is endless, the conveyor structure must be partially disassembled to install the belt, again leading to more downtime.

There are two basic methods of vulcanizing light duty belts. Belts with thermoplastic binders such as PVC, RMV (rubber modified vinyl) and urethanes lend themselves to endless fabrication because these materials flow together under heat and cool into a homogeneous mass. Fabricators typically install a finger splice into these belts, in which a dovetailing zigzag die-cut across both belt ends optimizes the edge-bonding area in between them. If belt thickness permits, a split-finger technique also separates the belt into upper and lower layers, with their finger-cuts staggered so bonding occurs between layers as well as between fingers.

Belts made of thermoset materials – including rubber, neoprene, Buna-N and some urethanes, which don't flow under heat – usually are made endless with a step splice, in which both belt ends are cut into steps at complementary angles, typically diagonal to the belt length, which overlay each other when the belt ends are drawn together. The step interface is bonded with an adhesive, either cold-set or heat activated.

Both endless-belt fabrication methods can produce long-lasting splices, but their downtime and cost factors need to be taken into consideration.

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