

REPAREX

Wear Resistant Coatings & Linings

Application Story: Largest Screw Conveyor Ever Lined With Wear Resistant Ceramic & Tungsten Carbide

At thirty five (35') feet long, with a shaft diameter of eighteen (18") inches this Refuse Derived Fuel (RDF) Screw Conveyor is the largest ever to be lined by Reparex with high alumina ceramic tile and tungsten carbide. The twenty-eight (28) flights were variable pitched and had a twenty-six (26") inch diameter. There were eighty-seven (87) digger teeth located on the outside diameter of the screw flights. The digger teeth were three (3") inches long and one (1") inch in height, equally spaced 102° apart. The teeth clean long stringy refuse material that the smooth screw flights would not be able to feed. The screw operates in a live bin bottom, underneath a storage hopper and acts as a material feeder.



All twenty-two thousand (22,000) ceramic tiles were applied to the screw using Reparex's AeroTech Bonding Technology. This technology combines specialty structural adhesives and a proprietary process to form a superior lining that cannot be achieved through traditional ceramic application methods. Notice the center section of the screw shaft is completely lined with high alumina ceramic tiles to protect it from the material feeding from the hopper above. Brazen tungsten carbide was selected for the digger teeth because of their potential to see high impact wear. In combination this hybrid lining solution has provided the customer with the optimum wear protection for this application.



The screw conveyor was originally fabricated from AR plate and hard-faced with a weld overlay on the flights, shaft and digger teeth. This hard-facing was lasting only about six to nine months before reapplication was required. This re-application of the hard-facing weld overlay was an expensive process in itself, but the real concern for the plant was the downtime associated with maintenance on the conveyor. With the new AeroTech Bonded ceramic and tungsten carbide lined screw the plant anticipates it will not require maintenance on the screw conveyor for at least another three to five years.

Reparex is a provider of wear resistant coatings and linings that are specifically selected and designed to extend the productive life of material handling equipment, thereby reducing plant downtime and maintenance costs. With more than 30 years of experience, we are expert in providing retrofit replacement parts for your existing equipment. We can offer you new components or we have the capability to rebuild and refurbish old components with new abrasion resistant properties. With our machining and grinding capabilities we are able to provide lined or coated products finished to precision tolerances. Material properties, engineering tolerances, attachment methods, and material costs are all considered in a Reparex solution. Our major strength is our ability to provide the right lining or coating to meet the demands of virtually any environment. We offer our customers a one-stop-shop for superior wear systems that eliminate frequent downtime for repairs and substantially extend the service life of your equipment. We specialize in Rotary Airlocks, Screw Conveyors, Fan & Blower Housings, Fan Blades, Pumps, Elbows, Valves, Mixers & Blenders, Agitator & Mixer Blades, and Various Pneumatic Conveying Equipment.

