

Extreme Coatings™

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Case History # 2005-2

Severe Abrasive Wear

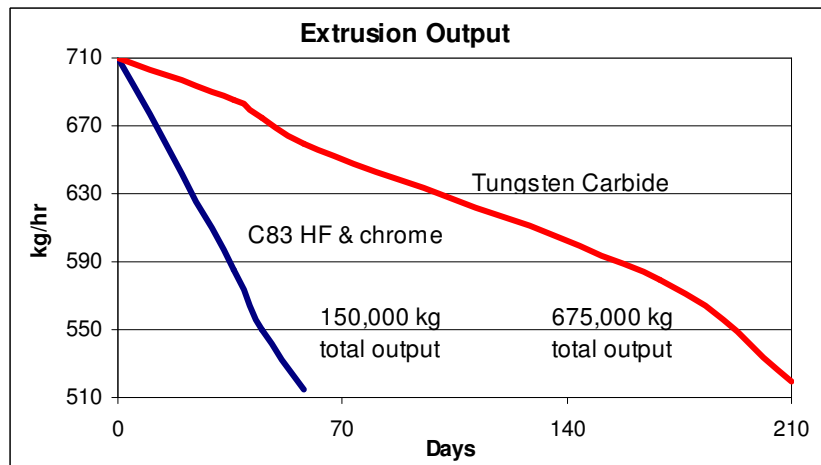
Extrusion

A manufacturer of extrusion equipment approached Extreme Coatings for help to solve a high wear issue with one of its customers. This proprietary process coats paper with a thin, uniform film of highly filled (iron ferrite) polymer. This film is later magnetized to create a printable paper with a magnetic backing.

Line speed is critical to quality film deposition and this dictates when a screw and barrel system is out of tolerance. When an uneconomic rate results the feed screw is removed and rebuilt. A 2-1/2" extrusion screw with C83 hard facing and chrome plating lasts about 70 days in operation. Total production at this point is about 150,000 Kg of material processed.

Extreme Coatings applied their XC9000 Millennium carbide which is designed to combat fine particle abrasion. The screw is 2-1/2" (63 mm) with barrier flight and mixer. Coating thickness was .010" (0,125 mm) with a mirror 16/32 (0,4- 0,8 Ra) finish. This screw was installed in July of 2005.

The coated screw processed for a total of 210 days until output rate became uneconomical. Total wear in the barrier/compression section of the screw was 0.28" (0,7 mm) and the screw was stripped of remaining tungsten carbide to be rebuilt and recoated with XC9000.



The customer was very pleased with triple the wear life of their previous screw. Most importantly, total output for the coated screw was 675,000 Kg of material, a 25% increase over the previous feed screw. (See graph) By maintaining a close tolerance between the screw and barrel, this extrusion system operated more efficiently for a longer period of time resulting in higher total outputs.