

TECH 18

For Textile Industry, Zinc Diecasting, Printing, and Any Place That Wear is Caused by Sliding Surfaces Plus Chemical Attack

CHEMICALLY BONDED INTO SUBSTRATE

TECH 18 is a significant advance in surface engineering technology. The surface of a metal part is first modified to harden the outer surface of the metal and form a unique, porous oxide on the surface. Then we fill the porosity with ceramic. During the fill process, chemical reactions are created that cause the ceramic to be chemically bonded to the substrate material. The bonding creates improved surface strength, hardness, corrosion resistance, and surface "friendliness."

HARDNESS

TECH 18 ceramic has a Vickers hardness of 2850. Comparatively, various steels can range from 200 to 800 Vickers (20 to 64 Rockwell C). The microscopic crystals of ceramic, chemically bonded together, form an extremely hard surface which resists wear and particle pull-out. A unique feature of the **TECH 18** process is the ability to harden the metal underneath the ceramic. This metal hardness measures 1000 Vickers (70 Rockwell C, and withstands higher loads without deformation compared with untreated metal.

THICKNESS OF ONLY .0005 INCHES

TECH 18 can be chemically modified to engineer the surface for unique applications, such as non-wetting of molten metals and glasses, low friction to man-made fibers, catalytic to process streams, and numerous other properties. These added qualities are achieved with nominal buildup.

ID AND OD SURFACES

TECH 18 application techniques allow this process to be performed on most surfaces, including inside diameters as small as 0.1 inches by 26 inches long.

EXTRAORDINARY WEAR RESISTANCE

TECH 18's combination of chemical bond strength, high particle hardness, low friction and corrosion resistance results in exceptional wear resistance. For example, when an abrasive fiber is texturized in a **TECH18** processed entanglement jet, life increases of 1000% and more have been realized.

- Hardens outer .0005" of substrate to 70Rc
- Increases measurable coating hardness to 2850 Vickers (>85Rc)
- Creates exceptional wear-resistance in low-load conditions
- Can be applied to ID and OD surfaces
- Reduces friction

TECHNICAL DATA

HARDNESS	2850 Vickers
BOND MECHANISM	Chemical
BOND STRENGTH	Over 10,000PSI
THICKNESS	.0005 Inches
COEFFICIENT OF FRICTION	<.2 Against fibers



111 K-Tech Lane, Hot Springs, AR 71913
Phone 501 760-1696 Fax 501 760-1695