

## SOME BACKGROUND ON USING A MICROMETRIC GAGE TO MEASURE PROFILE

### **What replica tape is:**

Testex Press-O-Film replica tape consists of a layer of crushable plastic microfoam coated onto polyester film of highly uniform thickness.

It is sold in a number of grades to accommodate measurements in different profile ranges.

### **Why determination of profile is important:**

Industrial steel in bridges, ships, railcars, etc., is almost always painted or otherwise coated to prevent corrosion. Before they can be painted, these metal surfaces must be cleaned and roughened to insure that the paint adheres, this is usually done by grit or shot blasting the surface. If the resulting surface is too smooth, the paint or coating will not stick. If the surface is too rough, the peaks poke through the coating and rusting occurs.

### **How replica tape allows field (gage) measurement of profile:**

When compressed, by "burnishing," against a surface, the foam collapses to about 15% of its pre-collapse thickness. After compression, the foam acquires an impression of the surface against which it is burnished. The highest peaks on the original surface displace the fully compressed foam and come to rest against the polyester backing. The deepest valleys on the original create the highest peaks in the replica. Consequently, the thickness of the compressed tape equals the average maximum peak-to-valley profile plus the thickness of the incompressible polyester substrate. A spring-loaded micrometer gage is used to measure the thickness of the replica.