

SUMMARY

The term "metal finishing" covers a wide range of techniques for the treatment of metallic articles. These techniques give the product a surface which makes it suitable for its intended service conditions as well as providing an attractive appearance.

All field data have been collected from the PWV area where it is estimated that 46% of South Africa's metal finishing operations are located. The electroplating, anodising and phosphating processes have been identified as the most water-intensive of this group; approximately 50 separate factories conducting one or more of these processes have been visited.

Specific Water Intake (SWI) was found to vary from 0,03 to 1,25 m³ per "effective" m² of surface treated. Many simple yet effective methods are available to reduce water intake, primarily involving minor modifications to the existing plant. Target SWI's should be set at 0,1m³/m² "effective" surface for operations treating in excess of 10 000 m²/month; 0,2 m³/m² is more realistic for factories treating less than 10 000 m²/month. Results indicate that a uniform target may be set for all three processes.

Specific Pollution Loads (SPL), based on total dissolved solids, were found to vary considerably within each process. Since the bulk of pollution from metal finishing operations derives from dumping of process solutions, it is suggested that initial efforts at curbing pollution be directed at these discharges.