NEW TRENDS IN FINISHING

THE finishing industry is developing new processes and techniques which are not only remarkable but also practically unknown a decade ago. Under the caption "Finishing Ways Merge", the Metal Finishing Journal, Vol. 10, 342, 1964 writes as follows: "Electrodeposition is tending to become something of a hybrid process nowadays in that some astonishing things are being plated. In Russia, strontium titanate has been electrophoretically deposited from a methyl alcohol solution to produce mechanically strong films of high dielectric constant after heat treatment. Another more unusual technique involves the use of electrodeposited bitumen coatings for oil-well casings. An emulsion of bitumen is used and this is circulated between the casing and the bore well while the current is applied, giving a continuous protective coating on the outside of the casing. The interest here lies in the fact that there is no other practical way of doing this. Car bodies and the insides of petrol tanks are, as is well known, now being electrophoretically painted on a production scale with very good results. The trend looks like continuing, and we may well find in the future that the sharp line of demarcation between electroplating and organic finishing will become increasingly blurred."

Electrodeposition of paint results in a 'dip coat' that faithfully follows contours; a way to paint complex shapes easily; a high-production method for eliminating corrosion in inaccessible areas. Savings in paint and labour costs can be effected, and close control maintained. Despite the advantages electrocoating is, of course, not the solution to all difficult metal coating problems. Workers in the USSR have succeeded in using electrophoresis for depositing ceramic coatings on copper wire and other articles such as tubes and cylinders. A new method of aluminizing steel, by electrophoretic deposition of aluminium powder, with subsequent rolling and sintering, has been developed by BISRA under the name 'Elphal'. In addition to its excellent forming properties and resistance to atmospheric corrosion, the coating will be very useful for high temperature applications.

The fluidized bed dip coating method is rapidly expanding. Paint manufacturers making plastic powders for use in fluidized bed are beginning to refer to their formulations as 'liquidless' paints. This technique has been extended for coating refractory alloys, for application in turbine blades, rocket nozzles and re-entry space vehicles. Developments in inorganic coatings for high temperature service will no doubt eventually expand markets for the chemical and metallurgical industries, furnace parts, and in other fields. The frontiers in the finishing domain are fast changing.

— T. L. R.