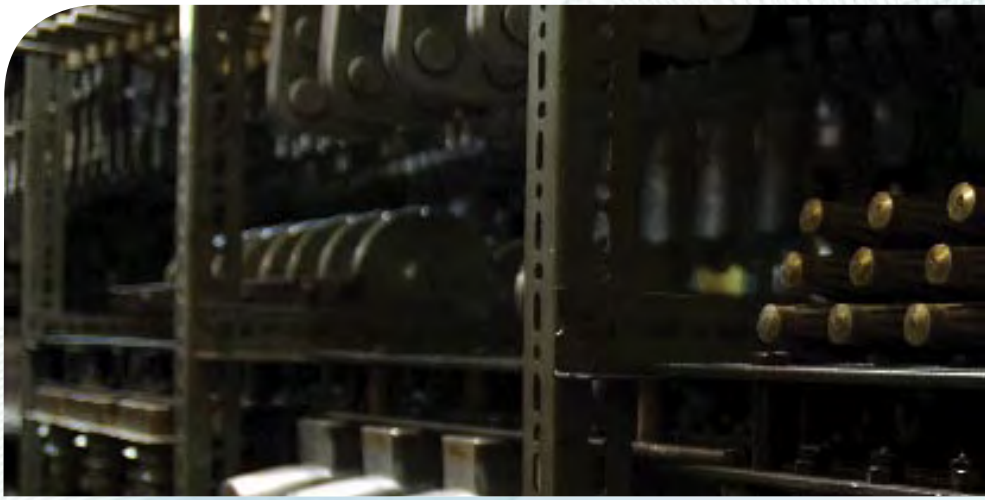
Dip Moulding

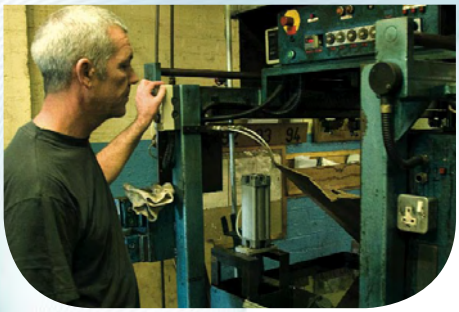
plasticmouldings

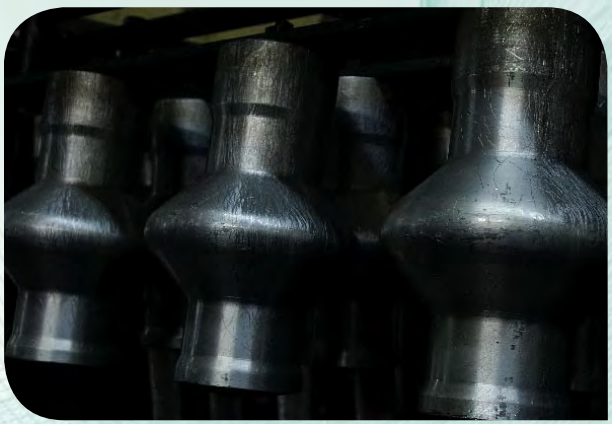
Plastic Mouldings is the principal custom dip moulder in Europe. We have been a leader in the development of the process and its applications for over 40 years. We have our own toolroom from which we develop concept prototypes and manufacture production tooling.

A substantial number of our employees have worked with us for over 35 years. Consequently, a major asset of our company and available to our customers, is a reservoir of specialised technical know-how about the process of dip moulding

Our quality assurance procedures have been approved by all our major customers, who include leading names in the automotive, electrical and mechanical engineering industries.



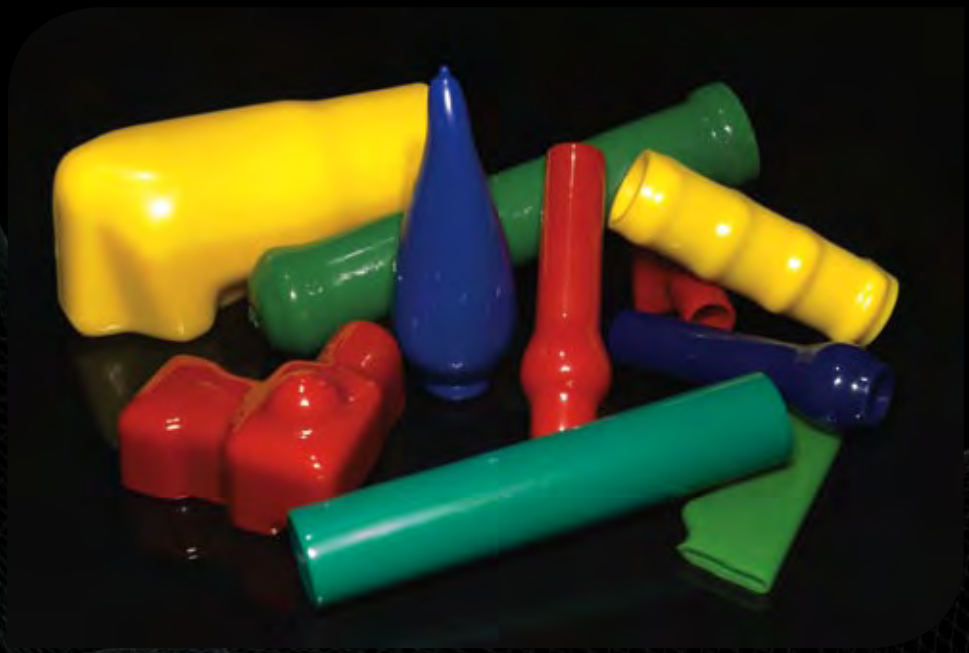




Dip Moulding

Dip moulding is essentially a technique for the economical production of flexible and semi-rigid PVC components. Often used for mass production, it is particularly suitable for medium and small quantities. A related but somewhat different technique is used for the production of Chloroprene (Neoprene).

The process needs only simple aluminium tooling, shaped by machining or casting, to the internal dimensions of the required moulding. It is because such tooling is inexpensive by comparison, for instance, with injection moulding, that small and medium quantities can be produced economically. Complex shapes can be moulded allowing considerable design freedom. The natural finish of the mouldings is smooth, glossy, textured or matt and shows no tool split lines.



As an undertaking of our total commitment to produce the highest quality custom mouldings we are certified to ISO9001.2000 Certificate No. GB95/5899. We will continue to implement this standard as a minimum level carried out by a Quality Control Manager and an experienced team of inspectors.

Our technical team

As a member of the Plastic Industries Group of Companies we employ a number of technical sales engineers having considerable knowledge of dip moulding and our other processes. Please telephone 01294 278091 to arrange for the nearest one to visit you.

In many European countries we employ experienced manufacturers agents.

Design and development service

Most well designed products start with the germ of an idea, which is where we need to be, helping in the initial concept stage. It is our belief that a partnership between customer and supplier results in a successful product. We like to become involved in the early design process, where necessary taking on the responsibility of developing prototypes to customers' specifications, through to producing CAD detailed drawings for final production.

With a wealth of knowledge gained over many years in the manufacture of high quality technical plastic and rubber mouldings, we are in the unique position of being able to offer our design and development service that will meet the requirements of our most demanding customers.

CAD capability

We currently operate a production solid modelling application, Solid Works, to meet our tool design requirements in-house. This allows us not only to be involved in the design the component but also supports the export to IGES files to Sub-Contractors with CAD Systems for CNC Milling and also STL files for rapid prototyping machines. The 2D detail drawings can also be saved in AUTO CAD compatible format, a useful feature for interfacing with customers already using this application.

The complete list of file translations available to us:
IGES, STL, DXF, DWG

We also have the capability to generate presentation quality representations of any part, with full surface detail suitable for early stage development prototype work.

Material performance

PVC plastisol - the principal material used in dip moulding consists of PVC polymer suspended in a plasticiser to which is added stabilisers and pigments.

Tensile strength and elongation at break

Tests were conducted generally in accordance with the appropriate section of BS 2782.

Average results were as follows:

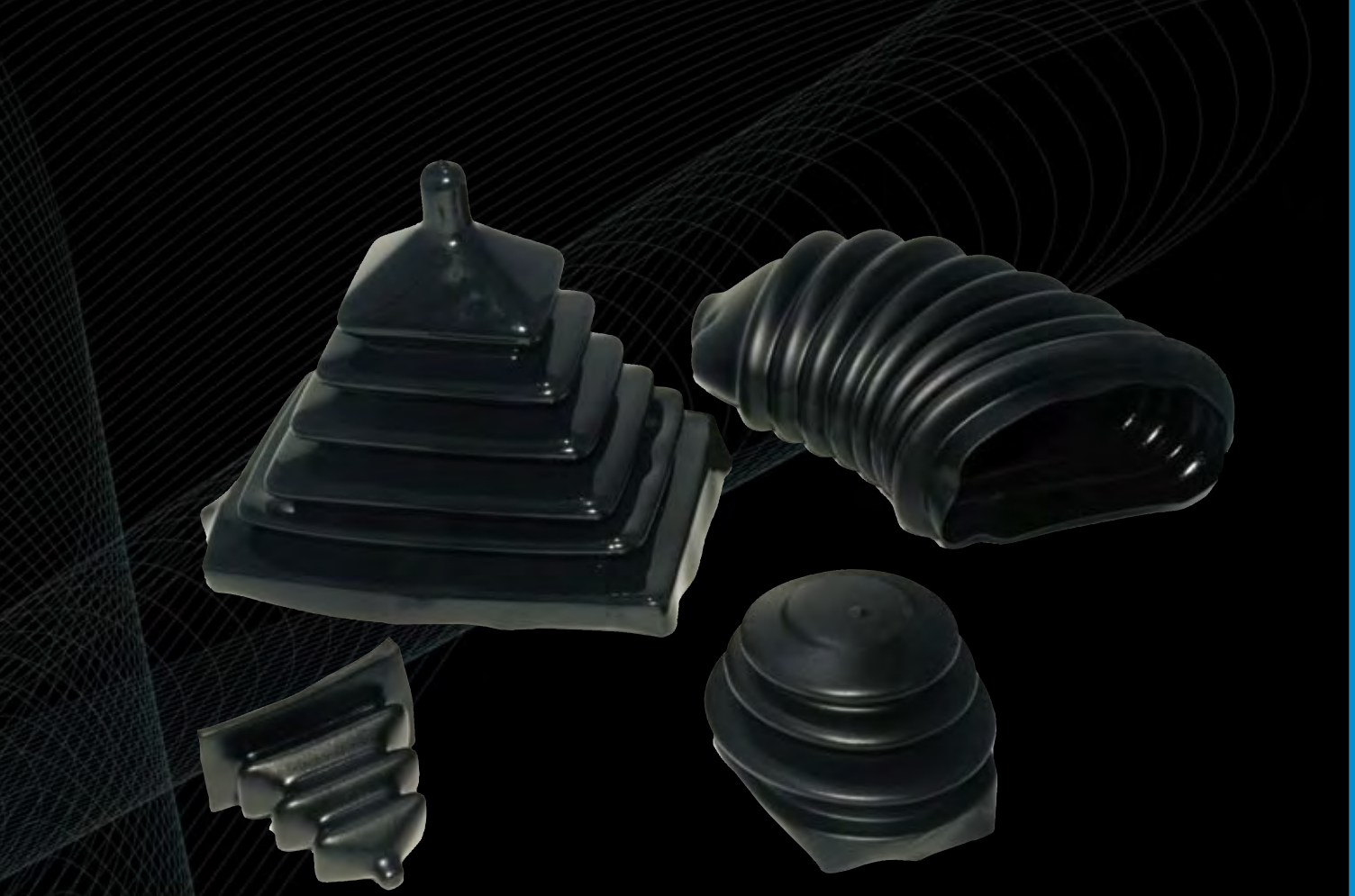
Material grade ref.	Hardness Shore A	BF softness number	Specimen temperature	Maximum stress MN/m2	Percentage elongation at break
PDM100	55	85	23°C	9.6	473
PDM100	55	85	65°C	9.4	460
PDM102	75	45	23°C	14.1	398
PDM102	75	45	65°C	13.6	400

Tear strength

Tests were carried out at 23° C generally in accordance with BS 903.

Average results were as follows:

Material grade ref.	Hardness Shore A	BF softness number	Tear Strength
PDM100	55	85	27.4
PDM102	75	45	50.6



High temperature performance

Mouldings made from plastisol soften and become more elastic with increasing temperature. We would not recommend the use of mouldings produced from general grades of plastisol at continuous temperatures above 65°C. However, as shown in the table on the opposite page, specialised grades such as PDM 100 HT are available and there can be used at continuous temperatures up to 90° C, with interminttent use at higher temperatures.

Electrical Insulation Properties

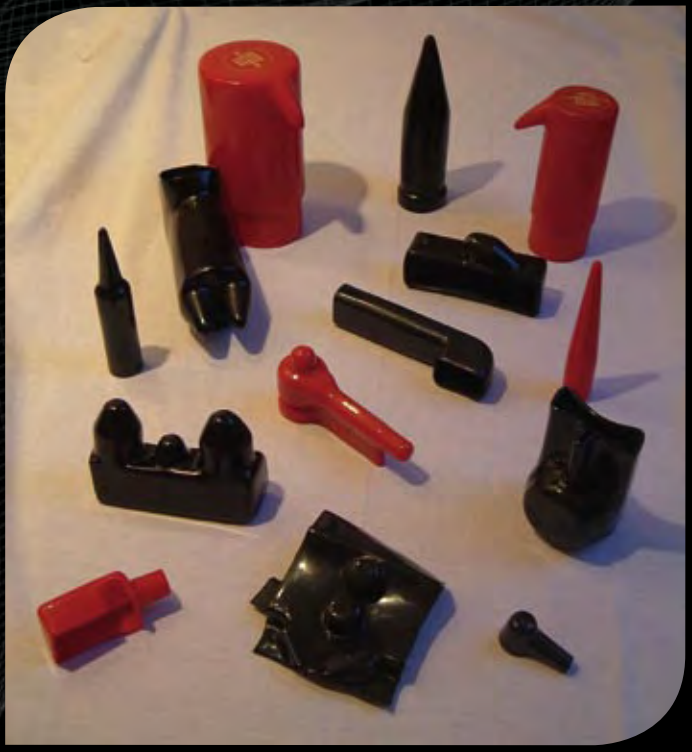
Tests were carried out in accordance with BS 2782:202A and 203A.

Average results were as follows:

Material grade ref.	Hardness Shore A	BF softness number	Surface resistivity (Ohm)	Volume resistivity (centimeter)
PDM100	55	85	1.3 x 10 (12)	5.0 10 (10)
PDM102	75	45	1.2 x 10 (12)	3.3 x 10 (11)

Chemical resistance

PVC plastisol - the principal material used in dip moulding consists of PVC polymer suspended in a plasticiser to which is added stabilisers and pigments.



Tensile strength and elongation at break

PVC dip mouldings have a generally high splash resistance to a wide range of chemical reagents. We recommend that we are advised of the environment in which the moulding is to be used in order that we can confirm the degree of compatibility and, if necessary, carry out tests.

The following table gives a general guide to the anticipated resistance of mouldings splashed with various chemicals at 20° C:

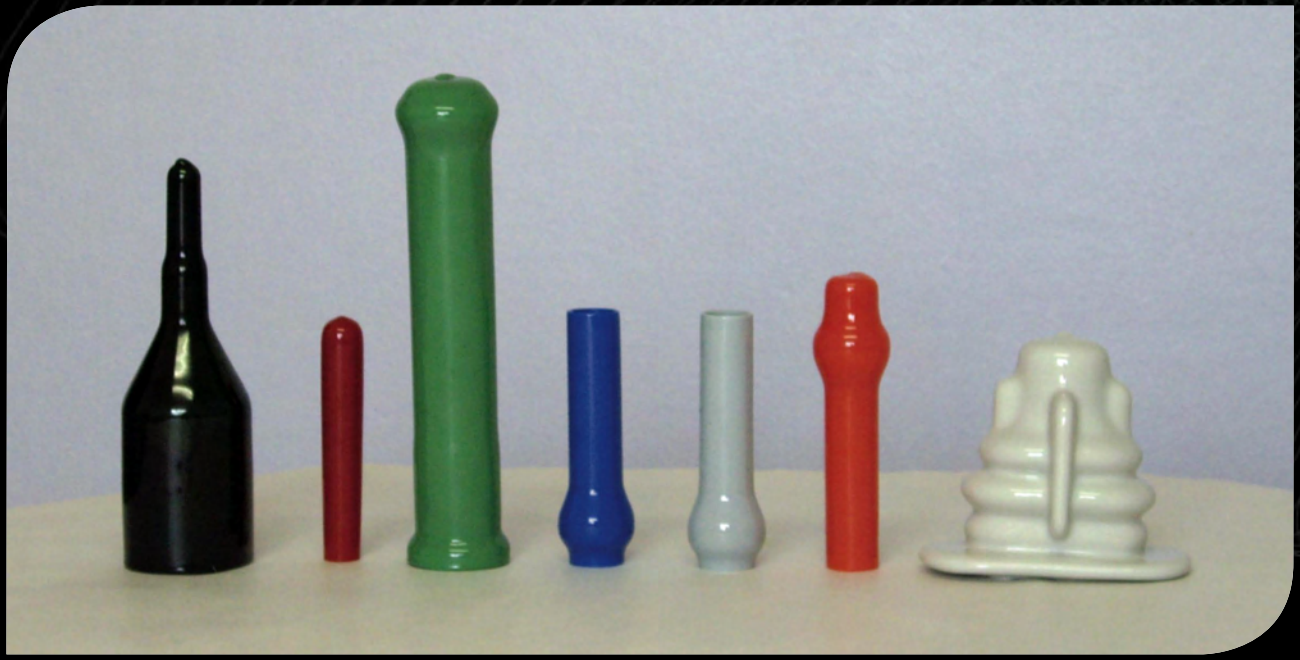
Resistant		Some stress
Acetic acid (60%)	Hydrogen peroxide	Nitric acid (70%)
Ethyl alcohol	Hydrogen peroxide	Sulphuric acid (80%)
Calcium hydroxide	Nitric acid (50%)	Degraded
Detergents	Phosphoric acid (30%)	Acetone
Glycerine	Sea water	Carbon tetrachloride
Hydrobromic acid	Sodium hydroxide	Benzene
Hydrochloric acid	Sulphuric acid (50%)	Petrol
Hydrofluoric acid	Transformer oil	Trichloroethylene

Material selection

We manufacture our own PVC plastisols and have developed a large range to suit widely differing requirements. Developments of new grades continues and, if necessary, we can enhance a particular property of a small grade.

Most grades are available in black, white and a wide range of colours. Some colours are offered as standard whilst other can be matched as required. Although many grades have a high gloss, opaque finish, some can be matt, textured, or alternatively translucent.

Your logos or other details such as operating instructions can be printed on most mouldings using highly tenacious inks.



Low temperature performance

Test pieces cut from a dip moulding produced under normal conditions were tested generally in accordance with BS 2782:1/104A (cold bend test). Samples from 100 BS softness mouldings passed the test at -50°C whilst those from 45 BS softness moulding passed at -20°C.

Flame retardancy

Additives can be incorporated in all our plastisols, exept food grades, to improve their resistance to flame. The specialised grades listed above include PDM 100 FR spec. UL.94-VO which has been tested positive by the American Underwriters Laboratories Inc. For further information please refer to UL website, www.ul.com (link QMFZ2.E173303).

Toxicity

Most of our plastisols are classed as non toxic. It is not possible to list the complete range of materials that can be manufacture, please consult us for further information.

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SYSTEM CERTIFICATION ISO 9001:2000 SGS

UKAS QUALITY MANAGEMENT 005