CHAPTER TEN

Sandwich Moulded TV Screen Frame
Elco Plastics Limited - Thorn EMI Limited

10.1 SYNOPSIS

This chapter describes the development and manufacture of the Thorn 1 IC 40 Model television-screen frame, sandwich moulded in high-impact polystyrene (HIPS) by Elco Plastics Ltd, Hemel Hempstead. The sandwich moulding (SM) process is described in some detail in PST 2 and comparisons are drawn with structural foams (SF) which share many common features with SM.

10.2 DESIGN OF THE MOULDED TV FRONT

The general assembly of the cabinet, moulded front, and working parts of the TV followed conventional procedures. That is, the cabinet itself consisted of PVC-faced chipboard with a 3 mm recessed strip around the inner front edges to accommodate tabs in the front moulding; the tabs were secured to the cabinet using a pneumatic stapling gun.

The design of the moulded front differed from most other TV front designs in three respects:

(a) The controls were situated beneath the screen, rather than down one of the sides of the screen, to give a squarer appearance to the set.

(b) The control panel housing protruded 60 mm in front of the screen; most TV sets have a flush front. It had been found that with other similar TV designs the protruding corners of the moulded front were prone to frequent knocks in service since this particular model (Baird 20 inch) is produced for the rental market implying more journeys and rougher treatment than for retail televisions. With compact moulded fronts the relatively thin corners of the protrusion were very easily damaged.

(c) The front moulding should entirely support the weight of the cathode ray tube (CRT) and its associated fittings, totalling approximately 20 kg. Attachment of the CRT to the moulded front was as follows: a 12 x 2 mm steel strap containing a lug at each corner was clamped onto the front edge of the CRT (the glass here is 12 mm thick). Metal fittings were bolted to the four corners of the moulded front to receive the strap lugs which were securely bolted in position.
A further requirement of the moulding was that it should be amenable to paint sprays.

Surprisingly, fire retardancy was not a requirement of the material since the moulded front is located away from a possible fire source with the CRT acting as a barrier.