

with a lubricant system of glycerol monostearate/calcium stearate, its flash release rating was then better than that for the Durez 22532. When the lime content was raised from 2.5% to 4.0%, the hot rigidity (a factor affecting dimensional stability) of the BMMA-5715 was brought into line with the Durez 22532.

Batch 5 was then produced in run #2 on 28 August 1964 incorporating the above formulation changes. The material ran much softer (because of the plasticizing effect of the glycerol monostearate), but by cutting the resin content, and switching to a 40/40 cycle, 20,000 pounds of good material was produced. When Cutler evaluated this batch, they confirmed our laboratory work, found the material fully satisfactory and then released the remainder of the batch. They then requested production of more material to be warehoused for their future use.

The next production run to produce 20,000 pounds of BMMA-5715 was begun on 8 October 1964. The material was made up satisfactorily but only after the roll temperatures were raised considerably and the amount of fines recirculated was raised to 1000 pounds per 2000 pounds of raw mix. Final mobility curves on this material indicated that this batch 7 was identical to the previous batch 5 shipped to Cutler Hammer. The customer began to mold this material, and it was soon evident to them that there was a great difference between the two batches. They said that batch 7 was very critical to run, and unless the operator put the preforms into the press immediately after preheating, a short shot would result.

A laboratory plunger molding preform delay test was devised in which a preheated preform was delayed for a specified length of time before being molded. The maximum time a material could be delayed and yet still fill out the mold is recorded as a measure of its plunger molding latitude. When the maximum delay times for batches 5 and 7 were compared, batch 5 was found to have three times the "latitude" of batch 7. Subsequent laboratory work with this plunger molding preform delay test (see Table 5) indicated that an increase in the roll temperatures and/or the amount of rework has a very definite effect on plunger molding latitude. It was interesting to note that other laboratory tests were unable to pick up these significant effects of rework and temperature.

Other experiments prior to the next production run indicated that if the glycerol monostearate was added to the BRN-5350 resin in the still, better plasticity control would result. Accordingly, a batch of resin so modified, was made up to be used in the next production run. This resin is now designated as BRN-5351.