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Transfer Molding Startup Procedure For BMC Polyester Molding Compounds

Before setting a mold into a press, it is necessary to estimate an appropriate press size for that mold. To determine the press size, multiply the projected area of the part at the parting line by 27.6 MPa (4,000 psi). In other words, the mold must fit between the tie bars, and the clamping tonnage should be approximately the amount determined by the above formula. A press that lacks sufficient clamp tonnage will result in parts that are heavily flashed and not well packed. These parts may have less than data sheet values physically and electrically and their appearance may also be questionable. However, if a mold that is designed to run in a press with a clamp tonnage of 75 tons is set in a press with a clamp tonnage of 400 tons, it is quite possible that significant damage will be done to the mold itself.

Once a mold has been matched up with a press and is installed in that press, a standard procedure should be followed to begin molding parts. Following a written procedure each time a mold is installed makes it easier for the press operators, by helping to minimize potential accidents and prevent the omission of any procedural steps. After the mold is set, the following startup procedure can be implemented.

1. Turn on the heat and frequently check the temperature of the molding surfaces with a calibrated pyrometer and surface probe. **PLEASE NOTE:** The temperature should be relatively uniform across the entire molding surface. We suggest starting with a mold temperature of approximately 160°C (320°F), but this temperature can vary from 143°C - 166°C (290°F - 330°F).

2. Check the **preheat temperature** of the material being loaded into the transfer pot. It is generally ambient but if necessary can be preheated to 32°C - 66°C (90°F - 150°F). It is to be measured by taking the slug of bulk or log and probing it 2 or 3 times using the needle probe of a calibrated pyrometer. The stock temperature should be checked after any changes are made to the process.

3. PLEASE NOTE: **NEVER** breathe the mold when molding PLENCO granular polyester molding compounds. The reason for this is breathing will allow air to enter the mold which will stop the resin reaction before the material is completely cured. To prevent this from occurring, molds built for this type of molding compound are normally vacuum vented.

4. Just prior to charging the transfer pot with material for the first shot, the mold should be **completely waxed**. Carnuba wax works well for this purpose. To wax a mold, melt the wax on the molding surface and with the aid of a small natural bristle paintbrush, spread it over

the entire molding surface, getting it into every pocket and corner. Remove any excess wax from the mold surface.

5. Before transferring the material for the first shot, the amount of vacuum being pulled in the mold should be checked to insure it is at least 21”Hg and then set the amount of injection delay time needed to allow the vacuum system to achieve it.

6. The molding parameters should be adjusted to produce good parts from all cavities, of each shot. Typically, the transfer time should be 3 - 6 seconds and the transfer pressure should be 2.75 - 5.5 MPa (400 - 800psi).

5. After an acceptable molding process is established, it should be capable of continuing without change for many hours.

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