

REEL PACKAGING FOR MouldING COMPOUND PELLETS

This invention relates to a method of packaging moulding compound pellets into a continuous coiled reel.

Thermosetting moulding compounds are normally composed of a mixture of thermosetting resin/fillers/colorants and other additives. The mixture is produced in powder form and then frequently pelletised according to customer requirements. These pellets, though being produced one by one, are normally bulk packaged "loose" inside an appropriate container (carton box/metal tin/plastic container etc) and shipped to the end user, where they are ultimately used, one by one, inside the transfer moulding equipment, to produce the final product.

This arrangement gives rise to the following disadvantages at the user moulding location:-

- a) the need to re-select pellets one by one from their "loose" packaging; this requires equipment which is both expensive and somewhat bulky.
- b) generation of much moulding compound dust at the pellet loading station, which is caused both during "topping up" with loose pellets as well as by the vibrating equipment normally used to re-select pellets one by one; this dust is particularly undesirable in the semiconductor component assembly sector where moulding stations are preferably located in dust free areas; it also causes rapid equipment wear/malfunctioning at the pellet loading section of the moulding equipment.

- c) higher risk of health hazards (eye contact/ inhalation) coming from dust liberated during the manual transfer of pellets from their loose packaging into the moulding equipment during the frequent "topping up" operations.
- d) pellet breakage with vibration during transport from supplier to end user.

With the present invention, it is proposed that, at the supplier pelletising location, the individual pellets are packaged in sequence as a single continuous long "line" by the application of an appropriate adhesive tape, which line is coiled onto a spool to form the final reel-packaged pellets.

At the user location, the pellet reel is loaded into the moulding equipment where the adhesive tape is removed in a continuous process controlled by the equipment itself, thus directly providing the pellets in sequence one by one, as normally required by transfer moulding equipment. The tape is then discarded.

This arrangement will simplify considerably the pellet loading section of the moulding equipment, hence reducing its cost/bulk and improving its reliability; it will vastly reduce the generation of moulding compound dust (and its associated problems) at the user location; it will considerably reduce pellet breakage with transport; it will also improve the pellet packing density hence reducing shipping bulk.

An example of the invention will now be described by reference to FIG 1 which shows the tape application/reel packaging operation carried out at the pellet supplier location.

The pelletising stage is modified slightly such that, after being formed, the individual pellets (2), instead of being collected loosely, are transported in a serial manner to the taping location. Here, the tape (1) is applied on two opposite sides of the pellets in a continuous process through the contact applied by rollers (3). The line of taped pellets (4) is subsequently coiled round a suitable bobbin to obtain the final reel-packaged pellets (5).

At the pellet user location, the pellet reel is loaded into the moulding equipment with the "start" of the pellet line located directly at the point where pellets are required. The equipment then feeds the pellet line, and unwinds the tape, thus directly providing pellets one at a time as required by the equipment itself. In this process, the used tape is wound as a reel and then discarded periodically as necessary.



CLAIMS

1. A process for packaging pre-pelletised moulding compound in a manner which provides pellets directly one by one in sequence as normally required by automatic moulding equipment, characterised in that the individual pellets are held together as a single continuous pellet line, flowing along the pellet axis, by the use of adhesive tape which is applied in continuous strips onto the cylindrical wall of the pellets, along the pellet axis, thus forming a single continuous line of taped pellets.
2. A process as claimed in claim 1 whereby the line of taped pellets is subsequently coiled onto a suitable bobbin thus forming a reel of moulding compound pellets.
3. A process as claimed in claims 1 and 2 whereby the adhesive tape is applied in two continuous strips, which strips are attached on diametrically opposite sides of the pellets, along the pellet axis.
4. A process as claimed in claims 1, 2 and 3 whereby the width of the applied strips is greater than half the pellet circumference hence resulting in complete encirclement of the pellets by tape.
5. A process as claimed in claims 1, 2, 3 and 4 whereby the adhesive tape material is such that it permits considerable elongation without breakage thus facilitating bending of the taped pellet line.
6. A process for packaging pre-pelletised moulding compound in reel form, substantially as described herein with reference to the accompanying drawing fig. 1.