Rotational Molding Group Module: 15	TEL 204: Polymer Molding & Forming Department of Technology	Student Names: (PRINT)

Overview:

Rotational molding is traditionally used to mold very large products. Rotationally molded products are hollow. You are to mold a part using rotational molding. You will select and prepare a mold. Select and prepare plastic, and then prepare, operate, and finally clean the molding machine.

Module Grade:

Product Color (10)	Product Surface (20)	Weight & wall thickness (20)	Procedures (20)	Lessons Learned (30)
Instructor Signature:			Date:	Grade:

Mold Loading Procedures:

1. Wear safety glasses.
2. Select a mold and clean using water and a soft plastic brush. NEVER SCRATCH MOLDS BY CARELESS HANDLING OR IMPROPER STACKING OR CLEANING!
3. Apply a light coat of silicone mold release to the mold. Apply release to the mold cavity and the mating surfaces.
4. Load the mold by filling 1/4 to 1/3 of the total cavity with powdered polyethylene mixed with 1% powdered colorant. Mix plastic on a piece of newspaper. Make sure that all lumps of pigment are removed.
5. Clamp mold halves together and place in carrier (if necessary - some molds do not need a carrier).

Molding Procedures:

6. Wear gloves if necessary. Do not touch hot molds, hot plastic, hot molder surfaces.
7. Mount mold/carrier in molder. Make sure the drive pin is working properly. Be sure that the bearings are all in place and working.
8. Do NOT over tighten mold clamp. The mechanism must rotate freely!
9. Apply 10 drops of oil on the rotating mechanisms/gears/chain in the molder.
10. Close molder and rotate at 50 RPM at 335 degrees, for 35 minutes. **Do not trust the thermostat dial**. Use the thermometers to measure temperature.
11. Cool the mold by turning the oven off and opening oven door. Direct a fan into oven to assist in the cooling cycle. KEEP MOLD TURNING AT 50 RPM, FOR 20 MINUTES.
12. Quench mold in a cooling bucket. Never quench in the laboratory sink.
13. Remove molded part. DO NOT USE METAL TOOLS TO DEMOLD PART.
14. Trim flash by scraping part with a dull knife or scraper. Do not use sandpaper to trim polyethylene. You can flame polish PE if you wish.

Lessons Learned:

List the most important lessons learned from this polymer module.

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2. _____

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3. _____

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