ABSTRACT

Injection molding using plastic is inconsistent thereby making quality control difficult. We analyzed various methods to determine the consistency and strength of polystyrene gears using Moldflow™ simulation software, thermal-fluid analysis, cost and expert analysis. While the strength of the polystyrene was found to vary, it’s possible to predict the gear strength based on standard tensile tests. It was also determined that decreasing cycle time can increase productivity as well as decrease the manufacturing cost per gear. Doing so should not sacrifice the quality of the gear.