

Phongwchit Sakunpet-alam 2010: A Development of Design and Making of the Cold Runner System for Rubber Injection Moulds. Master of Engineering (Industrial Production Technology), Major Field: Industrial Production Technology, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Supasit Rodkwan, Ph.D. 91 pages.

Generally, the excessive rubber material loss in the runner system in the injection moulding process significantly leads to increasing raw material cost. Therefore, the application of the novel cold runner system is recently used to reduce the waste of rubber in the runner. However, the cold runner assembled moulds are mostly imported from Taiwan and Japan. Consequently, this research is proposed to develop the design and manufacturing of the cold runner system used in rubber injection moulding with the application of CAD/CAM/CAE techniques. The characteristics of the rubber rheology and the temperature profile during injection were investigated. It was found that the temperature profile during injection controls the heat distribution in the runner system leading to prohibiting the rubber to scorch before it was subsequently injected into the mould. As a result, the better understanding of the cold runner system design and fabrication can be gained in this work so the wasted rubber raw material can be greatly reduced.

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Thesis Advisor's signature