RAPID PROTOTYPING PROCESS OF BOROBUDUR STUPPA CHOCOLATE MOLD

THESIS

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STATEMENT OF WORK'S ORIGINALITY

I honestly declare that this thesis which I wrote does not contain the works or parts of the works of other people, except those cited in the quotations and bibliography, as a scientific paper should

Yogyakarta, February 2011

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Dedicated for:

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(II Corinthians 4:7)

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I realize that this final report has not perfect but I hope that this final report can be useful and can be developed in a further research.

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ABSTRACT

Chocolate Monggo's requirement to create the biggest Borobudur stuppa chocolate mold has challenged Universitas Atma Jaya Yogyakarta to rapidly develop the chocolate mold. This problem can be easily approached by implementing rapid prototyping (RP) method.

This paper presents the RP process to create the biggest Borobudur stuppa chocolate mold, conducted in Production Process Laboratory in Industrial Engineering Program, Faculty of Industrial Technology, Universitas Atma Jaya Yogyakarta. The RP process in this research is initiated by 2D drawing from CV Anugerah Mulia, Chocolate Monggo's firm. Because the fix dimension is not determined yet, there are steps to determine machinable dimension. After the dimesion is determined, the 2D drawing is then traced and built up to 3D drawing in Delcam PowerShape until a master mold CAD model is ready. The master mold CAD model is analyzed and verified to check its machinability. After being verified, the CAM data is then prepared. The outputs of the CAM data preparation are machine simulation, NC codes, and estimation of machining time. These outputs facilitates user (UAJY) to estimate the Rapid Prototyping cost. Therefore, CV Anugerah Mulia, as the customer, is able to make a decision whether to continue or to stop the process based on the cost quoted and the CAD model.

By the end of the research, a rapid-prototyped master mold with dimension 170 x 110 x 35 mm and a chocolate mold are obtained. The Rapid Prototyping cost becomes Rp 1,273,700.00.