

WHITEBOARD ERASER

MANUFACTURING TECHNOLOGY REPORT

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INDEX NO : EGT/16/00037
DATE OF SUB : 14/12/2018

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1 Introduction

A whiteboard eraser is usually used in many places. It is available in many sizes as well. It usually consists of two parts namely, a plastic grip and a soft area for cleaning. However some erasers have magnetic plates built into the surface below the soft area. The magnetic plates allow the erasers to hung on whiteboards made of iron compositions.

These whiteboard erasers' plastic grip are usually manufactured using Plastic moulding. The soft-core is made by cutting a solidified soft-rubber foam or a soft cloth material. The magnetic plate is usually made of iron compositions.

2 Plasic grip

The plastic grip is usually made using plastic moulding process. The process involves the following steps.

1. Fabrication of mould for testing
2. Production Test
3. Refining the mould designs
4. Creating of die for mass production.
5. Production of the part

2.1 Fabrication of Mould for testing

The mould design would be usually made out of hard materials. The moulds for the process of plastic injection moulding is usually manufactured using CNC Machines (Electric Discharge Machining, Lathe, Milling). Typically these are made using hardened steel, pre-hardened steel, aluminium, and/or beryllium-copper alloy.

2.2 Production Test

In this process the injection mould is tested by creating a small set of production grade Plastic grips. Eventhough it may seem unnecessary to manufacture and test, due to the large cost associated with this step. It will be cost-effective than manufacturing a faulty product.

2.3 Mould Design Refinement

The mould is redefined with feedback from the initially manufactured test products. The process repeats the production test until desired quality is achieved.

2.4 Mould for mass production

A new mould is then created for mass production using the design elements achieved earlier. The mould manufacturing process is same as previous, however the materials are changed to more durable ones. Thus hardened steel is a viable material for mould making. [1]

2.5 Production of the part

The part is then mass produced using industrial injection moulding machines. Usually the machines are capable of operating at speeds of manufacturing multiple parts at the same time.

3 Manufacturing of Rubber Core

3.1 Procurement of Rubber Sheets

3.2 Creation of Cutting Steel

3.3 Production of Rubber Core

4 Manufacturing of Steel Sheets

References

- [1] "Injection moulding", accessed Dec 13, 2018, "https://en.wikipedia.org/wiki/Injection_moulding".