

Design and Analysis of Hammer of Impact Testing Machine

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Abstract: The impact testing machine is imperative for testing and ascertaining the effect vitality required to bowed or to break the distinctive sorts of materials by leading Charpy and Izod test. The point of the venture is to display and break down mallet of impact testing machine. The 3-dimensional model of mallet of effect testing machine will be made relating to the functional measurements utilizing PRO-E programming and utilizing ANSYS programming the examination of sledge will be finished. It will exceptionally gainful for appropriate utilization of machine to discover vitality require to break or bowed the specific kind of material in building field. Distinctive standards for cooperation with clients having wide scopes of encounters and information will be talked about. Far reaching set of bundles for demonstrating, recognizable proof, investigation, recreation and configuration will be portrayed. Issues related with organizing, conveyability, viability and extensibility will be talked about.

Key words: Impact testing machine, materials, PRO-E, ANSYS and investigation, recognizable proof, investigation, conveyability

INTRODUCTION

The impact testing machine is essential for testing and ascertaining the effect vitality required foundations for machines, analysis and design. This study explained by Prakash and Puri (1988) to twist or to break the distinctive sorts of materials by leading Charpy and Izod test. The point of the venture is to demonstrate, assemble, drafting and dissect the parts of impact testing machine. The 3-dimensional model of effect testing machine is made comparing to the pragmatic parametric appraisal of mechanical property of fused deposition modeling processed parts this study explained by Sood *et al.* (2010) measurements utilizing PRO-E programming and utilizing ANSYS programming the examination of various parts of the machine is finished combined analysis of support vector machine and principle component analysis for Ids this study explained by Raja and Rabbani (2016). Utilization of intelligent programming for outlining, displaying and investigation of parts of effect testing machine is accomplished for advancement of impact testing machine impact rupture of structural adhesive joints under different stress combinations this study explained by Goglio and Rossetto (2008). It is extremely advantageous for appropriate use in a building research. Diverse standards for connection with clients having wide scopes of encounters and learning are examined. Ribo-performance analysis of red mud filled glass-epoxy composites using Taguchi experimental design this study explained by Biswas and Satapathy (2009). Extensive arrangement of bundles for demonstrating, recognizable proof, analysis, reenactment and configuration are depicted. Issues related with organizing, conveyability,

practicality and extensibility are examined. An effect testing machine that compels relative's movement and diminish contact between moving parts to just the coveted movement. Affect testing is of tremendous significance. Review of inverse analysis for indirect measurement of impact force this study explained by Inoue *et al.* (2001). An impact between two items can regularly bring about harm to either of them. The harm may be a scratch, split, crack or break. Researchers need to think about how materials and items act under effect and the size of powers they can stand up to from the Raja and Rabbani (2016).

MATERIALS AND METHODS

The impact testing machine hammer was analyzed in this study. The impact machine hammer was designed by the PRO-E Software. In the PRO-E software, the hammer was created as solid model its known as three dimensional model. After creating the solid model, the created model was exports to the ANSYS Software for analysis its strength. The high carbon steel is used in the impact machine hammer. In this study, also, select the high carbon steel for analyzing the impact testing machine hammer. Finally, the analyzing results are tabulated and compared with the other materials.

Design: The impact testing hammer was created as the solid model by the help of the PRO-E. The created solid model was shown in Fig. 1. This solid model dimensions are taken from the presently used ASTM machines. This process is known as reverse engineering. In Fig. 1, the full view of hammer and whole hrm set up are shown.

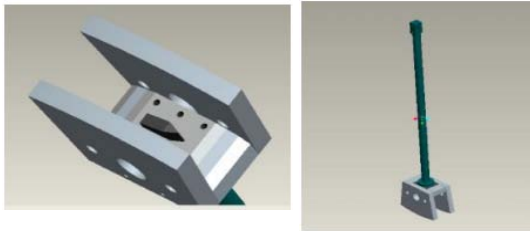


Fig. 1: 3D Model of the impact machine hammer

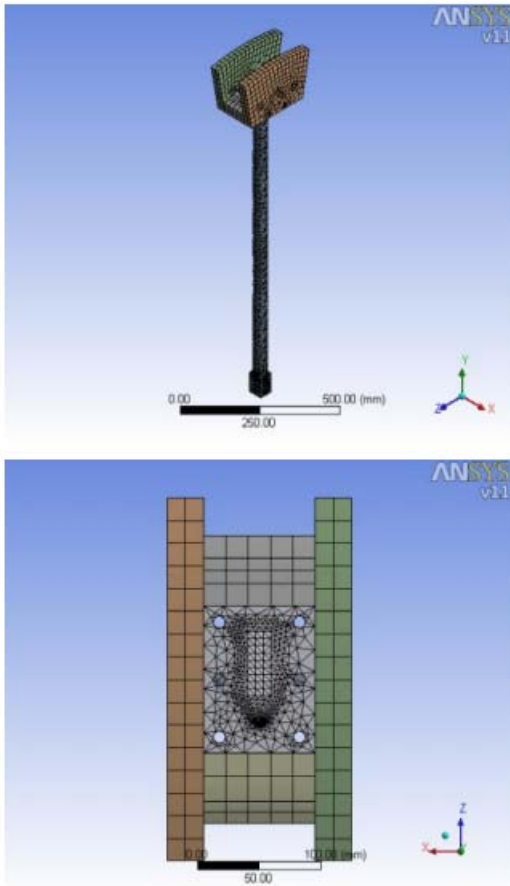


Fig. 2: Meshing model of the impact machine hammer

Meshing: The meshing image of the impact machine hammer was shown in Fig. 2. The meshing model was clearly shows in both hammer face and arm setup. The bottom face of the hammer has sized meshing and the other areas are normal meshing. This meshing is created in the ANSYS research bench software for analysis.

RESULTS AND DISCUSSION

The impact machine hammer was designed and also it analyzed by the ANSYS workbench software. The hammer was analyzed at the same material with various boundary conditions. The FEM technique was used in this project for analysis the hammer properties. The modified design was obtained less deformation than the present hammer. So, we prefers the modified hammer has more efficiency and less economic than the present hammer. The impact properties are found by the ANSYS results.

CONCLUSION

We have wanted to perform affect test utilizing distinctive materials at various temperatures by changing point of effect for instance at 450, 600, 750. FEM investigation is additionally made arrangements for the mallet of effect machine and furthermore attempting to discover the disappointments in the sledge. In the event that conceivable by changing outline of mallet of effect testing machine, weight and cost can be lessened.

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