

## Study of the Phenomenon of Collapse and Buckling the Car Body Frame

**Authors :** Didik Sugiyanto

**Abstract :** Conditions that often occur in the framework of a particular vehicle at a car is a collision or collision with another object, an example of such damage is to the frame or chassis for the required design framework that is able to absorb impact energy. Characteristics of the material are influenced by the value of the stiffness of the material that need to be considered in choosing the material properties of the material. To obtain material properties that can be adapted to the experimental conditions tested the tensile and compression testing. In this study focused on the chassis at an angle of 150, 300, and 450. It is based on field studies that vehicle primarily for freight cars have a point of order light between 150 to 450. Research methods include design tools, design framework, procurement of materials and experimental tools, tool-making, the manufacture of the test framework, and the testing process, experiment is testing the power of the press to know the order. From this test obtained the maximum force on the corner of 150 was 569.76 kg at a distance of 16 mm, angle 300 is 370.3 kg at a distance of 15 mm, angle 450 is 391.71 kg at a distance of 28 mm. After reaching the maximum force the order will occur collapse, followed by a decrease in the next distance. It can be concluded that the greatest strain energy occurs at an angle of 150. So it is known that the frame at an angle of 150 produces the best level of security.

**Keywords :** buckling, collapse, body frame, vehicle

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