Boron alloyed steels, especially 22MnB5, have been the point of focus for the materials choice in hot stamping. Objective of this project is to analyze the effect of heat treatment on its flexural performance. In this paper, five conditions of boron steels are analyzed. Specimens consist of the as-received (A), hot pressed (H) and quenched boron steel (QA, QWR, QWC). Flexural test was conducted to give more evidence on the flexural strength of the boron steel based on their process of heat treatment. Result show that Boron steel 22MnB5 undergone quenching process by using water at room temperature yield highest flexural strain.