

# Specimen Geometry Effect on the Mechanical Properties of AISI 1040 Steel

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The specimen geometry effect on some mechanical properties, such as tensile behaviour and hardness, of borided and unborided AISI 1040 steels was investigated. Boronizing of steels was performed by the powder pack method at 1210 K for 4 h. The specimen geometry and the boride layer thickness and hardness is similar for all tested boronized steels and independent of varying the shape of cross-sections. On the other hand, the ultimate tensile stress and elongation depend on the specimen geometry due to stress concentration at the corners of the specimen.

*Key words:* Boronizing; Borides; Microhardness; Ultimate Stress; Cracks.