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Variability of chemical analysis of reinforcing bar produced in Saudi Arabia
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Abstract
In view of the importance and demanding roles of steel rebar's in the reinforced concrete structures, accurate information on the properties of the steels is important at the design stage. In the steelmaking process, production variations in chemical composition are unavoidable. The aim of this work is to study the variability of the chemical composition of reinforcing steel produced throughout the Saudi Arabia and asses the quality of steel rebar's acoording to ASTM A615. 68 samples of ASTM A615 Grade 60 from different manufacturers were collected and tested using the Spectrometer test to obtain Chemical Compositions. EasyFit (5.6) software is utilized to conducted statistical analysis. Chemical compositions distributions and, control charts are generated for the compositions. Results showed that some compositions are above the upper line of the control chart. Finally, the analyses show that less than 3% of the steel failed to meet minimum ASTM standards for chemical composition. © Published under licence by IOP Publishing Ltd.

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