

ABSTRACT

*This project was carried at the factory of Industrial Fasteners Limited (IFL) situated at the O'Meara Industrial Estate in Arima, Trinidad. Samples of bolts were investigated through the phases of production from raw material to the finished product stage. These phases were classified as forging, heading, trimming, threading, heating, quenching and tempering. Mechanical, dimensional and usual tests were done at the various phases with an aim to formulate opinion on quality attained and recommendations where necessary.*

*Sampling was done according to the recommendations of the Industrial Fastener Institute and tested at the Caribbean Industrial Research Institute (CARIRI). They generally met the quality levels recommended by the British Standards Institute and the American Society for Testing and Materials.*

*Heat treatment included a study of equipment and mechanical and internal changes in the material. Samples of the material were mounted then etched and viewed under a high resolution microscope. The crystal structures observed at the various phases were generally what was expected.*

Tools which come into direct contact with the work, were given particular attention. In the absence of past data (on the tools) effort was directed on the composition, performance and failures of existing tools. Alternatives were suggested where it is felt that improvements may be achieved.

Finally, it is accepted that the products investigated were of good quality, but efficiency and consistency of the production remain in doubt. Furthermore, regarding the management functions of the factory, recommendations were made which should optimize the long term operation.