

application note



Metal Hardness Testing

Mercedes-Benz do Brasil Ltda.

Non-destructive testing in the automotive industry: How can you ensure efficient hardness measurements of large components?

One of the main characteristics of Mercedes-Benz is the assurance of quality of its products and services. Technical specifications of components (such as hardness value, heat treatment quality, dimensions) significantly influence their functionality. Thus, all pieces require hardness measurements. For example, if gears are improperly heat treated, the resulting hardness would not meet the standard value required on their specification. As a result, the company would have a reduction of component life and possible technical failures.

Application

Mercedes-Benz do Brasil uses the Equotip 3 for performing non-destructive tests on large size pieces. It is a necessary activity to ensure the ideal hardness value of the automotive pieces, in order to avoid early wearing or even rupture.

The tests could also be done with a static Brinell tester, for example, but Equotip 3 was chosen due to its low cost and ease of use: it makes the task of hardness testing a simple and efficient process, saving time and money. To control the quality of industrial products, Equotip hardness testers measure the Leeb hardness (HL) by means of the Leeb rebound method. Where required, the HL results can be converted to other common hardness scales. Mercedes-Benz do Brasil usually uses the scales HRC, HV and HB.

Customer Quote

“With the acquisition of the Equotip 3, our work has become faster and easier. Because the instrument does not take up a lot of physical space, it made an improvement of our laboratory layout possible. There are huge savings because if we use destructive tests, we have high costs due to the high volume of scrap that is generated while verifying the parts.”

Technologic Center, Mercedes-Benz do Brasil Ltda., Sao Bernardo do Campo Plant - Proceq customer since 2007.

Profile

Customer

Mercedes-Benz do Brasil Ltda. is a Brazilian producer and supplier of commercial vehicles, automobiles, components and services. The company was established in 1953. The Sao Bernardo do Campo plant is responsible for the production of the entire Latin American truck product range, axles, engines and transmissions, stamping facility and product engineering.

Employees

Over 270,000 employees all over the world.

Requirements

- Fast and accurate hardness measurements
- Testing of large parts
- Low investment costs
- A portable alternative to inflexible Rockwell, Vickers and Brinell testers

Proceq Product

Equotip 3 with impact device D

Benefits to the Customer

- Accurate and easy to use
- Cost saving
- Suitable for hardness testing of most metallic work pieces
- Hardness testing can be performed directly on-site and in any direction

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