Understanding SANS 500:2023

In December 2023, the South African Bureau of Standards (SABS) released the revised SANS 500:2023 standard, which governs the inspection, testing, and certification of chain blocks and lever hoists. These hand-powered lifting devices are integral to a wide range of industries, including agriculture, construction, and manufacturing. During the recent LEEASA conference in Johannesburg, Piet Otto of Phakamisa Safety Consultants discussed the key elements of the updated standard and its significant implications for chain blocks and lever hoists.

From the start of his presentation Otto highlighted the importance of adhering to the new regulations, noting that, due to SABS copyright restrictions, the SANS 500 cannot currently be shared on public platforms.

He advised LME and LMIs to ensure they obtain their own copies of the standard for reference and compliance. While SANS 500 has been widely discussed in the industry, it has sparked some controversy among professionals, particularly regarding its applicability to older equipment and the increasing complexity of its inspection requirements. The standard introduces specific checklists for inspecting and examining chain blocks and lever hoists, outlining the necessary steps for ensuring these devices are safe for use. However, the updated rules also underscore the challenges faced by those working with older equipment that may not conform to the new standards, particularly in rural areas or small workshops. Otto said one of the key objectives of SANS 500 is to bring inspections in line with the Driven Machinery Regulations (DMR) 18, ensuring that all components of the hoists are properly examined, and that overloading is avoided. These measures aim to eliminate the shortcut practices sometimes found in the industry, where some inspections and tests are rushed or conducted improperly due to financial or time constraints. In line with this, the standard stresses that testing should not only meet regulatory requirements but also ensure safety.

Otto said it was important to note that in South Africa, there were no locally manufactured chain blocks and lever hoists. “These devices are primarily imported from the East, and their quality and consistency can vary. Some units come pre-chained and sealed in boxes by the original equipment manufacturer (OEM), while others are supplied unchained, requiring further testing and certification by the distributor or OEM agent. Many of these devices are made in the same factories overseas and share the same gear train, operation and individual parts. This consistency in manufacturing, however, does not always guarantee adherence to the same standards in every country.” He said the OHS Act DMR 18 defined chain blocks and lever hoists as hand powered lifting devices with the requirements for inspection clearly outlined. “The LMI or the user cannot dictate as to how inspection and testing must be done,” said Otto.

SANS 500:2023 offers a framework for inspecting both new and reconditioned hoists. The legislation requires that lifting machines undergo inspections at regular intervals - either 6-monthly for in-house competent persons or annually by a registered LMI. These intervals are crucial for ensuring that hoists remain safe and operational. The standard defines “competent persons” as those with the necessary knowledge, training, and experience to perform detailed visual inspections, without necessarily being a certified LMI.

Testing and inspection

According to Otto, a significant change brought about by SANS 500:2023 is the focus on performance testing. In addition

to visual inspections, hoists must undergo functional tests to confirm proper operation under a load. This test involves lifting a 50 to 100 kg load over a distance of at least 10 links of chain. This ensures that the hoist's gears engage properly without overloading, providing an additional layer of safety. However, the standard's insistence on testing hoists to 170% of their rated working load limit (WLL) has raised questions, as many believe that testing to 100% WLL is sufficient. One of the issues highlighted by experts is the practicality of the overload limiter test. According to SANS 500:2023, if the overload limiter does not activate or slip at 170% of the WLL, the hoist should not be failed, as long as it has passed the functional test. This stipulation has been met with some resistance, particularly when considering the variability in the performance of load limiters. These devices are designed to prevent gross overloading and are not always precise in their operation, which can be influenced by factors such as temperature, humidity, and wear.

Despite these concerns, the standard places considerable emphasis on ensuring that overload limiters are not the sole method of load determination. The safety of the hoist should be verified through proper testing and inspection procedures, and the overload limiter should never be relied upon as the primary method of checking the load.

Challenges in implementing SANS 500

The primary concern voiced by industry professionals is the applicability of the SANS 500:2023 standard to older, non-compliant hoists still in use on farms, in workshops, and in rural areas. Many of these devices were manufactured to different standards and may lack the required identification markings or batch numbers. As a result, the comprehensive checklists in the standard may not be fully applicable in all cases. For instance, some hoists do not have legible chain markings or batch numbers, and this raises questions about how to report these discrepancies.

In these cases, it is recommended that such issues be noted in inspection reports rather than discarding the equipment outright.

This allows the continued use of older equipment while ensuring that any issues are documented and addressed.

Otto said while the SANS introduced much-needed clarity to the testing and inspection of chain blocks and lever hoists, it was important for industry to understand the challenges it presented as it would be necessary for to adapt to these updated standards.

"The shift towards more rigorous inspection and testing is a positive step towards improving safety, but industry stakeholders must balance regulatory compliance with the practical realities of maintaining and testing older equipment," he said.

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