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IEC 61400-23: 2014

# **DRAFT TANZANIA STANDARD**

**(Draft for comments only)**

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**Wind turbines - Part 23: Full-scale structural testing of rotor blades**

Draft for Stakeholders Comments Only

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**TANZANIA BUREAU OF STANDARDS**

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## **1. National Foreword**

This draft Tanzania Standard is being prepared by the Renewable Energy Technical Committee, under the supervision of the Electrotechnical Divisional Standards Committee (EDC)

This draft Tanzania Standard is an adoption of the International Standard **IEC 61400-23:2014**, *Wind turbines - Part 23: Full-scale structural testing of rotor blades*, which has been prepared by the International Electrotechnical Commission (IEC).

## **2. Terminology and conventions**

Some terminologies and certain conventions are not identical with those used in Tanzania Standards; Attention is drawn especially to the following:

- 1) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use “full point” on the baseline as the decimal marker.
- 2) Where the words “International Standard(s)” appear, referring to this standard they should read “Tanzania Standard(s)”.

### **3. Scope**

This draft Tanzania standard defines the requirements for full-scale structural testing of wind turbine blades and for the interpretation and evaluation of achieved test results. The standard focuses on aspects of testing related to an evaluation of the integrity of the blade, for use by manufacturers and third party investigators.

The following tests are considered in this standard:

- static load tests;
- fatigue tests;
- static load tests after fatigue tests;
- tests determining other blade properties.

The purpose of the tests is to confirm to an acceptable level of probability that the whole population of a blade type fulfils the design assumptions. It is assumed that the data required to define the parameters of the tests are available and based on the standard for design requirements for wind turbines.

Design loads and blade material data are considered starting points for establishing and evaluating the test loads. The evaluation of the design loads with respect to the actual loads on the wind turbines is outside the scope of this standard.

At the time this standard was written, full-scale tests were carried out on blades of horizontal axis wind turbines. The blades were mostly made of fibre reinforced plastics and wood/epoxy. However, most principles would be applicable to any wind turbine configuration, size and material.