

English Version

**Timber structures - Strength graded structural timber
with rectangular cross section - Part 3: Machine grading;
additional requirements for factory production control**

Structures en bois - Bois de structure à section
rectangulaire classé pour sa résistance - Partie 3 :
Classement mécanique ; exigences complémentaires
relatives au contrôle de la production en usine

Holzbauwerke - Nach Festigkeit sortiertes Bauholz für
tragende Zwecke mit rechteckigem Querschnitt - Teil
3: Maschinelle Sortierung, zusätzliche Anforderungen
an die werkseigene Produktionskontrolle

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (prEN 14081-3:2019) has been prepared by Technical Committee CEN/TC 124 “Timber structures”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14081-3:2012+A1:2018.

The other parts of the EN 14081 series are:

- EN 14081-1, *Timber structures — Strength graded structural timber with rectangular cross section — Part 1: General requirements*;
- EN 14081-2, *Timber structures — Strength graded structural timber with rectangular cross section — Part 2: Machine grading; additional requirements for type testing*.

Introduction

Machine grading is in common use in a number of countries. The countries use two basic systems, referred to as 'output controlled' and 'machine controlled'. Both systems require a visual override inspection to cater for strength-reducing characteristics that are not automatically sensed by the machine.

The output-controlled system is suitable for use where the grading machines are situated in sawmills grading limited sizes, species and grades in repeated production runs of around one working shift or more. This enables the system to be controlled by testing timber specimens from the daily output.

These tests together with statistical procedures are used to monitor and adjust the machine settings to maintain the required strength properties for each strength class. With this system it is permissible for machine approval requirements to be less demanding and for machines of the same type to have nonidentical performance.

The machine controlled system was developed in Europe. Because of the large number of sizes, species and grades used it was not possible to carry out quality-control tests on timber specimens drawn from production. The system relies therefore on the machines being strictly assessed and controlled, and on considerable research effort to derive the machines settings, which remain constant for all machines of the same type.

The acceptability of grading machines and the derivation of settings rely on statistical procedures and the results will therefore depend on the method used. For this reason, this document gives appropriate statistical procedures.

The requirements in this document are based on machines in current use and on future types of machines as far as these can be foreseen. It is recognized that additional clauses or standards may be required if unforeseen developments take place.

1 Scope

This document specifies requirements additional to those given in EN 14081-1 for factory production control of machine graded structural timber with rectangular cross-sections shaped by sawing, planing or other methods, and having deviations from the target sizes corresponding to EN 336.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 384, *Structural timber — Determination of characteristic values of mechanical properties and density*

EN 408, *Timber structures — Structural timber and glued laminated timber — Determination of some physical and mechanical properties*

EN 14081-1, *Timber structures — Strength graded structural timber with rectangular cross section — Part 1: General requirements*

EN 14081-2:2018, *Timber structures — Strength graded structural timber with rectangular cross section — Part 2: Machine grading; additional requirements for type testing*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in EN 14081-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

production batch

one production run where the timber of one source, grade or grade combination, species or species combination and size is graded using the same settings

4 Requirements for the operation, calibration and maintenance of a grading machine

4.1 No modifications that are in conflict with the machine manufacturer's specification shall be made to the machine.

4.2 Access to all machine adjustments shall be limited to personnel authorized to operate or set up the machine.

4.3 The strength grading machine shall be regularly calibrated in accordance with the manufacturer's specification.

4.4 A strength grading machine shall only be fitted with spare parts equivalent to, or improving upon, the performance of those fitted at the time the machine was assessed by initial type testing. If spare parts are fitted that are not identical to those fitted at the time the machine was assessed by initial type testing, the machine shall be reassessed to establish their effect on grading accuracy.