

Key points

- Marking requirements for solid timber are specified in EN 14081-1:2016 for 'general marking and CE marking. At the time of writing this standard has not been referenced in the Official Journal of the European Union (OJEU), in this information sheet it is assumed that it shortly will be.
- Each individual piece of machine graded timber needs to be marked.
- I.S. 127 covers visually graded timber and requires each piece of timber to be individually marked.
- Marks on the timber must be indelible and legible.
- Most marks on the timber are not CE marks as such but the CE symbol should be on the timber and in the accompanying documentation.
- CE marking should be provided for in the accompanying documentation which should be supplied with the timber.
- There should be an identification code linking the timber with the accompanying documentation. This code is usually separate to the code on the Declaration of Performance (DoP).
- The performance level of least one essential characteristic should be declared in the CE mark and DoP.
- Where there is a regulatory requirement in a member state for a particular essential characteristic then its performance is required to be declared in the CE mark and DoP.
- Other harmonised standards cover other products such as glulam and finger jointed timber and have their own marking requirements.
- Timber cannot be regraded but can be re-marked.
- Ungraded timber imported into Ireland can be graded but a notified body should be involved in the grading process and in the assignment of strength properties.

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Structural Timber – Marking for Solid Timber

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Introduction

This information sheet describes the current requirements in relation to the marking of solid structural timber with a rectangular cross section. The term marking refers to not just marks on the timber (and/or package) but also additional information, particularly in relation to CE marking, in accompanying documentation.

Most product standards have requirements for marking, harmonised standards have additional requirement related to CE marking.

European standards, when adopted and published by member states, have the national prefix placed in front of the standard. It is unlikely that the national prefix will be used in timber marks and therefore in this information sheet it has been dropped in most cases.

Strength grading

All structural timber must undergo an assessment of their strength properties usually carried out by a grading machine or trained visual strength graders. Strength grading requirements are specified in European and national standards; the main standard being I.S. EN 14081-1:2016 "Timber structures - Strength graded structural timber with rectangular cross section - Part 1: General requirements".

EN 14081-1 does not fully cover visual strength grading for which national standards are still applicable; the EN requires each piece of machine graded timber to be marked but leaves timber marking requirements for visually graded timber up to the national standard.

IS 127 "Structural timber – visual strength grading – Sawn softwoods with rectangular cross-sectional":2015 is the national visually grading standard for Ireland and it specifies marking requirements to appear on each individual piece of visually graded timber. This standard may be revised to take account of changes to EN 14081-1:2016.

Marking requirements are set out in the two grading standards as below:

- CE marking requirements are specified in Annex ZA of EN 14081-1
- General marking requirements are specified in Section 7 of EN 14081-1
- Additional marking requirements are specified in I.S. 127 where that standard is used to visually grade timber

It is a requirement that timber marks are clear and legible and indelible; in addition timber should have an identification code linking the accompanying documentation with the timber and this identification code must be referenced in

the accompanying documentation. This code can be on the timber and/or the package and is important as it is effectively the only link between the timber and the accompanying documentation

Timber marks, on the timber, the package or in accompanying documentation, give a significant amount of information on the timber but it is primarily the DoP that should give the important design information in relation to the essential characteristics; this information is also given in the CE mark.

EN 14081-1 requires that timber bear the CE symbol and specifies a certain amount of information to be placed on the timber (if this is not possible then on the package). Other CE marking requirements are to be provided in the accompanying documentation and these include the information on the timber or package.

Timber cannot be re-graded. However timber graded in accordance with EN 14081-1 can be re-marked provided the strength properties are not updated and provided the original DoP and CE mark were supplied with the timber. When re-marked the company becomes the manufacturer and takes on the responsibilities of a manufacturer. The company factory production control would have to be overseen by a notified body and a new DoP and CE mark would have to be produced. All original timber marks would have to be removed or otherwise shown not to apply.

Ungraded timber imported into Ireland can be graded and marked provided the species and source of the timber are known. However, the assignment of strength properties to the timber would have to be approved by a notified body.

EN 14081-1:2016

EN 14081-1 applies to structural timber of rectangular cross-sections having target sizes complying with EN 336 (this gives permitted deviations on target sizes in the form of tolerance classes). The more important points of this standard include;

- Marking requirements (non-CE marking) gives two options for marking;
 - Method A relates to the marking of each individual piece of timber
 - Method B relates to package marking i.e. where there is no requirement to individually mark each piece of timber
- Machine graded timber must comply with Method A while national visual grading standards may specify which method to use. Ireland and the UK have specified that visually graded timber using their standards (I.S. 127 and BS 4978) should be marked using Method A i.e. each piece of timber must be marked. However the visual grading standard of another Member State could specify Method B (package marking). Provided the timber has a valid DoP and is correctly CE marked then the timber has been legally put on the market. As such the timber should be acceptable for use subject to any requirements in the works specification and its suitability for the specific end use.

Timber marks

The marking requirements to be put on the *timber* in EN 14081-1 (clause 7.2) include:

- a. name or identifying mark of the manufacturer
- b. letter “M”, where machine graded
- c. the symbol “DG” for timber graded dry; an alternative wording may be used subject to certain conditions
- d. identification code, which identifies product from the accompanying documents
- e. performances of some of the characteristics of the timber, (e.g. mean modulus of elasticity, bending strength, etc. these may be declared by reference to a single strength class or strength grade

Where visually graded there may be additional marking requirements specified in the national visually grading standard used to grade the timber. These marking requirements are well known for I.S. 127 and BS 4978 but other member states’ visual grading standards are not well known in Ireland. However, as stated, provided the timber has a valid DOP and is correctly CE marked the timber has been legally put on the market.

ZA.3.3 refers to CE marking requirements applied to the timber or to the package (usually a label) as distinct from the accompanying information. The CE symbol would be expected to appear on the timber along with items a, b, c and e above. The following can be on the package or on the timber:

- f. identification number of the notified body
- g. the symbol “PT” where the timber has been treated with a preservative
- h. reference to the DoP

The CE symbol should always be on the timber.

ZA.3.3 requires a level or class of performance to be declared (essentially point e. above) and this is likely to be a strength class.

Accompanying documentation

The requirements for the information to be included in the *accompanying documentation* are set out in clause 7.3; it includes the information on the timber and/or package above and the following noting that the bolded text is also part of the CE mark (ZA.3.2). When CE marking requirements are already met by clause 7.3 or in the accompanying documentation then it does not need to be repeated. Items e to i are part of CE marking requirements for the essential characteristics and therefore do not need to be stated twice in the accompanying documentation.

- a. Identification code relating accompanying information to the timber or package (see d. above)
- b. Number of the European Standard, and the year of its publication** (i.e. EN 14081-1:2016)
- c. Type, batch or serial number or similar which refers to the production lot (e.g. date, working shift)**
- d. Description of the timber, declared as:**

- Generic name: strength graded structural timber
 - Tolerance class
 - **Species code for a single species, or a species combination or the botanical species if not in EN 13556 or Tables B.1 or B.2 of EN 14081-1**
 - **Code identifying the country or counties of origin of growth in accordance with EN ISO 3166-1**
 - **Grade and grading standard where visually graded**
 - The reference number of the Approved Grading Report (these have replaced EN 14081-4 which has now been withdrawn) when relevant
 - **Specific end use of timber if relevant**
- e. **When performances are declared by strength class either by reference to the strength class standard e.g. to EN338 or by a list of individual performances related to the strength class**
- f. **Reaction to fire class; as Class Ds2,d0 (CWFT) or based on test results to EN 13501-1 together with any appropriate mounting and fixing conditions**
- g. **Fire resistance, declared as characteristic density and the species**
- h. **Release of dangerous substances where relevant**
- i. **Durability performance (i.e. resistance to biological organisms) of the timber:**
- **without preservative treatment the natural durability declared as a classification against wood destroying fungi, insects, termites and marine borers, according to EN 350, or**
 - **with preservative treatment; indication “PT” and additional information in accordance with EN 15228.**

The identification code (a) in the accompanying information is the same code as on the timber; it is important as it provides the only link between the timber and accompanying documentation. The code it is unlikely to be the DoP number as the DoP is unlikely to have a reference to the accompanying documentation and the DoP can be generic and placed on a website. The DoP and CE mark (which should reference the DoP) are not required to reference the identification code but the DoP and CE mark can be considered to be part of the accompanying documentation.

Accompanying information - CE marking

Including the CE symbol the CE marking on accompanying documentation consists of the bolded requirements above, the information on the timber (or package) and;

- **the last two digits of the year in which the CE marking was first applied by the manufacturer**
- **the unique ID code of the product type (a manufacturers’ code)**
- **the intended use of the timber given in the harmonised specification (for EN 14081-1” buildings and bridges”)**
- **performances on all relevant essential characteristics;**

1. mechanical resistance usually declared by strength class and the relevant strength class standard (e.g. EN 338) or by listing the individual performance
2. reaction to fire class according to EN 13501-1 either by Class S-s2,d0 (CWFT) or based on testing to EN 13501-1 along with any relevant test information
3. fire resistance, declared as characteristic density via the strength class and the species
4. release of dangerous substances
5. durability performance.

An essential characteristic need not be declared if there are no national regulatory requirements on the essential characteristic for the products intended use; the term “NPD” meaning no performance determined may be used. At least one essential characteristic must be declared but in practice all the essential characteristics would be expected to be declared.

Note that timber treated to improve its fire performance is not covered in EN 14081-1.

The DoP can be generic and will usually be on the manufacturer’s website. A paper version of the DoP may be requested but the CE marking described above must be in the accompanying documentation which comes with the timber; this should be supplied with the timber without it being requested.

I.S. 127:2015

I.S. 127 “Structural Timber – Visual Strength Grading – Sawn Softwoods with Rectangular Cross-Section“ requires the following to be marked *on* the timber:

1. identification number of the notified body
2. name or identifying mark of the manufacturer
3. last two digits of the year in which the marking as required by this clause was affixed
4. grade (GS or SS)
5. standard reference “I.S. 127:2015”
6. strength class using EN 1912
7. “DG” (signifying that the timber was dry when graded)
8. identification code linking the timber with the accompanying documentation
9. reference number of the DoP
10. CE Mark if applicable+
11. Species code/s

The above items are required by EN 14081-1 with items 2, 6, 7 and 8 being required to be placed on the timber. Items 1 and 9 are required by I.S. 127 to be placed on the timber rather than on the optional package given in EN 14081-1. Although the symbol “PT” for treated timber is not required by I.S. 127 or in any Irish regulations it is still required by EN 14081-1 and would normally be on a label attached to the package. However, some member states do have a regulatory requirement that PT is marked on timber members.

An example of a timber mark is shown below and is based on the example given in I.S. 127:2015. However it should be noted that I.S. 127 has yet to be revised in light of the revision of EN 14081-1:2016. The marking requirements may be changed but this would not affect the marks on the timber still required by EN 14081-1.

NB XXXX YYYY 15	I.S.127:2015 EN 14081-1 	DG CD13-01-41 DoP1302A1	C14 GS PCST
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The left hand column shows the number of the notified body, YYYY is the identifying mark of the manufacturer (their name could be here, a number would usually signify a register of some sort, and 15 is the year when the mark was first affixed to the timber (in any revision of I.S. 127 this would become 17 for example if it was applied in 2017). EN 14081-1 is likely to be on a stamp rather than I.S. 14081-1, both are acceptable; but the national prefix of any member state could be placed on the stamp if the timber is imported.

The second column from the left shows the number and year of the relevant visual grading standard, the harmonised European Standard and the CE symbol. The amendment year may be included in a future revision.

The third column from the left shows DG signifying that the timber was graded dry, the identification code linking the timber to the accompanying documents and the reference to the DoP; these codes are the responsibility of the manufacturer. In this example they are separate

The right hand column shows the strength class (from EN 338), the timber visual grade and the timber species. PCST is from EN 13556 and signifies *Picea sitchensis* (Sitka spruce) it does not signify the timber source.

Marking associated with sustainable timber sources are not covered by this information sheet.

EN 336:2013

EN 14081-1 only applies to timber with tolerances complying with EN 336 "Structural timber – Sizes, permitted deviations" which gives two tolerance classes based on a target size at 20% moisture content.

The two tolerance classes are as below;

Timber dimension	Tolerance Class 1	Tolerance Class 2
≤100mm	-1.0/+3.0mm	-1.0/+1.0mm
>100mm ≤300mm	-2.0/+4.0mm	-1.5/+1.5mm
>300mm	-3.0/+5.0mm	-2.0/+2.0mm

Tolerance class 1 is usually appropriate to sawn timber while tolerance class 2 is usually associated with factory produced

components such as roof trusses and timber frame.

Where timber is not at the 20% reference moisture content, EN 336 gives a method for estimating the target size at the 20% reference moisture content.

General

EN 15228 "Structural timber – Structural timber preservative treated against biological attack" specifies information (in the accompanying documentation) that should go with timber that has been treated with a preservative. This information should be passed on to the purchaser of the timber and if the timber is used in a component (e.g. timber frame wall panels) then it should be kept as part of the factory production control records and should be available on request. There should be a link between the treated timber and the timber supplied to the market; an obvious link might be the bale number or the identification code linking the timber with the accompanying documentation; any link should be referenced by the treatment company in their factory production control records and by the timber supplier/distributor in their factory production control records. This link should be should carried over into any factory production control system where the timber is used in another product such as floor cassettes, timber frame external walls, roof trusses etc.

Where timber is used in a harmonised product standard (e.g. roof trusses to EN 14250), it is the manufacturer of the product who takes responsibility for CE marking and the DoP. The manufacturer should keep the original timber DoP and CE marking (and for any other components) and associated accompanying information on file as part of their factory production control system. The product will have a new DoP and CE mark, some of this information may be provided by the original timber documentation e.g. strength class.

Timber marks must be clear and legible as well as being indelible. Illegible marks can break the link between the timber and accompanying information including the CE mark and DoP and could lead to the timber being rejected on site.

Other marks

There are a number of other harmonised standards which require marking and are not considered in this information sheet; they include;

EN 14080:2013 Timber structures — Glued laminated timber and glued solid timber — Requirements

EN 14374:2004 Timber structures — Structural laminated veneer lumber — Requirements

EN 15497:2014 Structural finger jointed solid timber — Performance requirements and minimum production requirements

EN 14229:2010 Structural timber — Wood poles for overhead lines

Some of these may be subject to an information sheet in the future.

This information sheet is for general guidance only and is based on information available at the time of writing; users should ensure that it is relevant to their specific circumstance. It may be advisable in certain cases to engage professional advice. While every effort has been made to ensure the information provided is accurate, WTI or the Department of Agriculture, Food and the Marine do not accept any responsibility or liability for errors of fact, omission, interpretation or opinion that may be present, nor for the consequences of any decisions based on this information. Standards, regulations and information are subject to changes which may not be reflected in this information sheet