

Dimensiones y calidades de la madera

NORDIC TIMBER COUNCIL

Para asesorar a arquitectos, diseñadores y prescriptores, agentes e importadores, el Nordic Timber Council ha compilado y difunde una serie de datos técnicos sobre los productos nórdicos. La información se actualiza mensualmente para que los utilizadores tengan siempre los datos de última hora.

Especies

Como se ha dicho, existen dos especies de coníferas procedentes de los aserraderos nórdicos: los que comercialmente se conocen como 'Pino Suecia', 'Pino Norte' o 'Pino Flandes'-European Redwood, que es en realidad el *Pino silvestre* y el 'Pino blanco'-European Whitewood a veces llamado Abeto o Abeto noruego, que es en realidad la *Picea abies*. El 'Abeto' se usa para fines estructurales (montantes, cerchas, viguetas, forjados, etc.) y tiene características similares al 'Pino rojo'.

Clasificación por calidades

La madera nórdica se clasifica en tres clases denominadas Unsorted (la máxima calidad como se referencia en el 'Libro Verde' del NTC), Quintas y Sextas. Las clases no son especificaciones ni reglas de uso final pero es un medio de determinar visualmente la calidad de la madera entre importadores y aserraderos.

Actualmente existe un nuevo sistema de clasificación con denominaciones A, B y C. Ambos sistemas se usan actualmente, como se referencia en el 'Libro Azul' del NTC).

Escuadrías de madera aserrada

Los aserraderos nórdicos cortan la madera en unas dimensiones típicas tanto para el Proceso como el Aneto como aparecen en la Tabla 1. Aunque el ancho mayor es 225 mm, es posible obtener piezas de 250, 275 y hasta 300 mm de determinados aserraderos.

Escuadrías de madera desdoblada

El desdoblado (reaserrado en la mitad de la sección) puede realizarse en el país de origen o en el de destino. En el desdoblado, la sierra elimina cerca de 2,5 mm. Ancho y grueso no deben exceder en 2 mm la escuadría nominal inicial. En la tabla 2 aparecen las típicas escuadrías de madera desdoblada.

Longitudes

La madera nórdica se asierra en longitudes métricas con incrementos de longitud de 300 en 300 mm. Los largos típicos aparecen en la Tabla 3. Algunos aserraderos pueden ofertar largos de hasta

Nordic Timber Council

To assist architects, designers, materials specifiers, timber merchants, agents and importers, the Nordic Timber Council has compiled and presents a series of useful technical data points about Nordic sawn timber products. Nordic timber technical data points and tables can either be saved or downloaded to disk for reference and use off-line. These pages will be updated on a monthly basis and users should ensure that they are using data and information for the current month as given at the top right hand corner of each page.

If, after viewing these pages, you require further information please contact the appropriate Nordic Timber Council office or request a copy of the appropriate Facfile.

SPECIES

There are two species of softwood available from most Nordic sawmills - European Redwood (*pinus silvestris*) and European Whitewood (*picea abies*).

Redwood, sometimes called Deal, Pine or Scots Pine is used for quality joinery, moldings, decorative cladding, furniture etc. Whitewood, sometimes called Spruce, Spruce, White Pine or White Deal can have a appearance to Redwood but characteristically is lighter in colour. Whitewood is used for structural applications such as studs, roof trusses, floor joists, floor boardings etc.

QUALITY GRADING

Nordic timber is divided into three grading bands namely Unsorted, Fiftths and Sixths - unsorted being the best quality as reference in The Green Book. The grades are not end user rules or specifications but are given as a means to determine the visual quality of the timber between sawmill and importer.

A new grading system in quality bands A, B and C is now used but both systems may be used, as referenced in The Blue Book, to grade timber in future.

SAWN SIZES

Nordic mills saw to metric dimensions and the most sizes of sawn Nordic Redwood and Whitewood are in Table 1: Sizes as Sawn from the Log. While the size shown is 225 mm, it is possible to obtain widths of 250, 275 and even 300 mm from some mills.

RESAWN SIZES

Resawing may take place in either Nordic countries or in country of importation. During resawing the saw blade remove approximately 2.5 mm. Widths and thicknesses resawn timber should not be more than 2mm less than basic resaw size. Table 2: Typical Resawn Sizes shows the availability of typical resawn sizes.

LENGTHS

Nordic timber is sawn to metric lengths and normally in 300mm increments of length. Typical lengths are shown in Table 3: Lengths Commonly Available from Nordic Sawmills. Some mills may be able to supply lengths of 6.0m and 6.3m and longer lengths using fingerjoints, subject to special order.

PLANED SIZES & LENGTHS

Timber merchants and DIY retailers will often offer a range of planed sizes as well as sawn. This is often referred to as p.s.e. (planed all round) or p.s.e. (planed and square edged).

Be aware that if timber has been planed it will usually be smaller than the nominal sawn size i.e. the 50 x 100 mm will probably be 47 x 97 mm when planed. Typical sizes are given in Table 4: Commonly Available Planed Sizes.

Tabla 1. Escuadrías de madera aserrada (datos de noviembre 1998 del NTC)

ESPESES	ANCHOS							
	75	100	110	125	150	175	200	225
16	✓	✓		✓			✓	Bajo ancarajo
18	✓	✓	✓	✓			✓	Generalmente disponible
22		✓	✓	✓	✓		✓	Siempre disponible
25		✓	✓	✓	✓	✓	✓	
32		✓	✓	✓	✓	✓	✓	
38		✓	✓	✓	✓	✓	✓	
50		✓	✓	✓	✓	✓	✓	✓
63	✓	✓	✓	✓	✓	✓	✓	✓
75	✓	✓	✓	✓	✓	✓	✓	✓



6 y 6.3 m utilizando empalmes de testa.

Caras y largos cepillados

Los almacenistas y distribuidores ofrecen frecuentemente una gama de escuadrías cepilladas y canteados. Se suelen denominar en inglés como p.a.r. (planed & round) o p.s.e. (planed and square edged).

Se debe tener en cuenta que la madera cepillada será normalmente 3-5 mm menor que la dimensión nominal simplemente aserrada. Por ejemplo una sección de 50x100 mm tendrá probablemente 47x97 mm cepillada. Las secciones cepilladas más habituales aparecen en la Tabla 4.

Also be aware that timber is usually cut in metric lengths of 300 mm increments. Confusion can arise when, for example, 8 feet lengths are ordered and the nearest length supplied. The 40mm difference in length may be important.

Grading of sawn timber

Introduction

Grading of sawn timber can be made according to two different criteria depending on the end use. The first one is denominated «aesthetic criteria» which is applied to timber with non structural uses, as flooring surfaces, windows and doors. The second one is the structural criteria for load bearing pieces (columns, joists, trusses, etc.).

Grading rules of Nordic countries for sawn timber with both criteria are described in this paper.

The guidelines of both grading criteria are explained and some details of aesthetic rules are included at the end because it is the best known system in Spain.

Aesthetic grading (non structural)

The coniferous sawn timber from Sweden and Finland, are usually divided in six grades (I-VI). The requirements for each class are included at the end of this article. The following groups of the previous grades are generally used in the market of sawn timber:

U/S (unsorted): include the four superior grades (I and IV). The unsorted denominations is based on the grading process in which the inferior grades (V and VI) are separated letting fall the rest of the timber.

The ratio of grades I to III is greater in pine than in spruce. Typical applications of this grade are moulding, profiles for windows, doors, furniture, etc.

V: this grade is adequate for painting. Small cross section pieces are used in exterior cladding, furniture, flooring. It also has structural applications.

Sawfalling- V and better: under this denomination are marketing together the grade V/S and V.

The ratio of grades I to V is variable depending on the mill.

VI: it is the lowest grade on which the size of knots has not limitations and only specifies that the piece holds together. Its typical uses are for formwork and other auxiliary uses in construction.

A lot of sawmills offer special grades according to the requirements of customer, that mingle the previous grades groups.

However the definition of the grades has a lack of precision in their terminology.

Sometimes it is difficult for the technicians (architects and engineers) to get used to this terminology, that is really confuse. The name of the «sawfallings» and «unsorted» are not very adequate.

Fortunately these grading rules have been recently modified and simplified. The new version includes only 4 grades A, B, C and D, (the grade A has also four subgrades). The correspondances between the old grades and the new ones are:

A = V/S

B = V

C = VI (export quality)

D = VI (domestic quality)

During 1995 there will still use the old grading rules in the market. This is the reason because both versions are included in this article.

Grading for structural use

Nordic T-rules (INSTA 142. Nordic visual stress grading rules for timber) are used in Nordic countries for sawn timber grading for structural use.

This standard define 4 grades: T3, T2, T1 and T0.

Table 1 includes the specifications for sizes equal or greater than 45 x 70 mm.

Redwood and whitewood, from North of Europe, graded according to this standard have the following strenght classes:

T3 --- C30

T2 --- C24

T1 --- C18

T0 --- C14

The assignement of strenght classes is defined in pr EN TC 124.215.

«Structural timber. Strength classes. Assignement of visual grades and species».

The correspondance between aesthetic and structural grades are only approximated and shall be completed with a visual grading. Generally, aesthetic grades include a high percentage of structural pieces, according to the following relation:

U/S --- T3

V --- T2

The standard INSTA 142 has replaced the old version T-rules: Instructions for grading and marking of T-timber, T-virkesförenigens styrelse. 1981. This standard contained three grades T30, T24 and T18 approximately equivalent respectively to T3, T2 and T1.

Aesthetic grading of coniferous from Sweden and Finland: *Pinus sylvestris* and *Picea abies*. Old version.

(See «Classement des sciages de pin et d'épicéa Suédois et Finlandais» 1^o partie: classement d'aspect. Conseil des Bois de Suède et Finlande, Paris 1982).

GRADING FOR NON STRUCTURAL USE

Tabla 2. Escuadrías de madera desdoblada (datos de noviembre 1998 del NTC)

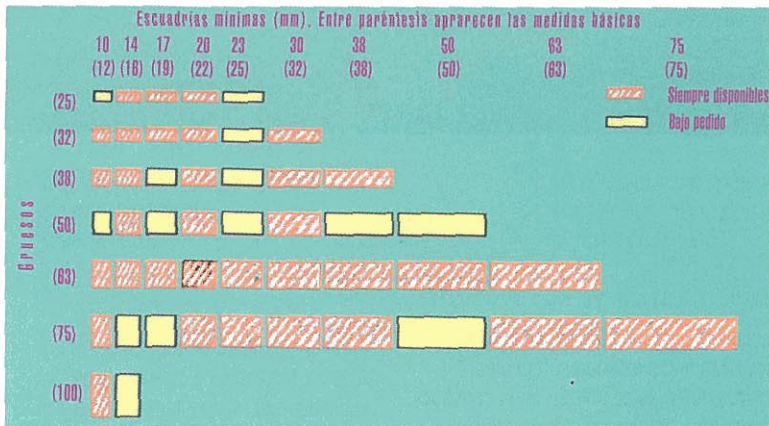


Tabla 3. Largos comerciales (datos de noviembre 1998 del NTC)

Largos generalmente disponibles en las aserraderas nórdicas (metros)						
1,80	2,10	3,00	4,20	5,10	6,00	
	2,40	3,30	4,50	5,40	6,30	
	2,70	3,60	4,80	5,70		
		3,90				

Tabla 4. Escuadrías de madera cepillada comúnmente disponibles (datos de noviembre 1998 del NTC)

