

SELECTIONS

The associated symbols and relative meanings are illustrated below.

SYMBOL	CATEGORY	REFERENCE
○	CLASS ○	SELECT
△	CLASS △	NATUR
□	CLASS □	RUSTICO

Classification for Quercus spp. (oak)

CHARACTERISTICS

APPEARANCE CLASS

	○	△	□
Healthy Sapwood	Not admitted	Admitted up to 50% of front face, if distributed	All characteristics are admitted without limits on dimensions or quantity provided they do not impair resistance or quality of resistance to wear of the parquet flooring
Knots ⁽¹⁾ Healthy and intergrown Rotten knots	Admissible if: diameter ≤ 3 mm diameter ≤ 1 mm if not grouped ⁽²⁾	Admissible if: diameter ≤ 8 mm diameter ≤ 2 mm	
Windshake (cracks)	Not admitted	Admitted up to 20 mm in length, per strip	
Bark inclusions	Not admitted	Not admitted	
Lightning strike	Not admitted	Not admitted	
Grain deviation	Admitted, no limit	Admitted, no limit	
Colour variation	Admitted slight variatione	Admitted	
Parenchymatic rays (mirroring)	Admitted	Admitted	
Biological alteration	Not admitted	Not admitted	Not admitted with the exception of blueing and dark insect holes (moschettature)

CONCEALED PARTS

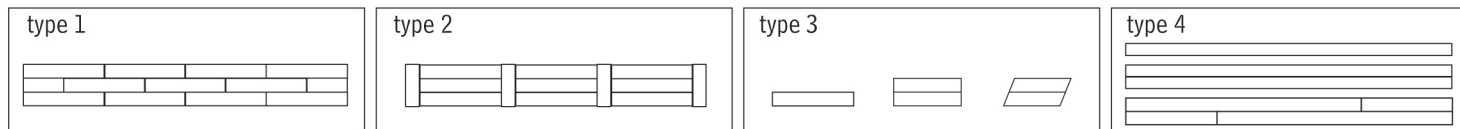
All characteristics are admitted without limits on dimensions or quantity provided they do not impair resistance or quality of resistance to wear of the parquet flooring.

(1) Splits of knots and holes caused by knots must be grouted

(2) Knots are considered grouped if the separation distance, measured from edge to edge, is less than 30 mm

LAYING TYPES AND PATTERNS

- Types 1 and 4 are examples of common lying types/patterns of multi-layer elements with tongue and groove.
- Types 2 and 3 are examples destined for laying according to a precise pattern.
- Type 3 usually feature smaller dimensions



DIMENSIONAL CHARACTERISTICS AND LIMIT DEVIATIONS FOR LAYERED ELEMENTS

Characteristics vary according to the type of parquet concerned.

- **Warping:** deformation of an element in the direction of the face length.
- **Spring:** distortion of an element in the longitudinal direction perpendicular to the edge. This must be measured with zero arch.
- **Level difference:** difference in height between two faces of two adjacent elements assembled on a flat surface.

Characteristic	Type of Parquet			
	type 1	type 2	type 3	type 4
Thickness of top layer	≥ 2,5 mm			
Length deviation	not applicable	± 0,1%	± 0,1%	not applicable
Width deviations	± 0,2 mm			
Offset between elements	≤ 0,2 mm			
Orthogonal deviation	≤ 0,2% of wight	≤ 0,1% of wight	≤ 0,2% of wight	
Warping across element	≤ 0,2% of wight	≤ 0,3% of wight	≤ 0,2% of wight	
Spring (along element)	≤ 0,1% of length			

SELECTIONS

Classification for *Fraxinus excelsior* (European ash), *Fagus sylvatica* (beech), *Betula* spp. (birch), *Acer* spp. (maple)

CHARACTERISTICS

APPEARANCE CLASS

	○	△	□
Healthy Sapwood	Not applicable	Not applicable	Not applicable
Knots ⁽¹⁾ Healthy and intergrown Rotten knots	Admissible if: diameter ≤ 3 mm diameter ≤ 1 mm if not grouped ⁽²⁾	Admissible if: diameter ≤ 8mm diameter ≤ 2mm	All characteristics are admitted without limits on dimensions or quantity provided they do not impair resistance or quality of resistance to wear of the parquet flooring
Windshake (cracks)	Not admitted	Admitted up to 20 mm in length, per strip	
Bark inclusions	Not admitted	Not admitted	
Lightning strike	Not admitted	Not admitted	
Grain deviation	Admitted, no limit	Admitted, no limit	
Colour variation	Slight variation admitted ⁽⁴⁾ slight traces of natural fade admitted	Admitted	
Red heart and black heart ⁽⁵⁾	Not admitted	Not admitted	
Stick marks	Not admitted	Not admitted	
Parenchymatic rays (mirroring)	Admitted	Admitted	
Biological alteration	Not admitted	Not admitted	Not admitted with the exception of blueing and dark insect holes (moschettature)

CONCEALED PARTS

All characteristics are admitted without limits on dimensions or quantity provided they do not impair resistance or quality of resistance to wear of the parquet flooring.

(1) Splits of knots and holes caused by knots must be grouted

(2) Knots are considered grouped if the separation distance, measured from edge to edge, is less than 30 mm

(3) No limit on *Betula* spp. (birch)

(4) Admitted for evaporated or vaporised beech

(5) Brown heart for birch and maple

Classification of other hardwoods (free class)

APPEARANCE CLASS

	●	▲	■
Healthy Sapwood or Heart ⁽¹⁾	Not admitted Not admitted	Admitted Admitted up to 50% of front face if distributed	Admitted Admitted up to 50% of front face if distributed
Knots ⁽²⁾ Healthy and intergrown Rotten knots	Admissible if: diameter ≤ 2 mm if not grouped ⁽³⁾ diameter ≤ 1 mm if not grouped ⁽³⁾	Admissible if: diameter ≤ 5 mm if not grouped ⁽³⁾ diameter ≤ 2 mm if not grouped ⁽³⁾	All characteristics are admitted without limits on dimensions or quantity provided they do not impair resistance or quality of resistance to wear of the parquet flooring
Windshake (cracks)	Not admitted	Not through. Admitted if width is ≤ 0.5 of element width	
Bark inclusions	Not admitted	Not admitted	
Lightning strike	Not admitted	Not admitted	
Grain deviation	Admitted, no limit	Admitted, no limit	
Colour variation	Admitted. Slight traces of natural fading admitted (mineral lines)	Admitted	
Parenchymatic rays (mirroring)	Admitted	Admitted	
Biological alteration	Not admitted	Not admitted	Not admitted with the exception of blueing and dark insect holes (moschettature)

CONCEALED PARTS

All characteristics are admitted without limits on dimensions or quantity provided they do not impair resistance or quality of resistance to wear of the parquet flooring.

(1) Healthy sapwood, or heart must be selected according to the type of wood concerned.

(2) Splits of knots and holes caused by knots must be grouted.

(3) Knots are considered grouped if the separation distance, measured from edge to edge, is less than 30 mm.

FREE CLASS

The free class covers all types that may be used for parquet flooring, which have a minimum average HB hardness value of 10 N/nm².

Hardness must be measured in accordance with the standard EN 1534.

Note: 1 N/nm² = approx. 1 kg f/mm²

LAYING PARQUET

Sub-floors:

Having the best sub-floor means achieving the best results in creating a timber floor.

Screed:

The screed, or generally the load-bearing layer, constitutes the support which must give adequate resistance to the various mechanical stresses imparted by the floor itself and the floor in use, like static and dynamic loads.

The screed is always laid on a vapour membrane (on upper levels) or on a vapour barrier (on ground floors or above basements) for insulation. The screed must be gapped and separated from the walls (perimeter joints) by suitable strips of compressible material.

To lay the timber floor the screed must have the following characteristics:

- a) compactness in its full thickness
- b) sufficient and constant thickness (5-7 mm cement screed; 3-5 mm anhydride screed).
- c) inflexibility, especially in areas where pipes pass below
- d) protection against water seepage and formation of condensation
- e) hard surface
- f) absence of live cracks and fissures
- g) dimensions, planarity and horizontal position
- h) level of surface texture
- i) cleanness
- j) moisture content of laying level and walls (1.7% by weight for the cement screed; 0.3% by weight for the anhydride screed).

CURING AND MOISTURE RETENTION OF THE SCREED

SCREED	SCREED	Hardening time (days):	Minimum drying time in ideal conditions (days, approx.):	Residual moisture content of balance (%):
TYPE:	THICKNESS:			
CEMENT	5 cm	28	approx. 60	1,7
CEMENT	8 cm	28	approx. 140	1,7
CEMENT	10 cm	28	approx. 200	1,7
ANHYDRIDE	3 cm	15	approx. 28	0,2
ANHYDRIDE	5 cm	15	approx. 40	0,2
Fast-drying hydraulic binder (300 kg/m ³)	5 cm	3 hours	approx. 1	1,5

The pre-finished parquet can be laid on old rigid floors, like tiles, ceramic, marble and derivatives, stones, etc. old floors in timber boards or panels.

Heated screed:

The heated screed is a cement base of hydraulic binders or anhydride, with water pipes running through its thickness to heat the spaces instead of by means of radiators or other external systems.

Laying conditions:

Having verified all the requirements necessary for laying the timber floor, the moisture content allowed, determined by carbide hygrometer, cannot be greater than the values of:

- cement screed or hydraulic binders (1,7%)
- anhydride screeds (0,3%)

The gradual warming up of the heating system has the function of stabilising the base, slowly reducing any tension and bringing it to a drying level corresponding to that of balance with the ambient conditions in which it will find itself, once in service, so that it cannot transfer moisture to the parquet.

The minimum thickness of the screed must be of 6cm of which 3 above the pipes.

Before putting the heating system into action the screed must have a minimum curing time of at least:

- a) cement screeds: 21 days
- b) anhydride screeds: 7 days
- c) fast-drying screeds: 3-4 days

Having cured the screed, the heating system is put into action gradually increasing the temperature of the water by about 10°C a day, until the maximum temperature of 50°C is reached. The maximum temperature of operation of the water must be kept constant for at least 10 consecutive days, airing the rooms adequately. The cooling down process will take place by gradually reducing the temperature of the fluid by 10°C a day until a temperature of 20°C is reached. The heating system must be kept off for 5 days before the parquet is laid and in all cases the surface temperature of the screed at the time of laying the floor must be around 15-20°C with a maximum relative environmental moisture content of 60%.

It is particularly important to maintain an adequate relative air moisture content (40%-60%) and a temperature of 18/22°C to guarantee a constant balance in the moisture content of wood, to prevent formations of fissures in the parquet.

The heated floor temperature must not exceed 26/27°C. To limit the formation of fissures of the parquet it is advisable to avoid covering the floors with carpets or other finishing materials. The timber floor can be laid on the heated screed using the glued or floating method.

Laying method: glued

Grinding, generalized consolidation and surface proofing are not usually allowed in heated screeds. It is always advisable to apply a suitable primer to improve bonding of adhesives used.

The surface temperature of the screed at the moment of laying must be approximately 15-20°C with a relative air moisture content lower than 60%. After the process of laying the floor the temperature must be approximately 15-20°C with a relative air moisture content lower than 60%.

Laying method: floating

This is carried out like on a non-heated screed. The thermal resistance of the condition of the layer of acoustic insulation (approx. 2.5mm) of compressible material which should be laid under the floor finish should be considered when assessing the overall thermal resistance.

AVERAGE THERMAL RESISTANCE OF THE PARQUET

TYPE OF PARQUET	THICKNESS/mm	THERMAL RESISTANCE (SQ MK/W)
Mosaic parquet	8	0,038
Lamparquet	10	0,048
Board	22	0,105
Stratified	10	0,048 - 0,065
Floating stratified	15	0,140

Types of parquet laying:

Antico Asolo floors can be laid using the glued or floating method. In addition to parameters specific for the type of laying technique and to parameters relevant to the surface condition, there are others which should not be underestimated so as not to compromise the final condition of the parquet. They are:

- a) environs must be completed with fully glazed frames;
- b) walls must be finished, dry and the moisture content 2%;
- c) vapour barrier must be in place;
- d) temperature of the rooms between +10°C and + 30°C;
- e) plumbing and electrical systems already been tested

Laying method: glued

To lay with glue, the sub-floor must have the requirements as specified in the chapter regarding sub-floors. Once checked that all parameters have been met, proceed as follows:

1. Lay the glue on the sub-floor which must remain dry, strong and clean;
2. The glue will be laid with a spatula of the number suited to the finish to be laid and perpendicular to the laying direction;
3. Respect the opened tin life of the glue.

Laying method: floating

Any screed able to resist the static and dynamic loads required for the floor is suitable for laying the floating parquet.

The floating parquet is always laid on a vapor membrane (or barrier if necessary) or a layer of acoustic insulation, usually composed of an underlay of compressible material or by a felt approximately 2.5mm thick. During laying the membrane or vapour barrier should be turned up on the walls behind the skirting board leaving a distance from the walls proportional to the dimension of the floor.

In general a perimeter gap of approx. 1 mm is recommended for a pavement of 4x4 m approx.

For larger sizes the perimeter gap must be proportionate. In any case, for gaps greater than 1 cm transversely with respect to the wooden element, an expansion joint is necessary. Around the columns or other element projecting from the screed, a gap of approx. 1 cm is recommended.

In respect of ramps and joints with other floors suitable expansion joints with joint cover profiles should be used.