

European grading rules for sawn oak

BOULES	Grain	Knots	Sapwood	Heart shakes	Other particularities	Not admitted
Q - BA	Straight-grained with centered heart	One intergrown sound knot admitted, with a maximum diameter of 20 mm per 2 m	Sound sapwood accepted on both sides of the board up to a width of 40 mm	Admitted but give rise to volume reductions	Fine and semi-fine grain. Isolated occurrence of one of those particularities on a board can be tolerated: frost split, ring shake, star shake, surface bark pocket	Curly grain, enclosed sapwood, red heart, brown rot, black streaks, stain, rot, through bark pocket, spiral grain
Q - B1	May be slightly angled relative to the log's axis	One intergrown sound knot admitted with a maximum diameter of 20 mm per 2 m	Sound sapwood accepted on both sides of the board up to a width of 40 mm	Admitted but give rise to volume reductions	Isolated occurrence of one of those particularities on a board can be tolerated: frost shake, ring shake, star shake, red heart, black streaks, stain, rot, bore holes	Curly grain, enclosed sapwood, spiral grain, through bark pocket
Q - B2	Sloping or twisted grain is permitted	Sound knots or cat's paws permitted to the limit of one knot with a maximum diameter of 80 mm per 2 m	Sound sapwood accepted		Isolated occurrence of one of those particularities on a board can be tolerated but give rise to volume reductions: heart shake, frost shake, ring shake, star shake, unsound sapwood, stain, rot, bore holes	Through sapwood, enclosed sapwood
Q - B3	No limitation of slope	Admitted without limitation			Admitted without limitation unless contractually excluded	

SQUARE EDGED	Grain	Knots	Sapwood	Other particularities
Q - FA (roughly corresponds to former choice 1, first choice, 4 clear sides)	Straight-grained and exempt of any deteriorations or sawing defects on all 4 sides	Not accepted	Q - FA: No sapwood tolerated Q - FAX: sound sapwood limited to 2/3 the thickness Q - FAXX: Through sound sapwood	According to terms of contract: colour, grain, quarter sawn or 3/4 sawn
Q - F1a (corresponds to former choice 3/4 clear sides)	Straight-grained sawings exempt of all deteriorations	20 % of the pieces may present Intergrown sound knots with a maximum diameter of 10 mm, or its equivalent per linear meter, or per piece if smaller than 1 m	Q - F1a: No sapwood tolerated Q-F1aX: Sound sapwood limited to 2/3 the thickness Q-F1aXX: Through sound sapwood	According to terms of contract: colour, grain, quarter sawn or 3/4 sawn
Q - F1b (roughly corresponds to former choice bis)	Almost straight-grained	2 intergrown sound knots of 12 mm maximum per linear meter on each side	Q - F1b: No sapwood tolerated Q-F1bX: Sound sapwood limited to 2/3 the thickness Q-F1bXX: Through sound sapwood	According to terms of contract (dimension cut timber): colour, grain, etc
Q - F2 (corresponds to former choice 2)		Small knots without limitation - 3 intergrown sound knots of maximum diameter equivalent to 1/3 of the width, limited to 25 mm per linear meter, on each side	Q - F2: No sapwood tolerated Q-F2X: Sound sapwood limited to 2/3 the thickness Q-F2XX: Through sound sapwood	

Q - F3 (corresponds to former choice 3, beau rustique)		Small knots without limitation - 3 intergrown sound knots of maximum diameter equivalent to 1/2 of the width of the side, on each side, but limited to 40 mm maximum per linear meter or its equivalent	Q - F3: No sapwood tolerated Q-F3X: Sound sapwood limited to 2/3 the thickness Q-F3XX: Through sound sapwood	
Q - F4 (old choice, apart from the rules)		Intergrown sound knots without limitation, of maximum diameter equivalent to 1/2 of the width, but limited to 70 mm. 1 dead knot of 20 mm per linear meter admitted on each side	Q - F4: Traces of sapwood admitted on both sides, limited to 1/2 of the thickness. Q - F4XX: Through sound sapwood without limitation.	

SQUARED BEAMS	Grain	Knots	Sapwood	Face shakes	Other particularities	Not admitted
Q - PA	Slope of grain < 7 % admitted on one side and must not exceed 10 %	Intergrown sound knots admitted as long as the diameter of each one does not exceed 1/3 of the width of the side or edge. Two sound dead knots with a diameter of < 15 mm per meter are admitted.	Slight and sound on maximum two edges, if inferior to 15% of the width of the sides or edges.		Slight traces of heart tolerated on one side, enclosed heart admitted, black streaks tolerated on 10 % of the pieces of the batch, superficial side shakes tolerated on the extremities	Heart shakes, ring shakes, frost cracks, curly grain, bark pocket, enclosed sapwood, stain, bore holes, red heart, brown rot
Q - P1	Slope of grain < 12 % admitted on one side and must not exceed 20 %	Intergrown sound knots admitted as long as the diameter of each one does not exceed 1/2 of the width of the side or edge. Two sound dead knots are permitted per linear meter as long as their individual diameter does not exceed one quarter of the width of the side or edge.	Sound sapwood accepted on edges as long as the diameter does not exceed 1/2 of the width of the side or edge		Tolerance of slight wane on maximum 2 edges as long as the width remains 90% clear. Slight traces of heart tolerated on 2 sides - enclosed heart admitted - red heart admitted. On 10% of the pieces of the batch black streaks, brown rot, curly grain, bark pocket can be present. Heart shakes, ring shakes and frost cracks can be present on the ends of the pieces, as long as sides remain clear. Face shakes tolerated on the extremities	
Q - P2	Slope of grain of 18 % admitted on one side and must not exceed 25 %	Unsound or rotten knots are tolerated	Sound sapwood admitted without limitation - unsound sapwood admitted on the edges to the same degree as waness	Face shakes of maximum 10 cm admitted.	Tolerance of wane without limitation as long as 60% of the width of the corresponding sides or edges remain clear - all other particularities admitted with the exception of dead knots with individual diameter	Stain and rot

					exceeding one third of the width of the side or edge - black bore holes admitted - deterioration caused by fungal attacks are not admitted on the sides	
--	--	--	--	--	---	--

Reference: European Norm EN 975-1 "Sawn timber - Appearance grading of hardwoods - Part 1 (oak and beech)" adopted by the European Committee for Standardization (CEN) in 1995 (improved in 1999) and applied by national organisations (see <http://www.cenorm.be/>)