

## Wood and manufacture defects limitation norms for outer layers

WOOD AND MANUFACTURING DEFECTS	Grade I	Grade II	Grade III	Grade IV
1. Pin knots	permitted			
2. Live sound knots (light and dark)	permitted light up to 15 mm diameter with crack width up to 0.5 mm, 5 per m <sup>2</sup>	permitted diameter up to 25 mm with crack up to 1 mm., 10 per m <sup>2</sup>	allowable with crack width up to 1 mm	permitted
3. Partially intergrown knots	permitted in size and number of falling out knots	permitted in number of live knots with diameter up to 15 mm, 10 per m <sup>2</sup>		allowable with diameter up to 40 mm without number limitation
4. Dead, falling out knots, their holes (without wane)	permitted in number of live knots with diameter up to 6 mm 3 per m <sup>2</sup>		allowable with diameter up to 6 mm without number limitation	allowable with diameter up to 40 mm without number limitation (permitted wane near knots with width 5 mm)
5. Closed cracks	permitted up to 200 mm, 5 per m of the panel width	permitted up to 300 mm, 5 per m of the panel width	permitted at edges and in the middle	
6. Open splits, open seam on spliced veneer	not permitted	permitted with length up to 250 mm with width up to 2 mm, 3 per m. of the panel width	permitted with length up to 600 mm with width up to 2 mm, 2 per m. of the panel width + permitted with length up to 600 mm with width up to 5 mm on conditions of putty repair	permitted with length up to 800 mm with width up to 10 mm without number limitat
7. Wood defects (slope of grain, cross grain, curl, eye)	permitted			
8. Wood defects (sound inwane light and dark)	only light inwane permitted	light inwane permitted, dark inwane permitted in number of sound knots		
9. Wood defects (open inwane)	permitted in number of dead knots			
10. Sound color changes (false core)	not permitted	permitted up to 25 % panel area		permitted up to 75 % panel area
11. Sound color changes (mottles, veins, vein traces)	permitted light with length up to 175 mm with width	permitted with length up to 250 mm with width up to 10 mm, 10 per m <sup>2</sup>	permitted	

	up to 4mm, 3 per m2			
12. Sound color changes (veins groups)	permitted light 30_30 mm., 1 per m2	permitted 60_40 mm., 1 per m2	permitted	
13. Mineral streaks; secret stains (blue satin, color laburnum stains), storage color changes	permitted up to 30 % panel area	permitted up to 50 % panel area (together with false heart)	permitted up to 75 % panel area (together with false heart)	
14. Biological defects (wormholes)	permitted in the number of dead knots			
15. Color defects with partial wood defects	not permitted			
16. Plug repair	not permitted	permitted up to 8 per m2, shall be matched for grain	permitted with 1 mm gap from one side or 0,5 mm from 2 sides	permitted
17. Double plug repair	not permitted	permitted one per m2	permitted	
18.Split repair Putty or plug repair - permitted if agreed with customer	not permitted	splits opened more then 2 mm should be repaired by glued veneer patches and be well matched for color and grain	splits opened more then 5 mm should be repaired by glued veneer patches and be well matched for color and grain	permitted
19. Beads from patch piece, sanding beads	not permitted	permitted with length up to 200 mm width 10 mm, 3 per panel	permitted with length up to 600 mm, width 10 mm, 5 per panel	permitted
20. Overlapping	not permitted	permitted with length up to 100 mm with width up to 2 mm., one per meter of the panel width	permitted with length up to 300 mm with width up to 2 mm, two per meter of the panel width	permitted
21. Manufacturing stains (beam traces, water stains)	not permitted	permitted not more then 10% panels in a bundle	permitted	
22. Glue seepage	not permitted	permitted up to 2 % panel area (for width from 3 to 21 mm) permitted up to 5 % panel area (for width 24 mm and more)	permitted up to 5 % panel area (for width from 3 to 21 mm) permitted up to 10 % panel area (for width 24 mm and more)	permitted
23. Mechanical damage (splits, kerfs)	permitted in number with dead knots			
24. Scratches, scars, pimples, low spots, ridges	not permitted		permitted up to 0.5 mm height (depth) with length up to 120 mm with width up to	permitted

			10 mm	
25. Warp	in plywood up to thickness 6.5 mm ignored, more than 6.5 mm permitted not more than 15 mm per one meter of the panel diagonal length			
26. Glue thread	Not permitted		permitted	
27. Blisters, delamination, wane	not permitted			
28. Sander skips (nonuniform sanding)	not permitted	permitted 5 mm from the edge	permitted up to 5 % panel area	permitted up to 50 % panel area
29. Grinding of outer layers	not permitted		permitted up to 1 % panel area (for width from 3 to 21 mm) permitted up to 2 % panel area (for width 24 mm and more)	permitted up to 5 % panel area
30. Metal inclusions	not permitted		permitted staples from nonferrous metal	
31. Edge defects because of grinding, cuts, veneer shortage	not permitted	permitted with width up to 5 mm on edge		permitted with width up to 10 mm
32. Fiber tear	not permitted		permitted in number of dead knots	permitted
33. Corrugation (ripples, hairiness)	not permitted	permitted up to 5 % panel area	permitted	
34. Pockets (without wane)	not permitted	permitted in size of group veins (60_40 mm) 1 per m2	permitted	