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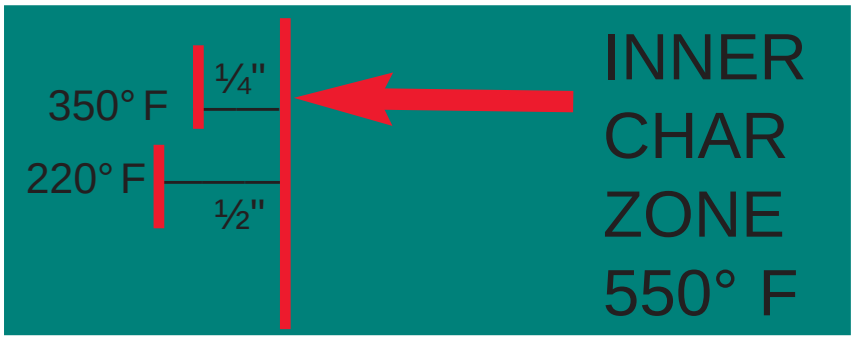
®

Fire Performance & Char Rate

The amount of load a structural wood member can carry depends on the area of its cross-sectional dimensions (e.g. 2x4, 2x6, etc.). Because of this, the amount of charring that occurs in any given area is the most important factor in the ability of structural wood members to endure a fire.

When wood is first exposed to fire, the wood chars and eventually flames. Ignition occurs in about 2 minutes under the standard ASTM E119 fire-test exposures. Charring into the depth of the wood then proceeds at a rate of approximately 0.8 mm/min for the next 8 minutes (or 1.25 min/mm). Then, due to the insulating affect of the char layer, the charring rate decreases to 0.6 mm/min (1.6 min/mm). MASTER PLANK® consists of wood veneer and phenal formaldehyde adhesive. This adhesive bonds veneers together under high heat and pressure called a thermo-set adhesive. When fully cured, the adhesive is inert and will begin to burn when the temperature exceeds 700°, well in excess of the 480° of ignition temerature of wood. Because of this the char rate for MASTER PLANK is somewhat slower than that of wood itself.



Based on testing carried out by the Technology Research Center of Finland, the charring rate for is better than other softwood species used in construction. (See chart)

SPECIES	Linear Char Rate	
Southern Pine	.80 mm/min	1.9 in/hr
Redwood	.78 mm/min	1.84 in/hr
Engleman Spruce	.64 mm/min	1.51 in/hr
Douglas Fir	.60 mm/min	1.42 in/hr
MASTER PLANK®	.59 mm/min	1.39 in/hr

Contact a Finnforest USA representative for more information about Master Plank® LVL boards.

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