

CHANGE TYPE: Addition

CHANGE SUMMARY: Equivalent size dimensions for structural composite lumber (SCL) in relationship to solid-sawn Type IV heavy-timber members have been introduced into Table 602.4.

2015 CODE: 602.4 Type IV. Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces. The details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall also be permitted. ~~Fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.~~ Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For glued-laminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. Cross-laminated timber (CLT) dimensions used in this section are actual dimensions.

602.4.1 Fire Retardant Treated Wood in Exterior Walls. Fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.

TABLE 602.4 Wood Member Size Equivalencies

Minimum Nominal Solid Sawn Size		Minimum Glued-Laminated Net Size		Minimum Structural Composite Lumber Net Size	
Width, inch	Depth, inch	Width, inch	Depth, inch	Width, inch	Depth, inch
8	8	6¾	8¼	7	7½
6	10	5	10½	5¼	9½
6	8	5	8¼	5¼	7½
6	6	5	6	5¼	5½
4	6	3	6⅞	3½	5½

For SI: 1 inch = 25.4 mm

CHANGE SIGNIFICANCE: Type IV buildings are designated as heavy-timber buildings. Heavy-timber members have large cross sections to achieve the slow-burning characteristic that made them common construction elements during the 1800s in the heavy industrial areas of the Northeast. Under a continued application of heat during a fire incident, charring continues, but at an increasingly slower rate, as the charred wood insulates the inner portion of the wood member. There is quite often enough sound wood remaining during and after a fire to prevent sudden structural collapse. Although today's construction methods result

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Type IV Member Size Equivalencies



Structural composite lumber

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in very few structures built as Type IV construction, it is not uncommon for buildings to contain one or more heavy-timber members. In keeping with the concept of slow burning by means of wood members with large cross sections, Table 602.4 specifies minimum nominal dimensions for wood members considered as heavy timber.

For years, only solid-sawn wood members were addressed in Table 602.4 establishing the minimum size of heavy-timber members. Glued-laminated sizes were first introduced into the IBC in the 2006 edition. New to the 2015 table are minimum net size dimensions for structural composite lumber (SCL). SCL includes a number of engineered wood products used for structural purposes. Through the process of layering dried and graded wood veneers, strands, or flakes with exterior type adhesives, structural wood members of various types are created.

Net dimensions of typical SCL members are similar to the net dimensions of nominal solid-sawn members; however, the minimum width dimensions are slightly less than the solid-sawn member widths and slightly greater than the glued-laminated member net widths. In order to determine the appropriate net dimensions for SCL members that have now been incorporated into Table 602.4, the initial section properties of solid-sawn and glued-laminated members were compared with the initial section properties of SCL members. Then, utilizing the common net widths of SCL members, the minimum net depths were established.