

## Product Technical Statement

NCC: 2019 A5.2 (1)(f)

### Smart10™ Stud

<b>Product description</b>	<p>Smart10® is a Laminated Veneer Lumber (LVL) in 90 x 35 and 90 x 45 mm sizes only. Smart10 uses a Melamine Urea Formaldehyde adhesive (Type B), thus the LVL is not stamped AS/NZS 4357 compliant because that Australian standard references phenolic resins only. Notwithstanding this, Table 1 of AS/NZS 2754.1:2016 Adhesives for timber and timber products, Part 1: Adhesives for manufacture of plywood and laminated veneer lumber (LVL), lists Melamine-urea-formaldehyde as a Type B bond, suitable for service class 1 and 2 (Interior) applications (Interior).</p> <p>Smart10 is a trademark of Tilling Timber Pty Ltd.</p>
<b>Application and Intended Use</b>	<p>Smart10 is suitable for use as a wall stud in the framing of domestic, commercial, industrial, and other similar structures.</p>
<b>Compliance with the National Construction code</b>	<p>Smart10 will, if specified from the respective Smart10 span tables, SmartFrame software or via calculations from a professional engineer, and utilised in accordance with the specification and construction detailed by the Smart10 Design Guide or software, meets the following provisions of the NCC Building Code of Australia.</p> <p><b>Volume 2 - Class 1 and 10 Buildings</b></p> <p>The performance requirements of Part 2.1 Structure P2.1.1 (a), (b) and (c) are met via compliance with the Acceptable Construction Practice provisions of 3.0.2, 3.0.3, 3.0.4 and 3.0.5.</p> <p><i>3.0.2 Resistance to actions:</i> Via compliance with BCA Part 3.0 Clause 3.0.3 and 3.0.4.</p> <p><i>3.0.3 Determination of individual actions:</i> Via compliance with BCA Part 3.0 Clause 3.0.3 (a) - AS/NZS 1170.1 and AS 1720.3 (b) - AS/NZS 1170.1 and AS 1720.3, and (c) AS 4055. For snow, ice, and earthquake actions, only the actions catered for in AS 1684 and AS 1720.3 are included.</p> <p>Action not covered by B1.2 (a), (b) and (c) are liquid pressure and groundwater, earth pressure, and differential and ground movement actions. Additional actions covered are the time-dependent shrinkage and creep), thermal effects, and construction activities limited to AS 1720.3 restrictions.</p> <p>Shrinkage: via Smart10 being manufactured from seasoned timber fibre components with a moisture content within the range of applications defined above</p> <p>Creep: via a Duration of Load factor <math>j_2</math> from AS 1720.1, for seasoned hardwood.</p> <p>Thermal effects: via design to AS 1720.1.</p> <p>Construction activities: via the Smart10 Design Guide detailing the required storage and handling provisions and guidance about the effects upon strength and stiffness caused by high level exposure to moisture.</p>

	<p><i>3.0.4 Determination of structural resistance of materials and forms of construction:</i></p> <p><i>(c) Termite Risk management Part 3.1:</i></p> <p>Compliance with 3.1.4.2 (b) (vi) is achieved by Smart10 being preservative treated in accordance with Appendix D of AS 3660.1. Evidence of Suitability report in conformance with A5.2(1)(e) prepared by Dr Harry Greaves confirms testing of sufficient imidacloprid in the outer surface veneers to exceed the specified requirements of AS/NZS 1604.1 2021, clause 3.2.6 and Table 3.3(C). This report is available on request.</p> <p><i>(h) Timber construction Part 3.4:</i> Smart10 is designed in accordance with AS 1720.1 and AS 1720.3. Smart10 complies with AS 1720.1 by Clause 1.3.1 (h) Other timber product or grades. The Characteristic properties and duration of load effects of Smart10 are determined AS/NZS 4063. Characteristic strength and serviceability values have been determined by a 3<sup>rd</sup> party product testing laboratory SGS Vietnam Ltd in conformance with A5.2(1)(d). A Copy of the qualification test results is available on request.</p> <p>Construction and installation practices are to be carried out in accordance with the relevant Standards - AS 1684 Parts, 2, 3 and 4, and the Smart10 Design Guide and span tables.</p> <p>For Queensland, Smart10 meets the requirements of Schedule A, B or C of Book 2 - Construction timbers in Queensland Book 1 and 2 for hardwoods, mixed rainforest, in a protected environment.</p> <p><i>3.0.5 Structural Software:</i> Structural software via compliance with the ABCB Protocol for Structural Software. The SmartFrame software has been developed for the purpose of:</p> <ol style="list-style-type: none"> <li>1. Providing engineering analysis (both the generation of design action effects and the determination of design capacities) of appropriate sizes of SmartJoists and a range of connection systems listed within the software. This analysis is based upon the load patterns, strength and serviceability limit states defined within AS 1720.3 -2016</li> <li>2. Providing a library of all the Design and Installation Guides relevant to any SmartFrame product that can be designed and detailed via the SmartFrame software.</li> </ol> <p>The SmartFrame software is 3<sup>rd</sup> party audited and certified to comply with the ABCB Protocol: Structural software.</p> <p>A copy of the Certification may be found on the Tilling Timber website at <a href="http://www.tilling.com.au">www.tilling.com.au</a>.</p> <p><i>P2.1.2 Building in flood areas</i></p> <p><i>The performance requirement P2.1.2(b)(vi) is met via</i> Smart10 being manufactured with Type B Bond adhesives in compliance with AS/NZS 2654.1 Adhesives for timber and timber product Part 1 Adhesives for the manufacture of plywood and laminated veneer lumber (LVL).</p> <p>In QLD, the performance requirement P1 of MP3.5 Constructions of building in flood hazard areas is met where:</p> <ol style="list-style-type: none"> <li>(a) If the local government has declared, under section 13 of the Building Regulation 2006, the finished floor level for a class 1 building—the finished floor level of the building complies with the level declared.</li> </ol> <p>or</p> <ol style="list-style-type: none"> <li>(b) Where the finished floor level of the building complies with section 2.4 of the ABCB Standard: Construction of building in flood hazard areas.</li> </ol>
--	---

	The SmartFrame document SmartFrame EWP in flood hazard areas further details procedures to follow post flood to quickly return the Smart10 to pre flood moisture contents.
<b>Limitations of Use</b>	The use of Smart10 is limited to wall stud applications only. Refer to the current Smart10 literature for information, limitations and warnings concerning the storage, handling, installation, and usage of Smart10.
<b>Condition of Use</b>	it is a condition of use that Smart10 is installed and detailed as per the Smart10 Design Guides.
<b>Quality Assurance</b>	Compliance with process-based quality control requirements for Smart10 is third party audited by SGS Vietnam Ltd
<b>Sustainability</b>	<p>Smart10 is manufactured from wood fibre from sustainably managed forests and is produced under a FSC certified chain of custody system. Certificate Code SA-COC-007323, License Code FSC-C118255.</p> <p>Wood is the right choice for a host of construction applications. It is the earth's natural, energy-efficient, and renewable building material. The miracle in today's engineered wood products is that they make more efficient use of the wood fibre resource to make stronger Plywood, Oriented Strand Board (OSB), I-joists, Glued Laminated Timbers (GLT) and Laminated Veneer Lumber (LVL). That is good for the environment and good for designers seeking strong, efficient, and striking building design.</p> <p>For every tonne of wood grown, a young forest produces 1.07 tonnes of oxygen and absorbs approximately 1.47 tonnes of carbon dioxide. This is good news for a healthy planet. Wood is a perfect material for the environment, for design, and for strong, lasting construction.</p>
<b>Installation requirements</b>	Smart10 designed using the SmartFrame software solutions should be installed in accordance with details included within the relevant project documentation produced by the SmartFrame software in combination with the project structural drawings. Where not specifically shown on project drawings, installation should be in strict accordance with the Smart10 Design Guide and span tables.
<b>Maintenance Instructions</b>	Smart10 specified and installed as per this Product Statement will not require maintenance.
<b>Product support</b>	<p>Tilling Timber Pty Ltd provides extensive product support for our full range of wood-based building products:</p> <ol style="list-style-type: none"> <li>1. Tech Support Customer Helpline 1300 66 86 90 or <a href="mailto:Techsupport@tilling.com.au">Techsupport@tilling.com.au</a> to access a team of Technical Experts and Structural Engineers</li> <li>2. Tilling Timber website: <a href="http://www.tilling.com.au">www.tilling.com.au</a>. Contains the latest information regarding our products including Product Guides, Specification and Installation Guides, Technical Notes, Information Bulletins, CAD Drawings, Design Software, and other useful information. It also included a "Contact Us" option where product support can be requested.</li> </ol>

Information contained within this Technical Statement is specific to the Smart10™ and must not be used with any other LVL products no matter how similar they may appear. For further information contact Techsupport on 1300 66 86 90 or [techsupport@tilling.com.au](mailto:techsupport@tilling.com.au).