Glossary of Key Terms

Fire Performance of Timber & Hybrid Structures

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- **Active Fire Protection Measures:** Systems that require activation to detect or suppress a fire or warn occupants (e.g., sprinklers, smoke alarms, fire alarms).
- **AS 1530:** Australian Standard for fire resistance testing of building materials.
- **AS 1720:** Australian Standard for structural design of timber in fire conditions.
- **AS 3959:** Australian Standard outlining requirements for construction in bushfire-prone areas based on Bushfire Attack Levels (BAL).
- **Bushfire Attack Level (BAL):** A measure of the potential for a building to be exposed to bushfire attack.
- **Char Layer:** The layer of carbonised material that forms on the surface of mass timber when exposed to fire, providing insulation to the unburned core.
- **Charring Rate:** The rate at which the surface of timber is consumed by fire, typically measured in millimetres per minute.
- **CLT (Cross-Laminated Timber):** An engineered wood product consisting of layers of timber boards stacked in alternating directions and glued together.
- **Compartmentation:** The division of a building into fire-resistant compartments to limit the spread of fire and smoke.
- **Computational Fire Modelling:** The use of software to simulate fire growth, spread, heat transfer, and smoke movement within a building.
- **Conduction:** The transfer of heat through direct contact between solid materials.
- **Convection:** The transfer of heat through the movement of hot gases or fluids.

- **CPD (Continuing Professional Development):** Ongoing education and training to maintain professional competence.
- **Deemed-to-Satisfy (DTS) Provisions:** Prescriptive rules and specifications outlined in the National Construction Code that, if followed, are deemed to satisfy the performance requirements.
- **Encapsulation:** Covering timber elements with fire-rated materials (e.g., plasterboard, intumescent coatings) to protect them from fire exposure.
- **Fire Engineering:** The application of engineering principles to protect people, property, and the environment from fire.
- **Fire Resistance Level (FRL):** A rating indicating how long a building element can withstand fire conditions while maintaining its structural adequacy, integrity, and insulation (e.g., 60/60/60).
- **Fire Separation:** The use of fire-rated construction to separate different areas within a building or adjacent buildings to prevent fire spread.
- **Fully Developed Fire:** The stage of a fire where maximum temperatures are reached and the fire spreads rapidly throughout the compartment.
- **Glulam (Glued Laminated Timber):** An engineered wood product made by gluing together layers of dimension timber.
- **Hybrid Structures:** Building systems that combine different construction materials, such as timber with steel or concrete.
- **Intumescent Coatings:** Fire-resistant coatings that swell and form a protective insulating layer when exposed to heat.
- **Ignition:** The point at which a fuel source first catches fire.
- **LVL (Laminated Veneer Lumber):** An engineered wood product made by bonding thin wood veneers together with adhesive.
- **Mass Timber:** Engineered wood products (like CLT, Glulam, LVL) used as structural elements in buildings.
- **National Construction Code (NCC):** The primary regulatory framework for building and plumbing in Australia, including fire safety requirements.
- **Passive Fire Protection:** Building elements and materials that resist fire without requiring activation (e.g., fire-rated walls, charring of mass timber).

- **Performance Requirements:** Objectives outlined in the NCC that a building must achieve to ensure safety, health, and amenity.
- **Performance Solution:** An alternative pathway to NCC compliance where a design is demonstrated to meet the Performance Requirements through engineering analysis, testing, or expert judgment, rather than following prescriptive DTS provisions.
- **Radiation:** The transfer of heat through electromagnetic waves.
- **Spalling:** The breaking off of layers of concrete when exposed to high temperatures during a fire.
- **Structural Integrity:** The ability of a building element to maintain its load-bearing capacity during fire exposure.
- **Thermal Expansion:** The tendency of matter to change in volume in response to a change in temperature.