

Appendix B: Glossary

TERM	DEFINITION
A-frame	A rack shaped like an 'A' used for upright storage of precast concrete elements. An A-frame may also be used on trucks and trailers to transport precast concrete elements.
Anchor	A proprietary cast-in item or post-installed fixing used during handling, transport or erection; includes chemical anchoring systems. A post-installed fixing is also known as an Alternative Lifting Device. See also <i>Lifting insert</i> .
Base restraint	A restraint that stops a precast concrete panel kicking in, or kicking out, during the erection process.
Brace	A structural member, normally placed diagonally and firmly attached to resist horizontal movement and provide stability. Braces are commonly used as temporary members to resist lateral loads on precast concrete elements. In these guidelines, 'brace' refers to a diagonal or non-vertical member and 'prop' refers to a vertical member resisting a vertical load.
Characteristic strength	The characteristic strength for high structural reliability (eg structural steel; lifting equipment) is determined as the 5% fractile with a confidence limit of 90%. This means that people can be 90% confident that the strength will exceed the characteristic strength 95% of the time.
Chartered Professional Engineer (CPEng)	An engineer registered under the <i>Chartered Professional Engineers of New Zealand Act 2002</i> with a current registration certificate. See engineeringnz.org for more information.
Competent person	In these guidelines, a competent person is someone who has the relevant knowledge, experience and skill to carry out a particular task using appropriate techniques and procedures; and: <ul style="list-style-type: none"> - has a relevant qualification proving that they have the knowledge, experience, and skill required; or - evidence (such as training records) has been kept by the PCBU to demonstrate that the person has the required knowledge, experience, and skill.
Contract drawings	See <i>Drawings</i> .
CPEng	See <i>Chartered Professional Engineer</i> .
Crane	A powered device equipped with mechanical means for raising or lowering loads suspended by means of a hook or other load-handling device; and that can, by the movement of the whole device or of its boom, jib, trolley or other such part, reposition or move suspended loads both vertically and horizontally; and includes all parts of the crane down to and including the hook or load-handling device, and all chains, rails, ropes, wires, or other devices used to move the hook or load-handling device; but does not include lifting gear that is not an integral part of the crane.
Crane platform	The floor slab, suspended slab, structure or ground – and surrounding area – that is required to support a crane and its lifted load.
Crush zone	An area where a person could be crushed between a transported precast concrete element and a solid object.
Cyclic load	A recurring load, or a recurring reversing load.
Deadman	Typically an in-ground concrete pile or footing specially designed to resist lateral bracing loads. A deadman connects braces to the supporting ground.
Designer	A person who is qualified because of their training and experience to design a device, system or element to serve a specific purpose.
Dogman	A person responsible for the safe rigging and movement of a load, who knows how to use the correct sling and understands the crane they are working with. A dogman is competent to do slinging or lifting tasks and direct position loads. (See also <i>Rigger</i> .)

TERM	DEFINITION
Drawings	<p>a. Shop drawings: detailed drawings of individual precast concrete elements, produced solely for the manufacture of those elements.</p> <p>b. Contract drawings: drawings forming part of the contract between the principal or client and the head contractor, including structural drawings, architectural drawings, and other drawings.</p> <p>c. Structural drawings: drawings supplied by a structural design engineer in support of a building consent application and forming part of the contract drawings.</p> <p>d. Other drawings: may include various temporary works drawings that could cover, among other items, things such as bracing, propping, location and arrangement of the precast concrete elements in their final location. There could be a whole range of other drawings used on a construction project. The drawings will vary depending on the circumstances.</p>
Drop zone	The area where a precast concrete element would land following an uncontrolled fall. For example, during lifting or placing by a crane.
Element	See <i>Precast concrete element</i> .
Engineer	See <i>Chartered Professional Engineer</i> .
Exclusion zone	A defined area (zone) that non-essential people cannot enter when particular tasks are being carried out.
Expansion anchor	A bolt that is designed to be inserted into a hole drilled in concrete, with a device at one end that expands when the bolt is tightened to prevent it from being pulled out.
Factor of safety	The factor of safety is the ratio between the working load limit (WLL) and the characteristic strength.
Falsework	The temporary structures and/or systems used to support a permanent structure during erection until it becomes self-supporting. Falsework is a part of temporary works. See <i>Temporary Works</i> .
Fixings	Cast-in items used to hold the precast concrete element in place on the building. For example, inserts, weld plates, or channels.
Footing	See <i>Foundation</i> .
Foundation	The foundation connects a structure (eg a building) to the ground and transfers loads from the structure to the ground. Foundations include footings. A footing sits under the base of a wall or column and distributes the load.
Hazard	Anything that could cause harm, including behaviour that has the potential to cause death, injury or illness.
Health and Safety Committee (HSC)	A committee enabling businesses and worker representatives to meet regularly and work co-operatively to improve health and safety at work. HSCs bring together workers and management to develop and review health and safety policies and practices for the workplace. HSCs make it easier for the business and workers to co-operate on ways to ensure workers' health and safety.
Health and Safety Representative (HSR)	<p>A worker elected to represent the members of their work group on health and safety matters. HSRs play an important role in keeping workplaces healthy and safe. They provide a voice for workers who might not otherwise speak up. By representing workers, HSRs provide a link between workers and management.</p> <p>HSRs have legally defined functions and powers. After completing the NZQA unit standard 29315, an HSR has the power to issue a Provisional Improvement Notice (PIN) and can direct unsafe work to cease.</p>
In-ground mass block	See <i>Deadman</i> .
In situ concrete	Concrete that is cast in its final position (rather than being cast in one place and then later moved to another position).
Insert	See <i>Lifting insert</i> .
Levelling shims	Either a single thin strip or a series of thin strips of a suitable material placed under precast concrete elements to help with final positioning.

TERM	DEFINITION
Lifting beam	A beam that carries loads using two or more lifting points – while being supported from one or more different points.
Lifting clutch	A device that connects directly to the cast-in lifting anchor to enable attachment to and transfer of load to a crane, or other lifting or handling equipment.
Lifting device	A device fitted directly or indirectly to the hook or another coupling device on a crane, hoist or winch without affecting its integrity.
Lifting equipment	Equipment that connects a precast concrete element to a crane or other lifting device. (Does not include anything that is an integral part of a crane or other lifting device or is cast into the precast concrete element.)
Lifting insert	Within these guidelines a lifting insert refers to a proprietary product cast in to a precast concrete element at the time of manufacture to provide a point of attachment to the element, for example for lifting equipment, brackets or plates.
Load restraint	Lashings, baulking arrangements (eg chocks) and load friction that prevent movement of a load during transport. See the New Zealand Transport Agency's <i>The Official New Zealand Truck Loading Code</i> .
Non-standard lift	A lift that requires specific rigging or load equalisation procedures to ensure a load is distributed appropriately to the lifting anchors. Any lift requiring attachment to more than two lifting anchors in a beam, or three lifting anchors for a flat-lifted precast concrete element, will normally be a non-standard lift.
On-ground mass block	A specifically designed concrete block that supports the base of the brace. Lateral loads are resisted by the mass of the concrete block, a horizontal brace, and the friction between the concrete surface and the supporting ground.
PCBU	Person conducting a business or undertaking. In most cases a PCBU will be a business entity, such as a company. However, an individual carrying out business as a sole trader or self-employed person is also a PCBU. A PCBU does not include persons who are solely workers or officers of a PCBU, volunteer associations with no employees, or home occupiers that employ or engage a tradesperson to carry out residential work.
Plant	Includes: a. any machinery, vehicle, vessel, aircraft, equipment (including personal protective equipment), appliance, container, implement, or tool; and b. any component of any of those things; and c. anything fitted or connected to any of those things.
Precast concrete	A concrete element cast in other than its final position (see <i>In situ concrete</i>).
Precast concrete element	Any item of precast concrete (such as a precast beam, column, floor slab, wall panel, cladding panel, pile, pile cap, or cruciform).
Prop	A structural member providing temporary support for a precast concrete element. Commonly used to support floors and beams. In these guidelines, 'prop' refers to a vertical member resisting a vertical load and 'brace' refers to a diagonal or non-vertical member. (Note that diagonal bracing is sometimes referred to as a 'panel prop' or 'bracing prop'.)
Rebar	See <i>Reinforcing steel</i> .
Reinforcing steel	Steel with a circular or practically circular cross-section, suitable for reinforcing concrete. Also known as rebar (reinforcing bar). Reinforcing steel is available as bars, coils, wire strand, or mesh, depending on the application.
Reinforcement	Refers to any of the following: a. structural reinforcement, including reinforcing steel and pre-stressing tendons, as required by the contract documents b. reinforcement additional to the structural reinforcement, provided to resist forces caused by transport or erection loads, and c. reinforcement which is placed in conjunction with lifting, bracing and fixing inserts so that they can attain their design capacities.

TERM	DEFINITION
Restraint	Generally refers to something used to limit movement (including buckling), but the exact meaning will depend on the context. For example: <ul style="list-style-type: none"> - A <i>restraint line</i> is a sling, rope or chain attached from the suspended load to the telescopic handler and the dogman/rigger, to help to prevent the suspended load swinging back and forth. See also <i>Load restraint</i> .
Rigger	A rigger has broader responsibilities than a dogman and may be responsible for work that a dogman is not qualified to perform. A rigger is competent to sling loads and direct the lifting and placing operations of a crane. The rigger may also be competent to develop or amend a lift plan.
Rigging	Mechanical load-shifting equipment and associated gear used to: <ol style="list-style-type: none"> a. move, place or secure a load including plant, equipment, or members of a building or structure b. ensure the stability of those members c. set up and dismantle cranes and hoists (other than the setting up of a crane or hoist which only requires the positioning of external outriggers or stabilisers).
Safety factor	See <i>Factor of safety</i> .
Safe working load	The maximum load that can safely be lifted by a piece of lifting equipment.
Shop drawings	See <i>Drawings</i> .
Site supervisor	Someone at the workplace who has authority over operations on-site. They have delegated responsibility by the head contractor or the person responsible for the operation and safety of the site.
Spalling	The unintentional shearing off of a part of the precast concrete element (eg around lifting anchors). Normally due to a concentration of load or to sliding.
Spreader beam	A compression member that spreads lifting ropes, chains or slings while an element is being lifted to change the angle of the force applied to the lifting anchors.
Standard lift	A lift that requires no special rigging or load equalisation procedures. Generally not more than two anchors should be capable of carrying the applied load with the required factor of safety for a beam, or three anchors for a flat-lifted precast concrete element.
Strongback	A device, beam or girder temporarily fixed to a precast concrete element to give it extra strength or support during handling, transport or erection.
Structural drawings	see <i>Drawings</i> .
Tag line	A rope used to control the load during lifting or positioning. The rope needs to be of suitable strength, construction and length.
Temporary works	Temporary facilities (such as fencing, site offices and workers' facilities), and objects such as scaffolding, safety barriers and falsework, that are required on-site only until the permanent works are completed.
Tilt panel	A concrete element, normally cast horizontally at or near its final location. It is often lifted to the vertical with one edge staying on the casting floor.
Toast rack	A stand shaped like a toast rack, used for upright storage of precast concrete panels. Toast racks should be designed and installed by a competent person who specifies the rack capacity and procedures for its use.
Worker	An individual who carries out work in any capacity for a PCBU. The term 'worker' covers almost all working relationships. A worker may be an employee, a contractor or sub-contractor, an apprentice or trainee, an outworker, a person on work experience or a work trial, or a volunteer worker.
WLL	Working load limit.