

A yellow square with the text 'Concrete Masonry Blocks' in a bold, black, sans-serif font, framed by white corner brackets.A yellow rectangular box containing the text 'CONCRETE NZ - MASONRY INFORMATION SHEET #1' in a bold, black, sans-serif font.

Concrete masonry construction (or blockwork) is a permanent hollow formwork which is filled with concrete (blockfill) and allows for the integration of reinforcing steel, a feature essential for earthquake resistant design structures for industrial, commercial, and residential buildings.

REQUIREMENTS OF NZCMA

The Association requires its masonry manufacturer members to produce concrete masonry blocks, including veneer types, to meet the Australian/New Zealand manufacturing Standard AS/NZS 4455.1.2008, Part 1 Masonry Units.

REQUIREMENTS OF STANDARD AS/NZS 4455.1.2008

Concrete blocks are produced by combining natural raw materials (cement and aggregates) to the manufacturers' own mix design to produce blocks that meet the standard's required dimensions, strength, shape, and durability.

Note: Concrete masonry structures construction is covered by NZS 4210 Masonry Construction: Materials and Workmanship and New Zealand Building Code E2/AS1 and E2/AS3.

ADVANTAGES OF CONCRETE MASONRY

Concrete masonry is a solid, predictable, and reliable material that provides permanence, and high fire and

acoustic resistance. Masonry walls can also be positioned and designed to achieve great weather protection and thermal efficiencies.

Note: Further detail on masonry products and blockwork can be found in the New Zealand Concrete Masonry Manual on the Association website: www.nzcma.org.nz.

NATURAL AND AESTHETIC VARIATIONS

All concrete blocks have variations in colour and texture due to the natural variability of the raw materials used, and are affected further by exposure to diverse weather elements. This variation in colour and texture should be allowed for when building with concrete masonry blocks.

BLOCKWORK FINISH

Concrete blocks can have a variety of finishes, these include "fair face" i.e. leaving the concrete face as it is produced, "honing", whereby a few millimeters of the concrete face

is sanded down to expose the natural aggregate materials, and plastering or painting the block face to achieve another preferred finish.

Note: There is no standard for manufacturing concrete blocks for the purpose of honing, although this is a normal practice performed by many blocklayers.

SALT AND IRON MINERALS

Raw materials (aggregates and cement) contain salts and iron minerals, these minerals under certain conditions dissolve in water and permeate through to the surface of the concrete block - salt appears as white (or efflorescence) and iron appears as a brown discolouration.

Note: The efflorescence and discolouration occurs only on the surface of the block and has no effect on strength or durability. Contact the masonry manufacturer for advice on how to remove efflorescence and brown discolouration.

LICENSED BUILDING PRACTITIONERS (LBP)

All masonry veneer and structural masonry requiring local government consent has to be performed under the supervision of a blocklayer who is a Licensed Building Practitioner.

The LBP blocklayer has competency and knowledge of the regulatory environment of the building industry, of the current blocklaying practice, and in planning and carrying out masonry work. The LBP licence is granted through the Ministry of Business, Innovation & Employment's Licensed Building Practitioners Scheme.

Note: LBP blocklayers are issued a licence based on their work complying with NZS 4210 Masonry Construction: Materials and Workmanship and New Zealand Building Code E2/AS1 and E2/AS3.

BLOCKLAYING AND THE LBP

Building design drawings and structural details should clearly establish the types of blocks to be used, their bonding patterns, reinforcing and grouting details, blockwork finish,

and the relationship between the concrete masonry and other elements of the structure to be built.

The drawings and all concrete masonry details and blockwork finish expectations should be discussed in advance with the LBP blocklayer, and the concrete blocks should be ordered well ahead of required delivery times to ensure stock availability and on time delivery.

HEALTH AND SAFETY

People working with and handling concrete blocks, and dry or wet cement in plastic concrete, mortar or slurries must take precautions and wear protective boots/gloves/clothing and eye/face protection.

In case of cutting or grinding concrete blocks extra protection is required.

- **Respiratory:** Wear respiratory (particulate) protection. At high dust levels greater protection may be required.
- **Hearing:** Use heavy duty ear muffs for hearing protection.
- **Eyes/Face:** Use tight fitting goggles or protective eyewear in dusty environments.
- **Skin:** Use barrier creams, impervious, abrasion and alkali resistant gloves, and protective clothing to protect the skin from prolonged contact with dust and wet cement/concrete/mortar or slurry.

Remove/take off immediately heavily contaminated clothing and wash off skin thoroughly with water. Use a mild soap if available. Shower if necessary.

LBP BLOCKLAYER CONTACT DETAILS

Contact details for Licensed Building Practitioners under the 'Bricklaying and Blocklaying' licensing class, can be searched via the Ministry of Business, Innovation & Employment's public register, at <http://lbp.dbh.govt.nz/publicregister/search.aspx>.

Searches can be carried out using various fields, LBP number, licence class, area of practice (veneer or structural masonry), town/city or name.

CONCRETENZ - MASONRY MEMBERS

For advice and concrete block availability, Concrete NZ – Masonry Sector Group members can be contacted at the following links:

COMPANY	LOCATION	CONTACT
Bowers Brothers Concrete Limited	Various Locations in the Upper North Island	www.bowersbrothers.co.nz
Firth Industries	Various Locations	www.firth.co.nz
Mitchell Concrete Limited	Taranaki	mitchellconcrete@xtra.co.nz
The Block Shop New Zealand Limited	Various Locations in the North Island	www.blockshop.co.nz
Viblock Limited	Christchurch and Alexandra	www.viblock.co.nz