

What is the Lightweight Stone Cladding system?

ISLAND STONE has developed an entire system that involves:

- Sourcing New Zealand stone that is suitable for use as a lightweight cladding (must be strong enough to be cut into a thin facing - approx 20-60mm)
- Cutting the stone to the right size and thickness using purpose-built saws¹
- Fixing the facing-stone to a variety of pre-prepared substrates² using the correct glue and installation products³ and approved installers⁴.

1] A purpose-built stone cutting plant was commissioned in Cromwell in 2008. A second plant is currently under development in Christchurch.

2] The cladding can be fixed to a range of weathertight substrates including approved Fibre Cement Ventilated Cavity systems, concrete and structurally suitable brick veneers.

3] Testing has been completed on suitable high performance glues and associated installation products sourced from a leading industry supplier.

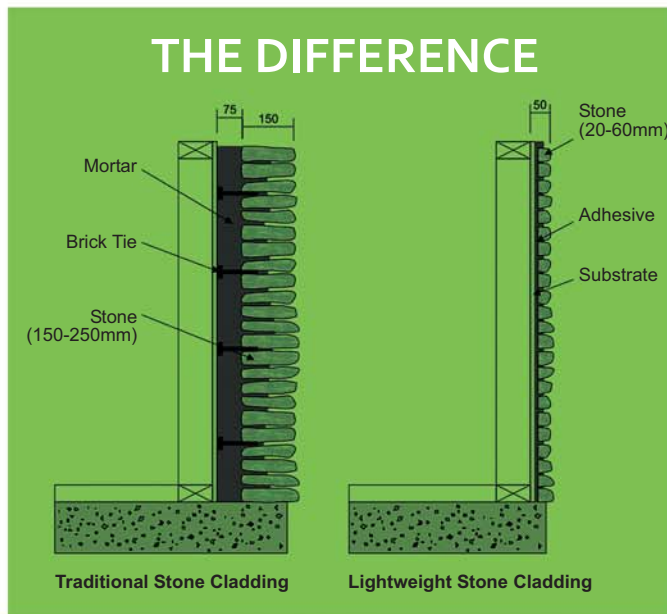
4] A network of approved installers is used to erect the lightweight cladding system. This network can be expanded as demand requires, using suitably competent block-layers, stonemasons and tilers who will be trained and accredited by Island Stone.



How does it differ from traditional masonry?

In a standard mortar-based system, the larger stones (150mm or larger) are stacked with mortar in between to fix the stones to each other vertically. Brick ties are used to adhere the stones and mortar to the substrate.

With the Lightweight Stone Cladding (LSC) system, each piece of stone is individually glued directly to the substrate. The result is a very light, strong and flexible cladding system that uses as little as 25% of the stone required for a conventional installation.



The key advantages

Uses 75% less stone than conventional systems

LSC is a more sustainable way to utilise New Zealand's natural stone resources. The amount of rubble waste needing removal from site is significantly less and freight requirements are greatly reduced. There is also potential to use the by-product of cutting the stone (see final point).

It is very strong

With each piece of stone adhered directly to the substrate, the system is as strong as the frame it is attached to. It is also far stronger than conventional systems when subjected to severe vertical and lateral movement (independent testing conducted thus far has shown that the frame itself will start to break down before the stone detaches from the substrate).

It is very light

With LSC the foundation and structural requirements are significantly reduced, and therefore the engineering design required is less. The system is far easier to work with on a construction site.

It is spatially efficient

LSC is on average one fifth the thickness of a conventional system. This, combined with the point above, means LSC has much wider potential applications than a conventional system (e.g. interior and exterior wall claddings, fireplace surrounds, columns and pillars, water features, etc).

Can be used to recycle existing stone

Stone that has been previously laid in a conventional way can be cut and laid using the new system. The result is a lighter, stronger structure with the aesthetic of its original form.

Can be applied to other stone

As well as using stone sourced from New Zealand, the LSC system can be used with any stone that has the appropriate properties to be cut into a thin facing.

Potential use of by-product

ISL is in the process of developing other tile and cladding products that can be made from the stone by-product of the LSC.

Island Stone

Island Stone Limited (ISL) is a New Zealand owned and operated company that specializes in the sourcing, distribution and installation of natural stone cladding and flooring products. The company is aligned with an international supplier that distributes pre-formatted natural stone products to Island Stone licensed agencies in seven countries. ISL New Zealand was founded in 1995, with the current owners purchasing the business from the founder in 2005.



In 2007 the new owners identified an opportunity to apply the principles of its international supplier to New Zealand stone - that is cutting and formatting natural stone so that it can be applied as a cladding, rather than be laid as solid stone.

Following 24 months of product development and testing, ISL New Zealand has brought to market a Lightweight Stone Cladding (LSC) system that has significantly widened the potential applications for New Zealand stone.

Where has the Lightweight Stone Cladding system been used so far?

The LSC system has been used extensively to apply Central Otago schist as an external cladding and internal fire-surround feature in the Hilton Hotel, Kawarau Falls Station development, Queenstown (3000m² in total).

As well as this major commercial installation, several smaller residential and commercial installations have been completed in both the North and South Islands.



*Snow Planet: AUCKLAND
(2010)*



*Residential: NELSON
(2011)*



Hilton Hotel: QUEENSTOWN (2010)

Has the system been independently tested?

Rigorous testing of the LSC system was undertaken prior to commencement of the Hilton Hotel project, including testing by Opus International of the strength of the adhesive system in a variety of stress situations (including freeze/thaw testing).

The system met the strict testing and compliance requirements of this specific installation, and testing for wider commercial and residential applications is underway and ongoing.



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Residential: HAMILTON (2009)



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