



Installation Guide

2024 Edition 1

Installation Guide

CLADDING TO MASONRY BLOCK WORK WITH ADHESIVE AND MECHANICAL FIXINGS

PRE TREATMENT OF SUBSTRATE

Where the installation is an external wall or requiring a waterproof treatment, masonry block work will need to be coated with a waterproofing membrane prior to the fixing of the limestone cladding. We suggest using “Mapelastic Smart” by Mapei as a waterproofing membrane. Refer to manufactures specifications for application.

FIXING LIMESTONE CLADDING

Dimension cut and rubble limestone cladding is fixed to most surfaces by the use of adhesives. Suggest Mapei Keriflex Maxi S1 or Mapei Kerabond Plus and Mapei Isolastic. Refer manufactures specifications for fixing. Manufacturers specifications take precedence. In general please find the following:

The substrate must be adequately cured, mechanically sound, free of loose particles, grease, oil, paint, wax and other deleterious material or surface contaminates and should be sufficiently dry. The stone should be free of dust and loose particles and be sufficiently dry. Please note Natural Australian Limestone does not need to be pre sealed prior to laying.

Spread glue to the stone and substrate using a 8 - 10 mm notched trowel to evenly spread the glue ensuring full coverage to both surfaces. Place the stone on the surface and press in allowing contact adhesion of the cladding tile to the substrata achieving correct positioning and maximum bond. Once compressed the glue thickness should be reduced. Use a dowel or “spacer” to create the space between the tiles for latter grouting if required. The mortar joint height should be the same as block work which is generally a 10 mm spacing. It is recommended not to exceed 1.5 metres in height each day of laying to allow for adhesion of the stone to the substrata. Cladding can be easily cut with a angle grinder and masonry disc. In cutting stone employ wet cutting where possible or use dust less technology. P2 dust masks should always be worn when cutting and processing stone products.

MECHANICAL FIXING OF LIMESTONE CLADDING (FIXING OF STONE ABOVE 1.5 METRES)

For cladding application above 1.5 metres apply mechanical fixing in combination with the adhesive fixing. A mechanical fix could be in the form of “Stone clips”, shelving angles or other fixing methods. Limestone Australia recommends “Stone clips” as a proprietary fixing method. For reference regarding Stone clip contact Dan Redhead on 0403679998 or daniel@stoneclip.com. If using a shelving angle adopt a stainless steel angle 5 mm less than the thickness of the stone placed between every course at and above this height unless otherwise specified. Shelving angle should be placed at the base of the tile piece as support. The angle should be adequately fixed to the substrate with stainless steel screws to a minimum to a 50 mm depth of into the sub frame of the building. The angle should be concealed in the grout line of the stonework. In all cases refer your application to a qualified structural engineer or appropriate professional for clarification. Refer to construction notes for grouting and cleaning and sealing limestone.

Please use only as a guide only. These notes are to used as a general easy to ready supplement only. They should be read in conjunction with Australian Standard AS 3958.1 “Guide for the installation of Ceramic Tiles, Part 1” which will always take precedence. Responsibility of the installation of any products within our range must remain with the installer.

CLADDING TO COMPRESSED SHEET WITH ADHESIVE AND MECHANICAL FIXINGS

SELECTION OF SUITABLE SUBSTRATE

Select cement sheet suitable of holding the weight of the limestone cladding. Weight of cladding per square meter is approximately 45-50 kg per square metre. Follow manufacture specifications for fixing the cement sheet to the steel or timber framing. To prevent downward movement of the wall once stone is applied ensure the founding of the wall is properly engineered to take the weight of the applied stone. If wall is over a timber floor additional stumps and bearers may be required to support the weight of the stone. Due to the weight of the stone the manufacture of the compressed sheet may require additional fixing to the whole wall installation. Refer Mechanical fixing of Limestone Cladding below.

PRE TREATMENT OF SUBSTRATE

To ensure adhesion of the cladding to the substrate the cement sheet may need to be adequately primed or coated with a waterproofing membrane prior to the fixing of the limestone cladding. Some “roughing” of the surface may be required to ensure adherence of the stone, primer or membrane. If a waterproof membrane is required we suggest using “Mapelastic Smart” by Mapei. Refer to manufactures specifications for application.

FIXING OF LIMESTONE TO COMPRESSED SHEET

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The substrate must be adequately cured, mechanically sound, free of loose particles, grease, oil, paint, wax and other deleterious material or surface contaminates and should be sufficiently dry. The stone should be free of dust and loose particles and be sufficiently dry. Please note Natural Australian Limestone does not need to be pre sealed prior to laying.

Spread glue to the stone and substrate using a 8 - 10 mm notched trowel to evenly spread the glue ensuring full coverage to both surfaces. Place the stone on the surface and press in allowing contact adhesion of the cladding tile to the substrata achieving correct positioning and maximum bond. Once compressed the glue thickness should be reduced. Use a dowel or “spacer” to create the space between the tiles for latter grouting if required. The mortar joint height should be the same as block work which is generally a 10 mm spacing. It is recommended not to exceed 1.5 metres in height each day of laying to allow for adhesion of the stone to the substrata. Cladding can be easily cut with a angle grinder and masonry disc. In cutting stone employ wet cutting where possible or use dust less technology. P2 dust masks should always be worn when cutting and processing stone products.

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GROUTING LIMESTONE CLADDING

1. If using mortar as supplied by Limestone Australia blend one full bag of mortar mix with one bag of oxide color as provided and add water to make a workable consistency. The color mix is made to blend with the natural stone color. If using own grout mix use a sand, cement and lime combination at the ratio of 6:1:1 mixed with potable water producing a mortar. For best results the mortar should be a compatible color with the stone. This can be achieved with using oxide colors if the sand and cement combination doesn't yield an adequate match. The mortar needs to be moist not sloppy. Avoid using sands that contain large grit particles as these particles if dislodged can score the surface of the stone. Refer point 6 below.
2. Fill the joints between the stone slightly overfilling with the mortar taking care to minimise the contact with the stone surface. Use a thin (finger) trowel to push the mortar into the joint thoroughly filling each joint.
3. Once the mortar has dried sufficiently so it is not wet but still workable remove the excess with a flat trowel scraping the mortar away from the stone surface. Smooth out and refill any holes scraping any excess from the stone surface.
4. Once the mortar is almost dried any minimal residue on the edges of the stone can be removed using a stiff brush to a flat trowel or "small" tool.
5. The joints can be finished with a damp sponge, soft brush or steel trowel to the joint only not sponging the surface of the stone thus filling the natural texture. Jointing finish will depend on desired result.
6. The following day inspect the grouted section of the wall and remove any excess mortar with a scraper or small tool. The mortar residue should be now isolated as most of it should have been removed in the process 5 as detailed above. Dried mortar will generally be darker than the stone and easily identifiable for removal. If mortar is evident on the edges lightly scrape the surface of the stone ensuring not to damage the surface. The stone face can be lightly sanded with 80 grit sandpaper. This will also remove any mortar discoloration to the stone and will "feather in" the joints and mortar and "smooth out" the surface of the wall. We suggest attaching the sandpaper to a large flat board for sanding the surface flat.
7. The wall can be washed down using a pressure washer a couple of days after installation once the mortar has hardened. Use the pressure washer on "fan" and not too powerful to damage the stone or mortar jointing. Carefully washing the wall from the top down can also remove any dust from the stone and may clean up any stubborn residue of mortar that may still be on the face of the stone. Generally use the pressure fan on an angle to the wall than at perpendicular to the wall.
8. Once almost dry the wall is ready for sealing. Refer Construction Note Cleaning and Sealing Limestone

CLEANING AND SEALING LIMESTONE

Limestone Australia has developed **LIMEPROTEC** sealer specifically suited for sealing our natural Australian Limestones. **LIMEPROTEC** is a unique waterborne surface treatment with exceptional water repellency and binding properties and is a hydrophobic binder rather than a film forming sealer - this feature allows treated materials to “breathe” normally. It also contains a highly effective biocide that inhibits mould and algal growth. **LIMEPROTEC** converts fretting natural stone and masonry from a soft material to a hard dust-free natural finish with excellent weathering resistance and durability.

SURFACE PREPARATION

The level of surface preparation will determine the appearance and final product performance that will be achieved. Stone should be washed with a low-pressure fan spray to clean pores before sealant is applied. At this stage identify any mortar splashes, residue or other contaminants that may be on the stone from the manufacturing or laying process. Where possible remove mechanically with a scraper. Some stone can be lightly sanded using 80 Grit sandpaper to remove contaminants. Staining can be removed with an application of chlorine or other cleaning agents to the effected areas. It is important to adequately clean the stone as what is left not cleaned will be encapsulated into the surface of the stone with the sealing process. Remove all fine dust from the pores of the limestone. Wash from top to bottom washing dust and contaminants through the stone. Stone should not be washed or sealed until the mortar has hardened sufficiently. Allow to dry completely.

COVERAGE

Maximum penetration of sealer is advised. Australian Limestone minimum coverage rate is 1 litre/m² per coat. Some limestone may accept more sealer depending on porosity and surface treatment. Two coats is recommended. Common rates are for Cream and Biscuit Limestone a minimum of 1 litre/m². Shell and Oyster diamond cut/honed limestone 1.5 litres/m² and Split face limestone 2 litre/m².

APPLICATION PROCESS

Apply a trial patch before full application to assess sealer adhesion and final finish. The recommended application method is by airless spray using a flood coat technique. Apply the first coat evenly as per recommended coverage rate. Recoat before first coat has dried (approximately 2 hours dependent upon weather and site conditions). Please note if coverage rates are achieved in the first coat application a second coat is not required.

PRECAUTIONS

Do not apply if the temperature is below 10 C, if relative humidity is above 85% or if rain is imminent. Protect other surfaces and materials from over spray or splashes. Windows, window frames, door frames, timber, aluminium and all other materials **MUST** be protected against sealant application. Wash off with clean water immediately if sealant is inadvertently applied to any of these materials. It is advisable to mask window frames and other products where necessary before application of the sealant. Avoid windy days to minimise over spray.

DRYING AND CLEAN UP

48 hours for full cure. Clean all equipment immediately with water.

SAFETY DIRECTIONS

Provide good ventilation by opening windows and doors and the use of circulating fans. Eye protection and the use of gloves are recommended however, if product comes in contact with skin it should be washed off with water before drying. If product comes into contact with eyes gently flush with running water while holding eyelids open for 15 minutes and seek medical attention. If swallowed, contact a doctor or Poisons Information Centre call **13 11 26**. Do not induce vomiting. Give water to drink.



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