Insulating Render

Mixing & Application Guidance

A dry ready mixed Natural Hydraulic Lime Render for thermal improvements.

CORNERSTONE™
PROTECTING THE PAST & PRESENT

Mix Consistency

The target consistency should be a little stiffer than regular render; it should hold its own shape very well but be a little bit sticky and fatty on the hawke & trowel. The stiffer you can use it the deeper you can build it up in a single pass, also the less shrinkage you're likely to observe, however too stiff and it will not want to stick to the background.

The required water addition rate can vary slightly from batch to batch due to the highly porous nature of some of the ingredients in the product. However, it should be fairly consistent between all bags in the same batch based on the batch code printed on the front of the bags.

Belle Type Mixer

Using this mixing method, the product should be mixed for no less than 5 minutes but no more than 10 minutes.

Approximately three bags of insulating render will fit in a standard 45L belle mixer, it is important not to overfill these mixers to allow the proper folding action to occur. The mixing order is as follows;

1. Add approximately 2/3rds of the required water into the mixer
2. Add the full weight of Insulating Render into the mixer & cover the mouth of the mixer with a bin lid or another cover to prevent the materials from splashing out
3. Turn on the mixer
4. Allow water to distribute in a semi-dry fashion for a minute or so, remove the covering and add a splash of water to reduce dust if the mix is still a little on the dry side
5. Slowly add the rest of the mixing water allowing it to distribute through the render evenly
6. Once the render starts to hang together as a single clump in the mixer allow it to mix for a minute without adding any more water until the consistency stops changing
7. Add the water a splash at a time until you achieve the desired consistency

Plasterers Whisk

Using this mixing method, the product should be mixed for no less than 1 minute but no more than 4 minutes.

This product can be mixed in either plastic tubs, buckets or gorilla tubs using a plasterer's whisk. If large quantities of the product are required, whishing may not be the best option as it will be a more labour-intensive process. This method works well for patching work and small batch work. The mixing order is as follows;

1. Add approximately 2/3rds of the required water into the bucket
2. Turn on the mixer with the head in the water at medium to high speed
3. Add the insulating render into the bucket slowly allowing the dry powder/fibre clumps to break down and wet up.
4. Once the mix starts to stiffen up slow the addition rate of render and ensure that the water is evenly distributed; note that the product is lighter than water so it will float, water will not sit on the top of the bucket it will be a layer at the bottom.
5. Add small quantities of dry render until you achieve the desired consistency, whisk for at least 20 seconds after this to ensure it is fully mixed through. You should be getting a smooth lump-free consistency and the render should hold its shape in the bucket if you pass a trowel through it.
6. Remove the fibres from the whisk head and dispose of them before starting the next mix.

Baron mixer (or other forced action mixer)

Using this mixing method, the product should be mixed for no less than 5 minutes but no more than 15 minutes.

These mixers can vary in volume, however a 210L Baron mixer will be able to mix around 6 bags thoroughly. Whilst this size of mixer can often mix more material in one go, the light-weight nature of Insulating Render means it can wind up forming a single clump and not mixing properly.

1. Add approx. 2/3rds of the water required into the mixer whilst its running, this will likely start to leak out, however this pre-wetting is to stop the dry powder from sticking to the bottom of the mixer.

Manufactured by Cornerstone Mortars
Cornerstone products are CE marked
and manufactured under an ISO9001:2015
accredited Factory Production Control System.

Brims Park, Old Callywith Road
Bodmin, Cornwall PL31 2DZ
info@cornerstonemortars.co.uk
+44 0800 7839014

2. Add around ¾ of the render into the mixer, and allow to mix for a short while, this will bring the render to a very stiff consistency.
3. Add the rest of the water, pouring it around the mixer rather than dumping it in a single location
4. Add the rest of the render and allow to mix for a minute or so
5. Add any final water to the mix to bring to consistency, keep in mind that water addition will have to be by experience and no accurately measured using this method as it will not be possible to maintain a water addition if the mixer is leaking out in the first step.

Allow to mix for at least a minute after the last addition rate of water, check consistency and turn out for use.

Application Guidance

1. Clean down the surface from any mould, dust, dirt etc.
2. Control the background suction by spraying with water
3. Dub-out if necessary; dubbing out can be done with either a sand and lime mix or with insulating render itself. Dubbing out should be left at least 24 hours before the first coat.
4. Apply the insulating render – for experienced contractors hand application of 30-50mm per pass is fine, for inexperienced contractors or DIYers 20-25mm is advisable until you become more familiar with the product. Up to 80mm per coat is reasonable when spraying, 100mm+ can be achieved if the background has reasonable suction.
5. Scratch between coats to a depth of 5-8mm – Crosshatch (diamond) scratch is highly advised, not the modern wavy scratch used on sand & cement renders as this will not give a good enough key for further coats to adhere to.
6. Allow 1-2 days OR 7+ days between coats. It's easiest to get the next coat on after a day or two as when the material dries back it has a very high suction which can be difficult to control by re-wetting. If attempting to follow the 1-2 day route the simple test to see if the substrate is ready to take the next coat is as follows; if you can't mark it when pressing with your thumb but you can mark it with your nail then it's firm enough.
7. Hang damp hessian between coats.
8. For the last coat of insulating render its best floated with a wooden float, or with a sponge float if it is to be used as a decorative finish.
9. For decorative coats Cornerstone Promix Superfine Plaster internally or Promix Fine NHL2 externally are best. They should ideally be applied within 2 days of the last insulating render coat, especially the Superfine Plaster, as the suction from the insulating render can make it very hard to get a good finish.

Tips & Tricks

- **Green on Green:** Green on green application is possible with Insulating Render; it's high build & lightweight nature means it puts little stress on previous coats so can be built out quickly and safely.
- **Finish Coats:** If insulating render is to be used as the finish coat; apply thick backing coats and one last thinner coat of Insulating Render for the finish of around 6-8mm, this will stop it being spongy under the float due to the depths of application and help to achieve a better finish.
- **High or Low Suction:** If the background is particularly high or low suction either a scat coat or a very tight first pass helps to control suction for the subsequent layers. This can be done with either Insulating Render or a sand and lime mix
- **Day Before Mixing:** This product can be mixed at the end of one day and knocked back up the following morning; this will give a lighter material than mixing and using same day.
- **Adhesion:** Insulating render likes to stick to itself, if you can't get 50mm on in one pass then apply a tight squeeze of Insulating Render and lay into it when it's started to pull in (often 30-120 seconds) and you'll find it much easier to build up depths.
- **Dubbing Out:** Insulating render is a fantastic material for dubbing out bellied walls; if you had a 100mm proud section you can flatten the wall in one or two coats on something which could take 8-10 coats of sand and lime. This means the works can be done in a matter of days rather than weeks/months.
- **Vertical Lath:** This material works well on vertical lath, but it should be used a little wetter than typically advised to allow it to slump after passing through the lath. If it's used too stiff it will not fold and "grip" the wood. It does not work well on ceiling lath for a similar reason; you have to run it quite wet to get it to fold after passing between the laths and this can make for a difficult and messy application.
- **Newtonite Lath:** Whilst it is technically possible to use this product on newtonite lath type systems you will need to run it wet to get it to pass behind the lathing mesh and the leave it for a bare minimum of 2 weeks (in ideal weather), realistically more like 3 or 4 weeks to build up strength before applying the next coat. The lack of suction can severely reduce the rate of strength gain. If your project needs application onto this type of

substrate, please contact us as we can make a version which develops strength faster however it is not an off the shelf stocked product and has an order quantity of in excess of 120 bags.

- **Tanking Materials:** Insulating render works brilliantly to deal with sweating of tanking materials, however it does like a porous background to achieve the best bond, as such we typically recommend a slurry of SBR be painted on the tanking which the Insulating Render should be laid into whilst the SBR is tacky. This should allow it to bond properly. Do not mix the SBR with the Insulating Render itself as it will no longer serve as a vapour open material to deal with the moisture passing through or condensing on the tanking.
- **Do Not Use PVA:** Never use PVA with Insulating Render (or any other lime render). It is water soluble and over time will cause the product to debond from the substrate.
- **Backing Coats:** If Insulating Render backing coats have been left for a long time so it's fully dried and you now want to skim it then it's not going to be an easy task. We normally advise wetting the wall out as thoroughly as possible (rewet a few times over a couple of days in advance if possible) then painting a milk consistency slurry of Saint-Astier NHL2 onto the background, then laying into that whilst it's still tacky with the finish being applied. Keep the heating off and windows closed during the application process.
- **Do Not Apply Gypsum on Top:** Gypsum should never be used on top of Insulating Render. This includes gypsum containing products like Lime Green Solo or Saint-Astier's Ecomortar R50/R100. This statement is not to discredit the aforementioned products; we regularly get asked this question so we have tested them and found them to be incompatible.

  This is because Insulating Render allows moisture to cycle through itself, condensing and re-evaporating, to buffer the humidity with a room. As water usually evaporates within the first few millimetres of the surface it means it will travel as liquid water into the gypsum layer which will dissolve and blow it over time. This timeframe can be as short as two months.
- **When to Use Mesh:** Whilst Insulating Render doesn't normally need mesh added as its pre-fibred, it is sometimes advisable in specific scenarios. For example;
    - where two significantly different backgrounds abut such as cob and stonework
    - where previous serious stress cracking has been identified
    - where wood is encapsulated and not completely isolated from the render layer
    - where channels for trunking have been created and are being rendered over meaning an area of insulation has a stepped depth change.
- **Timber:** Where Insulating Render meets timber embedded within a wall it should have a DPC wrapped around it to prevent moisture being passed into the timber from the render. Whilst the timber can act as a cold bridge and have condensation it will often be able to deal with this if it's not sealed, it can however become a problem if damp render is kept in constant contact with the wood.

Document Control

Datasheet version 1.5, issued September 2024. More modern versions of this document will supersede this datasheet, with no exclusions.