

# Womersleys Insulating Lime Render / Plaster and Moisture Buffering

Womersleys Insulating Lime Render made by Cornerstone is designed to reduce heat loss in solid walls.

The Insulating Render is designed to improve the thermal performance of solid walled masonry, whilst maintaining the high vapour permeability and low strength of an NHL2 render. Insulating Render offers a viable solution for Part L1B legislation in that it meets the requirements for improving the thermal performance of a wall, whilst maintaining a permeable fabric which absorbs and readily allows for the evaporation of moisture and will not prejudice the character of the host building or increase the risk of long term deterioration of the building fabric or fittings. A 50mm application, applied as two coats, will reduce heat loss in a solid wall by 60%.

Most available lightweight/insulating materials use aggregates that have a two-dimensional structure, when these are subject to pressure during application the aggregate can breakdown, reducing both the thermal performance and durability of the mortar. Womersleys Insulating Render uses a specialist recycled ultra-lightweight hardened aggregate with a three-dimensional structure, which does not breakdown under application and improves both the durability and insulating properties of the render.

Fibre additions negate the need for any mesh to be applied to the wall or inserted within the render and improves the flexural strength of the render, distributing stresses across the render to help reduce point loading.

Insulating Render can also be used in sustainable construction projects as a basecoat onto natural building materials such as hemp, straw and rammed earth. The insulating properties help reduce the thermal expansion differentials between the background and any subsequent coatings.

The manufacturers have been working with Loughborough Uni and they have confirmed from initial calculations that a 50mm coating will reduce heat loss by 60%, and they are now proceeding with additional testing for measurements to give us more results. They have also confirmed that the moisture buffering is substantially increased so the Insulating Lime Render / Plaster will act as a dehumidifier and take in excess moisture if relative humidity is too high within the room.

Similar to conventional lime renders/plasters but due to the fact that the glass aggregate is non-porous it releases the moisture much faster than standard lime coats so the wall be far less prone to condensation. They compared the Insulating Render to conventional EPS insulation, with EPS the relative humidity was at or above 95% for 38 weeks of the year and over 99% relative humidity for 25 weeks during this period, at 95% interstitial condensation will form. So with a standard insulating board the wall would be damp for 38 weeks and have little means to release this moisture/water. With the Insulating Render the relative humidity reached 95% for 8 to 10 weeks but because the render is fully vapour permeable it was able to store and release this moisture when the relative humidity dropped. So we are finding that the Insulating Render is drying the wall much faster than conventional lime render/plaster and still insulating the internal environment.

As its lightweight you can go on up to 30mm per coat and its already got fibres in the mix so no need for mesh. Drying times are similar to that of normal lime, so you can build up to a 50mm coating either green on green or after 3 to 4 days so again it's a much faster application, you are essentially doubling the amount you can apply at any one time so works out as twice as fast.