



THERMAL STANDARD FOR CONCRETE BLOCK IN LOW COST HOUSING

The NHBRC has regulated that in the Southern Cape Condensation Problem Area (SCCPA) the house must have certain minimum thermal properties to avoid condensation problems and provide reasonable living standards for the occupants.

To achieve that the house must have an insulated ceiling and the walls must have certain minimum thermal resistance. If the thermal resistance is not known the minimum wall thickness must be 190mm. Alternatively if the wall is 140mm thick then it must be rendered with a 15mm layer of insulating plaster and painted.

The required minimum thermal resistance of the wall must be 0.232 M².W/K and a minimum mass of 160kg/m²

Extensive testing of local (Cape) hollow 140mm wide by the CSIR reveal that 140mm blocks can vary from 0.17 to 0.25 M².W/K . The reasons for the variance are complex and are related to density, mass, shape and type of aggregates used.

At the moment the Cape has two manufacturers capable of attaining the correct thermal standard a 140mm wide block. This obviates the need to render the unit with plaster.

Nevertheless it is important that the wall remains dry because moisture radically lowers its thermal resistance. To this end a suitable waterproof coating needs to be applied.

The CMA has investigated the effectiveness of different paint systems and very few can be considered reliable and durable. The main reason for failure has been the quality and consistency of the paint application that can vary. There is only one product that has the agreement approval meeting stringent rain penetration tests.