



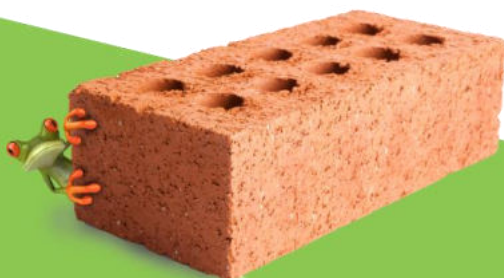
## MEDIA SHEET

### 'MIBT Performance not what it is presented to be?'

We present evidence that MIBT's claim that their prefabricated panels have a "better thermal rating than clay brick" is substantively false. It is not only contradictory to Agrément SA findings but also the well documented findings of national and international empirical research, modelling and parametric studies.

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## 'MIBT PERFORMANCE NOT WHAT IT IS PRESENTED TO BE?'

MIBT (Modular Innovative Building Technologies) advertise they are:

*“The only manufacturer of [Mi Panel] in Africa, the only innovative building technology that compares with double clay brick plastered in terms of structure, fire, acoustic attenuation and thermal properties.” [July Issue – Housing in South Africa]*

MIBT in their other promotions and website highlight as a “feature/benefit” that MIBT lightweight concrete panels with fibre cement finishes afford “Better thermal rating than clay brick”.

The latter is done to infer, suggest or lead the reader to believe that MIBT Mi Panel 1 and Mi Panel 2 panel walls will, because of their claimed “better thermal rating than clay brick”, afford occupants greater thermal comfort and generally lower heating and cooling energy usage than the most basic clay brick house with 230mm external walls.

The Agrément certificates 2010-376 and 2011-400 references to the thermal performances of the Mi Panel 1 and Mi Panel 2 type walls however contradict MIBT's claims and inferences. In the first instance the Agrément Certificate notes that Mi Panel 1 and Mi Panel 2 type walls do not provide the MIBT house with greater thermal comfort and energy efficiency than a CSIR Standard Brick House [SBH] comprising 230mm un-insulated double brick walls with no insulation in the roof.

Both the Agrément Certificates – refer Table 2: Habitability Sections Thermal Performance and Energy, state that:

- *“The thermal performance of both the Mi Panel 1 and Mi Panel 2 Building System buildings without insulation in the ceiling is inferior to that of a standard brick house (SBH) and will perform better when insulated ceilings are installed.”*
- *“The energy required to heat both an Mi Panel 1 and Mi Panel 2 Building System building without insulation ceiling will be up to two times that required to **heat** the SBH and when fitted with insulated ceilings could drop to about half that required to heat the SBH.”*



The Agrément SA commentary is clear that it is the insulation applied in the ceiling of the MIBT house and not the supposed 'higher thermal rating' of the MIBT walling system types Mi Panel 1 and Mi Panel 2 that raises the MIBT systems thermal performance to an acceptable level in relation to the SBH benchmark. Logical deduction would be that the placement of insulation into the ceiling of the SBH will reduce the **heating** energy usage of the SBH to half of the MIBT alternate. Extensive thermal modelling of different house types comprising different wall construction using ASHRAE and Agrément SA compliant software supports such logical deduction.

But the exaggeration in the MIBT marketing speak does not end there. The Agrément SA certificates only talk of heating energy and every building professional in South Africa knows, as would MIBT, that heating energy is only part of the operational energy consumed by buildings through the seasons.

Notably in South Africa, where the climate is generally characterised by long hot summer months it is well established by the CSIR and the NBRI studies that buildings with a low mass design, such as MIBT, will not provide as good protection against over-heating as those with high thermal mass such as provided by double brick masonry constructions. This assertion has been proven in both empirical and thermal modelling studies. In South Africa's climates, insulated lightweight walls have no propensity to self-regulate in the way clay brick walls do, the heat flux on the inside of insulated lightweight walls [such as MIBT panel walls] coinciding with the hottest part of the day outside. Net result is 'hotbox' conditions inside – greatest thermal discomfort and greatest cooling energy usage to achieve thermal comfort.

What MIBT thus claim and infer in respect of the comparative thermal performance of walling envelopes for houses is not only contradicted in the Agrément SA findings but also by the well documented findings of a plethora of empirical research, thermal modelling studies using ASHRAE compliant modelling software and parametric studies.

If the truth be told, Mi Panel 1 and Mi Panel 2 type walls do not have comparable thermal properties [comparable levels of thermal capacity and resistance] to double skin clay brick walls as claimed. One might think that MIBT as professed experts in the comparative thermal performance of different walling envelopes would have known that. This anomaly begs the question as to what other contradictions exist and what claimed or inferred performance efficiencies there are in other areas that are equally improbable for MIBT Mi Panel 1 and Mi Panel 2 walls to provide over the proven performance attributes of clay brick wall construction.



The fact of the matter is that clay brick wall construction in its most basic double skin format offers a whole lot more value than MIBT's best offering. It is this most basic clay brick wall construction type that can be easily reformatted with a cavity, specified with insulation, and cost effectively built, to optimise the value that the unique intrinsic qualities of fired clay brick bring to wall construction, taking the thermal performance amongst other things, and life time value of clay brick construction, to levels that MIBT can only but aspire.

**For further information:**

The Clay Brick Association of South Africa

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