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Client: Brooks Paints Pty Ltd
Purvis Lane, Dubbo, NSW 2830

8th June 1990

'K' Factor of Insultec liquid membrane

The client provided a sample of Insultec Liquid Membrane in the form of a panel approximately 285 mm square and a dry film thickness of approximately 1mm thickness. It was requested that the 'K' factor of this membrane be determined. For such low conductance materials the method specified in Plastics Institute of Australia Code of Practice for PVC wall Cladding, Appendix E is appropriate and was used.
The principle of the method is to measure the rate heat penetration into an enclosure by determining the rate at which solid CO_2 contained in the enclosure is volatalised by the heat. The method provides a measurement of thermal resistance 'R' of the specimen, from which thermal conductance 'C' may be derived directly and, by knowledge of specimen thickness the thermal conductivity 'K' can be derived.
Accuracy of the method is estimated to be plus or minus 15%.

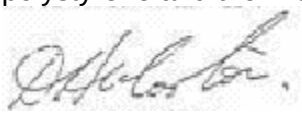
Results

Thermal resistance of sample, 'R' = 0.12 m^2 K W^{-1}
Thermal conductance of sample, 'C' = 8.6 W m^{-2} K^{-1}
Thermal conductivity 'K' (based on thickness of 1.0 mms for the specimen submitted)
'K' = 0.090 W m^{-1} K^{-1}

Comment

The density of the specimen provided is 1290 kg m^{-3}, indicating a modest level of expansion of the foamed material. Nevertheless the 'K' factor is significantly below those of solid vinyl, acrylic of olefine polymers, which are of the order of 0.15 to 0.30 W m^{-1} K^{-1}.

The conductivity is however higher than that of low density insulants such as cork, polystyrene and the like, which range from 0.03down to 0.015 W m^{-1} K^{-1}.



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