FOAM GLASS WITH LOW APPARENT DENSITY AND THERMAL CONDUCTIVITY PRODUCED BY MICROWAVE HEATING

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ABSTRACT

The Romanian company Daily Sourcing & Research Bucharest, that has researched in the last time foam glass manufacturing processes by the microwave irradiation method, has been concerned to improve its physical characteristics. Aiming to reduce the apparent density and the thermal conductivity of the foam glass, required for use as insulating material in construction, the processing quality level of glass waste has been significantly increased so its granulation was reduced below 63 μm, compared to 80 – 150 μm used in the previous experiments. Tests carried out on an adapted domestic microwave oven in working conditions similar to those of heating the finely ground and pressed raw material on the conveyor belt of a tunnel furnace, have led to obtaining porous materials with apparent density between 0.15 – 0.19 g/ cm^3 and thermal conductivity in the range 0.034 – 0.040 W/ m·K.

Keywords: Foam glass, microwave, glass waste, foaming, apparent density.