



AALBORG UNIVERSITY
DENMARK

Aalborg Universitet

Comparison of open- and closed-porous foamed glass

König, Jakob; Hribar, U. ; Cimavilla, P.; Lopez-Gil, A.; Rodrigues-Perez, Miguel; Petersen, Rasmus Rosenlund; Yue, Yuanzheng

Publication date:
2019

[Link to publication from Aalborg University](#)

Citation for published version (APA):

König, J., Hribar, U., Cimavilla, P., Lopez-Gil, A., Rodrigues-Perez, M., Petersen, R. R., & Yue, Y. (2019). *Comparison of open- and closed-porous foamed glass*. Abstract from 25th International Congress on Glass, Boston, United States.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- ? Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- ? You may not further distribute the material or use it for any profit-making activity or commercial gain
- ? You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Comparison of open- and closed-porous foamed glass

Jakob König,¹ U. Hribar,¹ P. Cimavilla,² A. Lopez-Gil,² Miguel Rodrigues-Perez,² Rasmus Rosenlund Petersen,³ Yuanzheng Yue³

¹Advanced Materials Department, Jozef Stefan Institute, Slovenia

²CellMat Technologies S.L., Slovenia

³Department of Chemistry and Bioscience, Aalborg University

Foamed glass is a lightweight material mainly used for thermal insulation in the construction and chemical industry. Its excellent combination of properties is related to closed pores filled with CO₂ gas and low density (i.e. high porosity). In order to obtain superior insulation properties several parameters need to be tuned in relation to the composition of the glass used for the synthesis. For acoustic insulation, however, open porosity is preferred. Despite straightforward application in acoustics the reports on this aspect are scarce. In this contribution, we present the results of our work focused on development of closed and open porous foamed glass for thermal and acoustic insulation. Open and closed-porous foamed glasses were prepared from cullets of different chemical composition. For closed-porous samples CRT-panel glass was used, while for open-porous samples bottle glass was used. The closed and open porosity of both samples was further tuned by specific additives for adjusting surface tension or crystallization. Thus we were able to prepare samples with 95 % closed or open porosity at a density of 100–120 kg/m³. The synthesis, and thermal and acoustic properties will be discussed.