Electro-Erosive Wire Cutting of Aluminum Foam

František Špalek, Jana Petrů, Tomáš Zlámal, Ivan Mrkvica, Robert Čep, Jiří Kratochvíl
Faculty of Mechanical Engineering, VŠB – Technical University of Ostrava. 17. Listopadu 15/2172, Ostrava. The Czech Republic, E-mail: frantisek.spalek@vsb.cz, jana.petru@vsb.cz, tomas.zlamal@vsb.cz, ivan.mrkvica@vsb.cz, robert.cep@vsb.cz, jiri.kratochvil@vsb.cz

This contribution deals with experimental cutting of samples made of special Alporas aluminum foam. This foam has been made by a powder metallurgy method and the foam resulting structure features very diverse material porosity. Test cuts through the aluminum foil were done using a non-conventional WEDM wire electro-erosive cutting technology. Monitoring and analysis of effects of proposed processing parameters on the resulting cut quality was done as a follow-up. Achieved accuracy of individual samples and its repeatability was also evaluated. At the end of the contribution wire cutting of aluminum foam technology findings are summarized and possible recommendations for practice are presented.

Key words: wire cutting, aluminium foam, powder metallurgy, non-conventional technology

Acknowledgments

This paper was created in the project No. LO1203 „Regional Materials Science and Technology Centre – Feasibility Program“ funded by Ministry of Education, Youth and Sports. This work was supported by the European Regional Development Fund in the IT4Innovations Centre of Excellence project CZ.1.05/1.1.00/02.0070 and by Education for Competitiveness Operational Programme financed by Structural Founds of Europe Union in project Integrita CZ.1.07/2.3.00/20.0037 and by Student Grant Competitions SP2015/116 and SP2015/129 financed by the Ministry of Education, Youth and Sports and Faculty of Mechanical Engineering VŠB-Technical University of Ostrava.

References


Copyright © 2016. Published by Manufacturing Technology. All rights reserved.