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A study of tensile test on open-cell aluminum foam sandwich

By: Ibrahim, NA (Ibrahim, N. A.)^[1]; Al Hazza, MHF (Al Hazza, M. H. F.)^[1]; Adesta, EYT (Adesta, E. Y. T.)^[1]; Sidek, ABA (Sidek, A. B. A.)^[1]; Endut, JA (Endut, N. A.)^[1]

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Abstract

Aluminum foam sandwich (AFS) panels are one of the growing materials in the various industries because of its lightweight behavior. AFS also known for having excellent stiffness to weight ratio and high-energy absorption. Due to their advantages, many researchers' shows an interest in aluminum foam material for expanding the use of foam structure. However, there is still a gap need to be fill in order to develop reliable data on mechanical behavior of AFS with different parameters and analysis method approach. Least of researcher focusing on open-cell aluminum foam and statistical analysis. Thus, this research conducted by using open-cell aluminum foam core grade 6101 with aluminum sheets skin tested under tension. The data is analyzed using full factorial in JMP statistical analysis software (version 11). ANOVA result show a significant value of the model which less than 0.500. While scatter diagram and 3D plot surface profiler found that skins thickness gives a significant impact to stress/strain value compared to core thickness.

Author Information

Reprint Address: Al Hazza, MHF (reprint author)

+ IUM, Dept Mfg & Mat Engr, Jalan Gombak, Kuala Lumpur 53100, Malaysia.

Addresses:

+ [1] IUM, Dept Mfg & Mat Engr, Jalan Gombak, Kuala Lumpur 53100, Malaysia

E-mail Addresses: muataz@ium.edu.my

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1. **Deformation and fracture of aluminium foams under proportional and non proportional multi-axial loading: statistical analysis and size effect** Times Cited: 63
 By: Blazy, JS; Marie-Louise, A; Forest, S; et al.
 INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES Volume: 46 Issue: 2 Pages: 217-244 Published: FEB 2004

2. **Fabrication and Tensile Tests of Aluminum Foam Sandwich with Dense Steel Face Sheets by Friction Stir Processing Route** Times Cited: 14
 By: Hangai, Yoshihiko; Ishii, Nobuyuki; Koyama, Shinji; et al.
 MATERIALS TRANSACTIONS Volume: 53 Issue: 4 Pages: 584-587 Published: APR 2012

3. Title: [not available] Times Cited: 1
 By: Ibrahim, N. A; Adesta, E. Y. T; Endut, N. A; et al.
 International Journal of Engineering Materials and Manufacture Volume: 2 Issue: 2 Pages: 25-30 Published: 2017
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4. **High velocity impact responses of sandwich panels with metal fibre laminate skins and aluminium foam core** Times Cited: 11
 By: Liu, Chengjun; Zhang, Y. X.; Ye, L.
 INTERNATIONAL JOURNAL OF IMPACT ENGINEERING Volume: 100 Pages: 139-153 Published: FEB 2017

5. **Mechanical Testing and Finite Element Simulations for the Use of Cellular Metals as Car Seat Components** Times Cited: 3
 By: Nestic, Srecko; Unruh, Klaus; Michels, Wilhelm; et al.
 STEEL RESEARCH INTERNATIONAL Volume: 83 Issue: 10 Pages: 972-980 Published: OCT 2012

6. **Applications of Cellular Materials - An Overview** Times Cited: 1
 By: Prabhu, S.; Bupesh Raja, V.K.; Rajan, N.
 Applied Mechanics and Materials Volume: 766-767 Pages: 511-17 Published: 2015

7. **STUDY OF SANDWICH FOAM COEXTRUSION** Times Cited: 7
 By: SHETTY, R; HAN, CD
 JOURNAL OF APPLIED POLYMER SCIENCE Volume: 22 Issue: 9 Pages: 2573-2584 Published: 1978

8. Title: [not available] Times Cited: 1
 By: Szyniszewski, S; Smith, B; Arwade, S; et al.
 12 INT LS DYNA US C Published: 2012
[\[Show additional data\]](#)

9. **Investigation of the Behavior of Open Cell Aluminum Foam** Times Cited: 4
 By: Veale, P. J.
 THESIS Published: 2010
 M. S. thesis
 Publisher: Dept. Civil. Env. Eng., Mass. Univ., Amherst
 URL: <https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1527&context=theses>

10. **Three-point bending behavior of aluminum foam sandwich with steel panel** Times Cited: 17
 By: Zu, Guo-yin; Lu, Ri-huan; Li, Xiao-bing; et al.
 TRANSACTIONS OF NONFERROUS METALS SOCIETY OF CHINA Volume: 23 Issue: 9 Pages: 2491-2495 Article Number: 1003-6326(2013)23:9<2491:TPBBOA>2.0.TX;2-6 Published: SEP 2013

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