ISSN 1816-112X

Science Citation Index Expanded, Materials Science Citation Index and ISI Alerting

Advanced Steel Construction
an international journal

Cover: Skylight at MGM, Macau, China
designed by second-order P-Δ-δ analysis without assumption of effective length

General Information
Advanced Steel Construction, an international journal

Aims and scope

The International Journal of Advanced Steel Construction provides a platform for the publication and rapid dissemination of original and up-to-date research and technological developments in steel construction, design and analysis. Scope of research papers published in this journal includes but is not limited to theoretical and experimental research on elements, assemblages, systems, material, design philosophy and codification, standards, fabrication, projects of innovative nature and computer techniques. The journal is specifically tailored to channel the exchange of technological know-how between researchers and practitioners. Contributions from all aspects related to the recent developments of advanced steel construction are welcome.

Instructions to authors

Submission of the manuscript. Authors may submit double-spaced manuscripts preferably in MS Word by emailing to one of the chief editors as follows for arrangement of review. Alternatively papers can be submitted on a diskette to one of the chief editors.

Asian Pacific , African and organizing editor : Professor S.L. Chan, Email: ceslchan@polyu.edu.hk
American editor : Professor W.F. Chen, Email: waifah@hawaii.edu
European editor : Professor R. Zandonini, Email: riccardo_zandonini@ing.unitn.it

All manuscripts submitted to the journal are recommended to accompany with a list of four potential reviewers suggested by the author(s). This list should include the complete name, address, telephone and fax numbers, email address, and at least five keywords that identify the expertise of each reviewer. This scheme will improve the process of review.

Style of manuscript

General. Author(s) should provide full postal and email addresses and fax number for correspondence. The manuscript including abstract, keywords, references, figures and tables should be in English with pages numbered and typed with double line spacing on single side of A4 or letter-sized paper. The front page of the article should contain:

a) a short title (reflecting the content of the paper);
b) all the name(s) and postal and email addresses of author(s) specifying the author to whom correspondence and proofs should be sent;
c) an abstract of 100-200 words; and
d) 5 to 8 keywords.

The paper must contain an introduction and a conclusion. The length of paper should not exceed 25 journal pages (approximately 15,000 words equivalents).

Tables and figures. Tables and figures including photographs should be typed, numbered consecutively in Arabic numerals and with short titles. They should be referred in the text as Figure 1, Table 2, etc. Originally drawn figures and photographs should be provided in a form suitable for photographic reproduction and reduction in the journal.

Mathematical expressions and units. The Systeme Internationale (SI) should be followed whenever possible. The numbers identifying the displayed mathematical expression should be referred to in the text as Eq. (1), Eq. (2).

References. References to published literature should be referred in the text, in the order of citation with Arabic numerals, by the last name(s) of the author(s) (e.g. Zandonini and Zanon [3]) or if more than three authors (e.g. Zandonini et al. [4]). References should be in English with occasional allowance of 1-2 exceptional references in local languages and reflect the current state-of-technology. Journal titles should be abbreviated in the style of the Word List of Scientific Periodicals. References should be cited in the following style [1, 2, 3].

Journal: [1] Chen, W.F. and Kishi, N., "Semi-rigid Steel Beam-to-column Connections, Data Base and Modelling", Journal of Structural Engineering, ASCE, 1989, Vol. 115, No. 1, pp. 105-119.
Book: [2] Chan, S.L. and Chui, P.P.T., "Non-linear Static and Cyclic Analysis of Semi-rigid Steel Frames", Elsevier Science, 2000.
Proceedings: [3] Zandonini, R. and Zanon, P., "Experimental Analysis of Steel Beams with Semi-rigid Joints", Proceedings of International Conference on Advances in Steel Structures, Hong Kong, 1996, Vol. 1, pp. 356-364.

Proofs. Proof will be sent to the corresponding author to correct any typesetting errors. Alternations to the original manuscript at this stage will not be accepted. Proofs should be returned within 48 hours of receipt by Express Mail, Fax or Email.

Copyright. Submission of an article to "Advanced Steel Construction" implies that it presents the original and unpublished work, and not under consideration for publication nor published elsewhere. On acceptance of a manuscript submitted, the copyright thereof is transferred to the publisher by the Transfer of Copyright Agreement and upon the acceptance of publication for the papers, the corresponding author must sign the form for Transfer of Copyright.

Permission. Quoting from this journal is granted provided that the customary acknowledgement is given to the source.

Page charge and Reprints. There will be no page charges if the length of paper is within the limit of 25 journal pages. A total of 30 free offprints will be supplied free of charge to the corresponding author. Purchasing orders for additional offprints can be made on order forms which will be sent to the authors. These instructions can be obtained at the Hong Kong Institute of Steel Construction, Journal website: http://www.hkisc.org

The International Journal of Advanced Steel Construction is published quarterly by non-profit making learnt society, The Hong Kong Institute of Steel Construction, c/o Department of Civil & Structural Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong.

Subscription inquiries and change of address. Address all subscription inquiries and correspondence to Member Records, IJASC. Notify an address change as soon as possible. All communications should include both old and new addresses with zip codes and be accompanied by a mailing label from a recent issue. Allow six weeks for all changes to become effective.

The Hong Kong Institute of Steel Construction
HKISC
c/o Department of Civil and Structural Engineering,
The Hong Kong Polytechnic University,
Hunghom, Kowloon, Hong Kong, China.
Tel: 852- 2766 6047 Fax: 852- 2334 6389
Email: *ceslchan@polyu.edu.hk* Website: *http://www.hkisc.org/*
ISSN 1816-112X
Science Citation Index Expanded, Materials Science Citation Index and ISI Alerting

ISSN 1816-112X

Science Citation Index Expanded, Materials Science Citation Index and ISI Alerting

Advanced Steel Construction
an international journal

VOLUME 5 NUMBER 2 JUNE 2009

Technical Papers (Special Issue)

Guest Editorial
R.G. Beale

Bracing Type Pure Aluminium Stiffened Shear Panels : An Experimental Study 106
Gianfranco De Matteis, Giuseppe Brando, Simeone Panico and Federico M. Mazzolani

Sensitivity and Statistical Analysis within the Elaboration of Steel Plated Girder Resistance 120
J. Melcher, M Škaloud, Z. Kala and M. Karmazinová

A Closed Form Soloution for Predicting Springback in Bending of Beams Including Hardening Effect 127
A. López Castro, J.F. Durodola and N.A. Fellows

Strength of MIG Welded Connections in Fire Exposed Aluminium Structures 136
J. Maljaars and F. Soetens

Numerical Analyses of Cold-Formed Thin-Walled Sections with Consideration of Imperfections Due to the Production Process 151
Albrecht Gehring and Helmut Saal

Design of Wide-flange Stainless Steel Sections 164
M. Lecce and K.J.R. Rasmussen

Full-Scale Tests on Cold-Formed Steel Pitched-Roof Portal Frames with Bolted Joints 175
D. Dubina, A. Stratan and Zs. Nagy

GBT and cFSM: Two Modal Approaches to the Buckling Analysis of Unbranched Thin-Walled Members 195
S. Ádány, N. Silvestre, B.W. Schafer and D. Camotim

Conference Announcements

GUEST EDITORIAL

R G Beale, BSc, PhD
Department of Mechanical Engineering, Oxford Brookes University, Oxford, UK

The papers in this special edition are extended versions of eight of the papers presented at the Sixth International Conference on Steel and Aluminium Structures (ICSAS'07) held at St Catherine's College, Oxford, UK between June 24th-27th July. At the conference 137 papers were presented by authors from . The conference series takes place every four years and has been held in Finland and Australia. The next one will take place in Malaysia in 2011.

All the papers in this special edition were selected by members of the UK Committee for the conference and were reviewed by the normal procedures for the journal. Of the eight papers two of them refer to aluminium structures but the principles contained therein are applicable to steel structures. The paper by Maljaars and Soetens details experimental and computational analyses of aluminium structures exposed to fire with particular concentration on the heat affected zone. The paper by de Matteis et al describes the experimental verification of an aluminium shear panel which is designed to be used as a method of protecting medium rise structures against seismic actions. The papers by Dubina et al, Gehring and Saal, and Ádány et al are concerned with thin-walled steel structures, their production and analysis especially with regard to the influence of imperfections. The paper by Melcher et al is concerned with applying reliability theory to obtain estimates of the resistance of steel girders to imperfections. The final paper by Lopéz-Castro et al is concerned with estimating springback after forming loads are released.