

Figure 4.22 – Experimental (a) and numerical (b) configuration of the deformed C beam with no restraints after fire test



Figure 4.23 – Experimental (a) and numerical (b) configuration of the deformed lipped I beam with no restraints after fire test



**Professor Luis Laim**

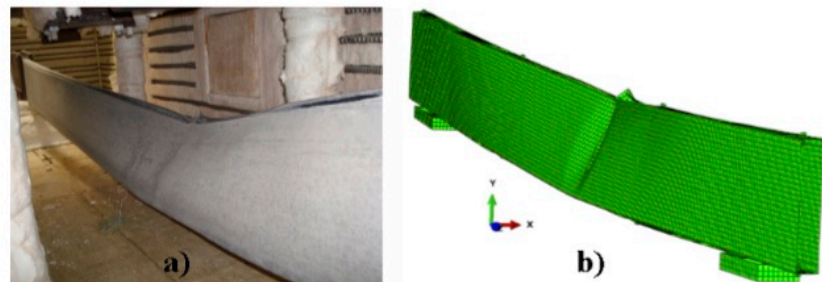


Figure 4.24 – Experimental (a) and numerical (b) configuration of the deformed R beam with no restraints after fire test

From: Luis Miguel dos Santos Laim, “Experimental and numerical analysis on the structural behaviour of cold-formed steel beams subjected to fire”, Department of Civil Engineering, University of Coimbra, Portugal, 2013

See:

<https://www.uc.pt/fctuc/dec/pessoas/docentes1/Laim>

<http://www.degois.pt/visualizador/curriculum.jsp?key=4987276382051925>

[https://scholar.google.com/citations?user=KGC1\\_KMAAAAJ&hl=en](https://scholar.google.com/citations?user=KGC1_KMAAAAJ&hl=en)

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**Biography:**

Luís Miguel dos Santos Laim is a Civil Engineer and holds a Ph.D. in Fire Safety Engineering in the Department of Civil Engineering of the University of Coimbra (UC). He is now working as a post-doctor at Coimbra University and his principal research interests lie in the areas of structural testing at high temperatures, numerical modelling and the development of simplified calculation methods. Luis also holds a Licentiate degree and an Integrated Master's degree in Civil Engineering from the University of Coimbra, both with a grade of 17 out of 20. He is author of eight papers in international periodicals with scientific refereeing (1 on the Composite Structures, 1 on the Journal of Advanced Concrete Technology, 2 on the Engineering Structures and 4 on the Thin-Walled Structures) and published more than 25 papers in conference proceedings. In addition, he presented many research papers in conferences, a bit around the world (such as, in Brazil, Czech Republic, Sweden, Turkey, USA and China) and was co-supervisor of four Master's Degree Dissertations in UC. His main current project focuses on the development of simplified calculation methods for fire design of cold-formed steel members under the framework of research project PTDC/ECM/116859/2010, funded by the Portuguese Foundation for Science and Technology (FCT). Finally, he participated as co-coordinator of the Organizing Committee of the 2nd Ibero-Latin-American Congress on Fire Safety, held at UC, in 2013. So far, in his professional activities interacted with 19 employees in co-authorship of scientific papers. Since 2011, Luís is a member of the Ordem dos Engenheiros and of the Luso-Brazilian Association for Fire Safety (ALBRASCI).

#### **Selected Publications:**

Luis Miguel dos Santos Laim, "Experimental and numerical analysis on the structural behaviour of cold-formed steel beams subjected to fire", Department of Civil Engineering, University of Coimbra, Portugal, 2013

#### **Journal Articles:**

Joao Paulo C. Rodrigues, Luis Laim and Antonio Moura Correia, "Behaviour of fiber reinforced concrete columns in fire", Composite Structures, Vol. 92, No. 5, pp 1263-1268, April 2010

Luis Laim, Joao Paulo C. Rodrigues and Luis S. Silva, "Flexural behavior of cold-formed steel beams", Chapter in Design, Fabrication and Economy of Metal Structures, Springer, 2013, pp. 133-138

Luis Laim, Joao Paulo C. Rodrigues and Luis Simoes da Silva, "Experimental and numerical analysis on the structural behaviour of cold-formed steel beams", Thin-Walled Structures, Vol. 72, pp 1-13, November 2013

Luis Laim, Joao Paulo C. Rodrigues and Luis Simoes da Silva, "Experimental analysis on cold-formed steel beams subjected to fire", Thin-Walled Structures, Vol. 74, pp 104-117, January 2014, DOI: 10.1016/j.tws.2013.09.006

Helder D. Craveiro, Joao Paulo C. Rodrigues and Luis Laim, "Cold-formed steel columns made with open cross-sections subjected to fire", Thin-Walled Structures, Vol. 85, pp 1-14, December 2014

J.P.C. Rodrigues, L.M. Laim and M. Korzen, "Fire behaviour of circular concrete columns with restrained thermal elongation", Journal of Advanced Concrete Technology, Vol. 12, No. 9, pp 289-298, 2014

Luis Laim, Joao Paulo C. Rodrigues, and Helder D. Craveiro, "Flexural behaviour of beams made of cold-formed steel sigma-shaped sections at ambient and fire conditions", Thin-Walled Structures, Vol. 87, pp 53-65, 2015

Luis Laim, Joao Paulo C. Rodrigues and Helder D. Craveiro, "Flexural behaviour of axially and rotationally restrained cold-formed steel beams subjected to fire", Thin-Walled Structures, Vol. 98, Part A, pp 39-47, January 2016

Luis Laim and Joao Paulo C. Rodrigues, "Numerical analysis on axially-and-rotationally restrained cold-formed steel beams subjected to fire", Thin-Walled Structures, Vol. 104, pp 1-16, July 2016

H.D. Craveiro, J. Paulo C. Rodrigues and L. Laim, "Buckling resistance of axially loaded cold-formed steel columns", Thin-Walled Structures, Vol. 106, pp 358-375, September 2016

Helder D. Craveiro, Joao Paulo C. Rodrigues and Luis Laim, "Experimental analysis of built-up closed cold-formed steel columns with restrained thermal elongation under fire conditions", *Thin-Walled Structures*, Vol. 107, pp 564-579, October 2016

Luis Laim and Joao Paulo C. Rodrigues, "On the applicability and accuracy of fire design methods for open cold-formed steel beams", *Journal of Building Engineering*, Vol. 8, pp 260-268, December 2016