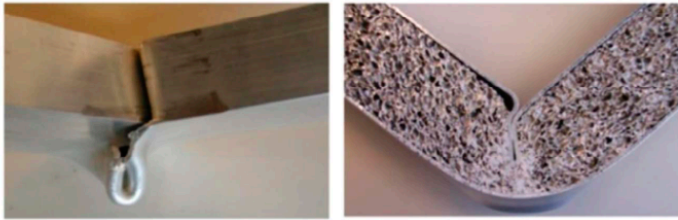




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a



b

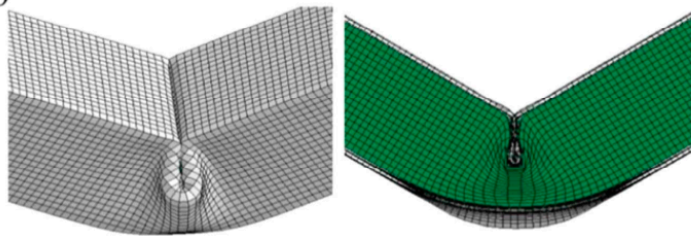
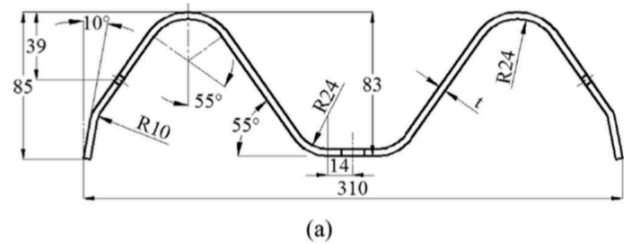
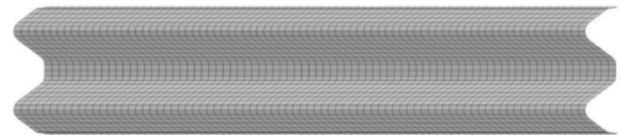


Fig. 6. Deformation pattern of the foam-filled single-cell thin-walled structure: (a) Experiment [31] and (b) simulation.



(a)



(b)

Fig. 8. The W-beam rail panel: (a) Rail dimensions [5]; and (b) FE model.

Left-hand image is from: Hanfeng Yin, Youye Xiao, Guilin Wen, Nianfei Gan, Can Chen and Jinie Dai, “Multi-objective robust optimization of foam-filled bionic thin-walled structures”, *Thin-Walled Structures*, Vol. 109, pp 332-343, December 2016

Right-hand image is from: Hanfeng Yin, Youye Xiao, Guilin Wen and Hongbing Fang, “Design optimization of a new W-beam guardrail for enhanced highway safety performance”, *Advances in Engineering Software*, Volume 112, October 2017, Pages 154-164

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Selected Publications:

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