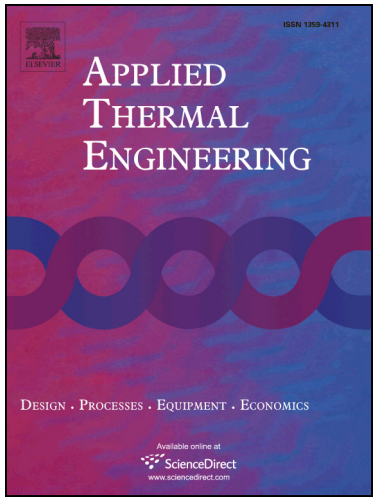

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PII: S1359-4311(16)30968-1
DOI: http://dx.doi.org/10.1016/j.applthermaleng.2016.06.057
Reference: ATE 8468

To appear in: *Applied Thermal Engineering*

Received Date: 26 February 2016
Revised Date: 5 May 2016
Accepted Date: 8 June 2016

Please cite this article as: Y. Wang, Q. Wang, J. Sun, L. He, K.M. Liew, Influence of fire location on the thermal performance of glass façades, *Applied Thermal Engineering* (2016), doi: http://dx.doi.org/10.1016/j.applthermaleng.2016.06.057

Influence of fire location on the thermal performance of glass façades

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Abstract

The breakage and fallout of glass façades may easily occur and significantly affect the enclosed fire dynamics. However, little is known about the effect of fire location on the glass thermal response. In particular, due to large size and various installation forms, glass façades perform differently when fire location alters. The different glass thermal performances, resulting from fire location changing from glass edge to center, are simulated using finite element method. Frame supported and point supported glass panes are employed. The glass stress distribution, breaking time, crack initiation and propagation are presented. It is established that fire location has a notable influence on thermal behavior of glass. Frame supported glass façades are more prone to breakage when fire located in the center of a pane. If the fire is positioned close to the fixing points, point supported glass façades will be more prone to breaking. For the purpose

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