

THE USE OF ADIABATIC SURFACE TEMPERATURE TO DESIGN STRUCTURES FOR FIRE EXPOSURE

Ulf Wickström¹, Amanda Robbins², Greg Baker²

¹SP Technical Research Institute of Sweden, Borås, Sweden

²BRANZ Ltd, Fire and Structural Engineering Section, Porirua, New Zealand

Presented at 6th International Conference Structures in Fire, East Lansing, Michigan, US, June 2010

ABSTRACT

Ongoing international collaborative research clearly demonstrates that the concept of adiabatic surface temperature is a simple single parameter to describe the complex convective and radiative conditions to which the surface of a structural element is exposed during fire. This parameter is a convenient and simple interface between fire and thermal/structural models. This paper presents existing published and new unpublished research for fire/structural engineers so as to contribute to the advancement of the engineering practice of designing structures in fire.