

# Computer Models For Fire and Smoke

<i>Model Name:</i>	SICOM
<i>Version:</i>	1.0
<i>Classification:</i>	Zone model
<i>Very Short Description:</i>	A two-zone model to predict temperature evolution in case of a fire in a compartment
<i>Modeler(s), Organization(s):</i>	Daniel Joyeux – Centre Technique Industriel de la Construction Métallique (CTICM)
<i>User's Guide:</i>	-----
<i>Technical References:</i>	Report 'Développement d'un modèle à deux zones de Simulation d'un Incendie dans un Compartiment' – Juin 1999
<i>Validation References:</i>	See Technical references
<i>Availability:</i>	Not available
<i>Price:</i>	-----
<i>Necessary Hardware:</i>	-----
<i>Computer Language:</i>	Fortran
<i>Size:</i>	-----
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## *Detailed Description:*

SICOM is two zone model modeling a fire in a single compartment, based in a stratification of smoke. It solves the ODE from the mass and energy conservation. These

equations predict as functions of time quantities such as pressure, layer heights and temperatures given the accumulation of mass and enthalpy in the two layers. The radiative and convective transfer to walls are of course taken into account, leading to temperature distribution into walls. The gas exchanges through openings are assessed from pressure distribution. Radiative exchanges are also taken into account. The radiative losses of the flames are assessed according to the plume height and interface height. These losses become then a source term for wall heat in the lower layer.