Computer Models
For
Fire and Smoke

Model Name: COMPSL

Version: Version 1

Classification: Structural Finite Difference

Very Short Description: Model for the calculation of temperatures of multi-layer slabs during exposure to fire.

Modeler(s), Organization(s):   T.T. Lie, National Fire Laboratory, Institute for Research in Construction, National Research Council of Canada.

User's Guide: -----

Technical References: Lie, T.T. "Calculation of the Fire Resistance of Composite Concrete Floor and Roof Slabs," Fire Technology, Vol. 14, No. 1, February 1978.

Validation References: -----

Availability: Not Available

Price: N/A

Necessary Hardware: -----

Computer Language: FORTRAN 77

Size: 80 kB

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Detailed Description:

Input:

Thickness of the layers and concrete type. For other materials, the thermal properties also have to be specified.

Output:

Temperature distribution in the slab at selected times.

Assumptions:

COMPSL calculates, using a finite difference method, the temperatures in one to three layer slabs exposed to the North American standard fire (any other fire can be substituted). The boundary conditions are radiation and convection at both the fire-exposed side and the unexposed side of the slab.