Computer Models
For
Fire and Smoke

Model Name:	TCSLBM
Version:	Version 1
Classification:	Structural Finite Difference
Very Short Description:	Predicts temperature distributions in 2D for fire-exposed concrete slab-beam assembly.
Modeler(s), Organization(s):	M.A. Sultan and T.T. Lie, National Fire Laboratory, Institute for Research in Construction, National Research Council of Canada
User's Guide:	-----
Technical References:	Sultan, M.A., Lie, T.T., and Lin, J., "Heat Transfer Analysis for Fire-Exposed Concrete Slab-Beam Assemblies," Internal Report No. 605, Institute for Research in Construction, National Research Council of Canada, 1991. Lie, T.T. February 1978. Calculation of the fire resistance of composite concrete floor and roof slabs, *Fire Technology*, Vol. 14, No. 1, pp. 26-46.
Validation References:	-----
Availability:	Not Available
Price:	N/A
Necessary Hardware:	-----
Computer Language:	FORTRAN 77
Size:	42 kB

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Detailed Description:

Input:

Slab and beam dimensions.

Output:

Temperature distributions in 2D.

Assumptions:

Although moisture movement was not considered in the model, the moisture effect in the heat balance for each element was taken into account.

Limitations:

1. Only for concrete.
2. Uses the ASTM time-temperature curve.
3. Fire duration up to 4 hours.