# Computer Models
# For
# Fire and Smoke

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| *Model Name*: | ELVAC |
| *Version*: | 1.00 |
| *Classification*: | Evacuation Time Calculation |
| *Very Short Description*: | Calculates emergency evacuation time using elevators. |
| *Modeler(s), Organization(s)*: | Daniel M. Alvord, John H. Klote, NIST |
| *User's Guide*: | Klote, J.H. and Alvord, D.M. 1992. Routine for Analysis of the People Movement Time for Elevator Evacuation, National Institute of Standards and Technology, NISTIR 4730. |
| *Technical References*: | Klote, J.H. and Alvord, D.M. 1992. Routine for Analysis of the People Movement Time for Elevator Evacuation, National Institute of Standards and Technology, NISTIR 4730. |
| *Validation References*: | None |
| *Availability*: | NIST |
| *Price*: | Free |
| *Necessary Hardware*: | PC 286 |
| *Computer Language*: | BASIC |
| *Size*: | 78 KB |
| *Contact Information*: | John H. Klote, JHK, Inc., McLean, VA, phone 703-356-1691 |

*Detailed Description*:

ELVAC (Elevator Evacuation) is an interactive computer program that estimates the time required to evacuate people from a building with the use of elevators and stairs. It is cautioned that elevators generally are not intended as a means of fire evacuation, and they should not be used during fires. However, it is possible to design elevator systems that for fire emergencies, and ELVAC can be used to evaluate the potential performance of such systems. ELVAC calculates the evacuation time for one group of elevators. If a building has more than one group of elevators, ELVAC can be run on each group separately. Input consists of floor to floor heights, number of people on floors, number of elevators in the group, elevator speed, elevator acceleration, elevator capacity, elevator door type and width, and various inefficiency factors. The output is a table of elevator travel time, round trip time, people moved, and number of round trips for each floor plus the total evacuation time.