



LUND
UNIVERSITY

Department of Fire Safety Engineering
<http://www.brand.lth.se/english/>

Fire Safety Engineering Resources on the Internet

- **Organizations dealing with Fire Safety issues**
- **Tools**
- **Laboratories**
- **International organizations**
- **Education at University level**
- **Magazines**
- **Fire modeling**
- **Evacuation modeling**

Organizations dealing with Fire Safety issues

National Institute of Standards and Technology (NIST), Building and Fire Research Lab

<http://www.bfrl.nist.gov/>

NIST is the national laboratory dedicated to enhancing the competitiveness of U.S. industry and public safety performance prediction methods, measurement technologies and technical advances needed to assure the life cycle quality and economy of constructed facilities. Its products are used by those who own, design, construct, supply, and provide for the safety or environmental quality of constructed facilities.

- Publications online (download)
- Fire modeling computer programs (download)
- International conferences
- Search their library FIREDOC
- Project summaries
- Fire Test Data
- Research



National Fire Protection Association (NFPA)

<http://www.nfpa.org/>

The mission of the international nonprofit organization is to reduce the burden of fire on the quality of life by advocating scientifically based consensus codes and standards, research, and education for fire and related safety issues.

- National Fire Codes
- Fire Investigations (download)
- Education
- Research
- Certification
- Engineering Advisory Service
- Statistical data service
- Library
- Publications
- Seminars, workshops and conferences
- Periodicals



United States Fire Administration (USFA)

<http://www.usfa.fema.gov/>

USFA provides national leadership in fire training, data collection, technology and public education and awareness, supporting the efforts of local communities to save lives and reduce injuries and property loss due to fire.

- National Fire Academy
- National Fire Programs
 - Arson
 - National Fire Data Center
 - Rescue
 - Fire Safety and Public Education
 - Emergency medical services
 - Fire Fighter Health and Safety
 - Fire Protection
 - Urban Wildland Interaction
- Education
- Publications (download)



Society of Fire Protection Engineers (SFPE)

<http://www.sfpe.org/>

It is the professional society representing those practicing the field of fire protection engineering. The purpose of the Society is to advance the science and practice of fire protection engineering and its allied fields, to maintain a high ethical standard among its members and to foster fire protection engineering education.

- Publications
- Fire modeling computer programs (download)
- International conferences
- Certification



THE INSTITUTION OF FIRE ENGINEERS

<http://www.ife.org.uk/>

The Institution of Fire Engineers, an international learned body, was founded in 1918 with the following main object: To promote, encourage and improve the science and practice of Fire Extinction, Fire Prevention and Fire Engineering and all operations and expedients connected therewith, and to give an impulse to ideas likely to be useful in connection with or in relation to such science and practice to the members of the Institution and to the community at large.



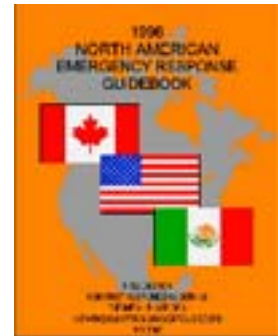
Tools

North American Emergency Response Guidebook

http://www.tc.gc.ca/canutec/erg_gmu/erg2000_menu.htm

It is primarily a guide to aid first responders in quickly identifying the specific or generic hazards of the material(s) involved in the incident, and protecting themselves and the general public during the initial response phase of the incident.

- ID number index
- Name of Material Index
- List of Dangerous Water Reactive-Materials
- Actions
 - Safety Precautions
 - Protective Actions
 - Protective Action Decision Factors to Consider
 - Who to Call for Assistance
 - Fire and Spill Control



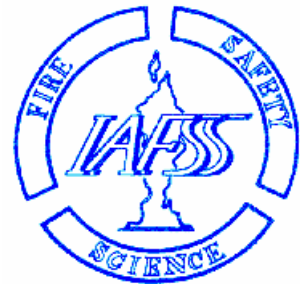
The IAFSS Mail List

<http://www.iafss.org/bb.htm#mailing%20list>

The Association operates a moderated mailing list. Posting on the list is limited to list subscribers. Views, opinions and information presented on the mailing list are not necessarily those of the International Association for Fire Safety Science.

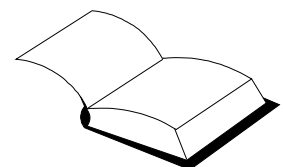
To subscribe/unsubscribe send an email to listserv@cc.newcastle.edu.au with the words "sub iafss" or "unsub iafss" in the message body.

Messages for distribution by the mailing list should be forwarded to iafss@cc.newcastle.edu.au.



Papers and publications

- Lund University
<http://www.brand.lth.se/english/publications>
- NIST
<http://flame.cfr.nist.gov/bfrlpubs/>
- NFPA
<http://www.nfpa.org/investigations.html>
- USFA
<http://www.usfa.fema.gov/pub/online.htm>



Laboratories

Fire Laboratories

- Fire Research Station (FRS), UK
<http://www.bre.co.uk/frs/>
- VTT Building Technology, Finland
<http://www.vtt.fi/rte/firetech/>
- Swedish National Testing and Research Institute (SP)
<http://www.sp.se/>
- Norwegian Fire Research Laboratory (SINTEF)
<http://www.sintef.no/units/civil/nbl/>
- Western Fire Center, USA
<http://www.westernfire.com/>
- Factory Mutual, USA
<http://www.fmglobal.com/>



What kind of information?

- certified products
- facilities
- research and development
- testing procedures
- research results
- projects
- publications
- specialties
- and lots of other information

International organizations

The International Organization for Standardization (ISO), Technical Committee 92

<http://www.bre.co.uk/iso/>

The mission of ISO is to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing cooperation in the spheres of intellectual, scientific, technological and economic activity.

Scope for Technical Committee 92:

Standardization of the methods of assessing:

- fire hazards and fire risk to life and to property;
- the contribution of design, materials, building materials, products and components to fire safety

and methods of mitigating the fire hazards and fire risks by determining the performance and behavior of these materials, products and components, as well as of buildings and structures.



International Council for Building Research (CIB), Work-group 14

<http://www.vtt.fi/rte/firetech/cibw14/>

CIB is a world wide network of over 5000 experts from about 500 organizations, who actively cooperate and exchange information in over 50 Commissions covering all fields in building and construction related research and development.

The purpose of W14 is to:

- provide a strategic overview of fire safety technology needs over the next 10 years,
- provide an ongoing research focus for the development of a sound technical basis for fire safety engineering methods,
- promote the acceptance of fire safety engineering methods and their relationship with performance based codes,
- provide fire safety technology input to other CIB Working Commissions as appropriate, and
- transfer fire safety engineering outputs internationally, including the standards community



Education at University level

Universities developing a model curriculum in FSE

- Lund University, Sweden
<http://www.brand.lth.se/english/>
- Worcester Polytechnic Institute, USA
<http://www.wpi.edu/Academics/Depts/Fire/>
- University of Maryland, USA
<http://www.enfp.umd.edu/>
- University of British Columbia, Canada
<http://www.ubc.ca/>
- University of Ulster, UK
<http://www.engj.ulst.ac.uk/SCOB/FIRE/firemsc.html>
- University of Canterbury, New Zealand
<http://www.civil.Canterbury.ac.nz>
- Victoria University, Australia
http://www.vu.edu.au/menu.cfm?menu_id=191



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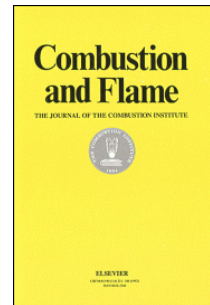
What kind of information?

- programs
- courses
- projects
- research
- resources
- senior project publications
- and lots of other information

Magazines

There are a number of journals presented on the web. Some of them are possible to download, other offers list of contents and order forms.

- IAFSS Newsletter
<http://www.wpi.edu/Academics/Depts/Fire/new-iafss/newsletter.html>
- Combustion and Flame
<http://www.elsevier.nl/inca/publications/store/5/0/5/7/3/6/>
- Fire Technology
<http://www.nfpa.org/firetech.html>
- Fire and Materials
<http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=3189>
- Journal of Fire Science
<http://www.techpub.com/tech/default.asp>
- Journal of Hazardous Materials
<http://www.elsevier.nl/inca/publications/store/5/0/2/6/9/1/>



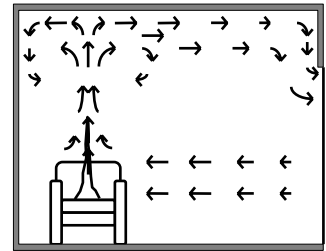
Fire Modeling

Hazard I

<http://cfast.nist.gov/hazardi.html>

HAZARD I involves an interdisciplinary consideration of physics, chemistry, fluid mechanics, heat transfer, biology, toxicology, and human behavior. As an implementation of the hazard assessment method, the HAZARD I software consists of a collection of data, procedures, and computer programs which are used to *simulate* the important time-dependent phenomena involved in residential fires. The following models are include:

- Smoke transport model (CFAST)
- Evacuation (Exit)
- Detector and Sprinkler Activation (Detact)
- Toxicity (Tenab)

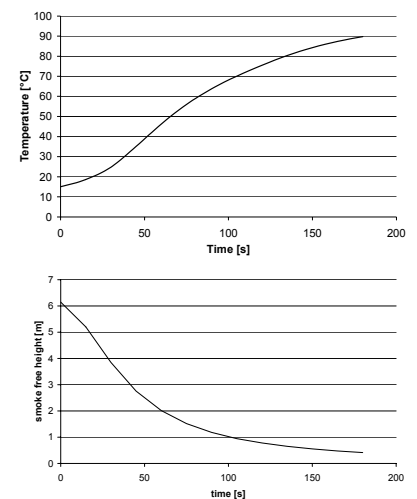


FASTLite

<http://flame.cfr.nist.gov/fire/fastlite.html>

FASTLite is a user friendly software package which builds on the core routines of FPEtool and the computer model CFAST to provide calculations of fire phenomena for use by the building designer, code official, fire protection engineer, and fire-safety related practitioner. FASTLite includes a number of tools of use to the fire safety practitioner:

- three room fire model
- heat and smoke detector activation
- suppression by sprinklers
- lateral flame spread
- mass flow through a vent
- atrium smoke temperature
- ceiling jet temperature plume
- filling rate
- radiant ignition of a nearby fuel



More fire modeling software (for free)

- NIST
<http://www.bfrl.nist.gov/864/fmabbs.html>
- SFPE
<http://www.wpi.edu/Academics/Depts/Fire/SFPE/software.html>

Evacuation modeling

Simulex

<http://www.ies4d.com/page13.html>

Simulex is a computer package for PCs which is able to simulate the escape movement of many people from large, geometrically complex building structures.

- Fast, easy-to-use importing of CAD DXF files, and the automatic assessment of routes and travel distances through the whole building.
- Precise modelling of each person's position, orientation, walking speed, side-stepping, overtaking movement and route-assessment at every 1/10th of a second.
- Full hard-disk recording of the evacuation, which can be played back at any time for repeated viewing and analysis
- Final output file describing the building geometry, the number of people in different parts of the building, and a breakdown of the number of people leaving the building over regular time-steps to enable flow rate analysis



Exodus

<http://fseg.gre.ac.uk/exodus/>

EXODUS - an evacuation tool for the safety industry - has been developed to meet the challenging demands of performance based safety codes. Based on a highly sophisticated set of submodels, it shatters the mould of traditional engineering analysis to produce realistic people-people, people-fire and people-structure interactions. As a result, the safety engineer can test more designs in less time to reach the optimal solution, free of the high cost and potential danger associated with human evacuation trials.

