

Swedish Building Regulations

Cecilia Uneram

Fire Protection Engineer
Brandskyddsföreningen Sverige

The history

- Bjärkarätten - our first regulation for cities from the middle ages – distance between buildings, lit the candles at night
- 1300 Magnus Erikssons stadslag – fire-fighting equipment in every house
- 1734 "Sveriges Rikes Lag", special building regulations – "Every houseowner should prevent fire"
- 1874 Byggnadsstadga – every city should have a Fire brigade and roles for fire protection
- 1931 new buildingcode – firewalls, building permits
- 1947 new regulation and new codes – local regulations not allowed
- 1950 BABS 50 – instructions for the construction Charter
- 1960 BABS 60 – the same regulations for countryside and cities
- 1967 SBN 67 (75 and 80) (Swedish buildingcodes)
- 1989 Nybyggnadsreglerna, NR 1. (Nr 2 1990, NR 3 1991, NR 4 1993)
- 1994 big changes in the buildingregulations and -codes. Safety in case of fire – chapter 5. Analytic design was allowed.
- 2011 New Construction/buildinglaw
- 2012 1/1 BBR 19 New buildingcodes

Some of the new things in BBR...

- Alternative design is no longer accepted
- Back to more specifications in the codes
- More strict guidance for the evaluations
- New classification of buildings and activities
- Sprinkler in health care facilities
- Evacuation possibilities for disabled
- Automatic fire alarm in some public areas
- Simplified design is included in the advices
- Special advices for analytic design



The ambition of the structural fire protection is not changed!

Simplified design

- Max two technical changes when sprinkler
- Max one technical change when there is already a requirement for sprinkler protection

Otherwise: Analytic design

Analytic design

- Design if not simplified design is accepted
- Verification is needed

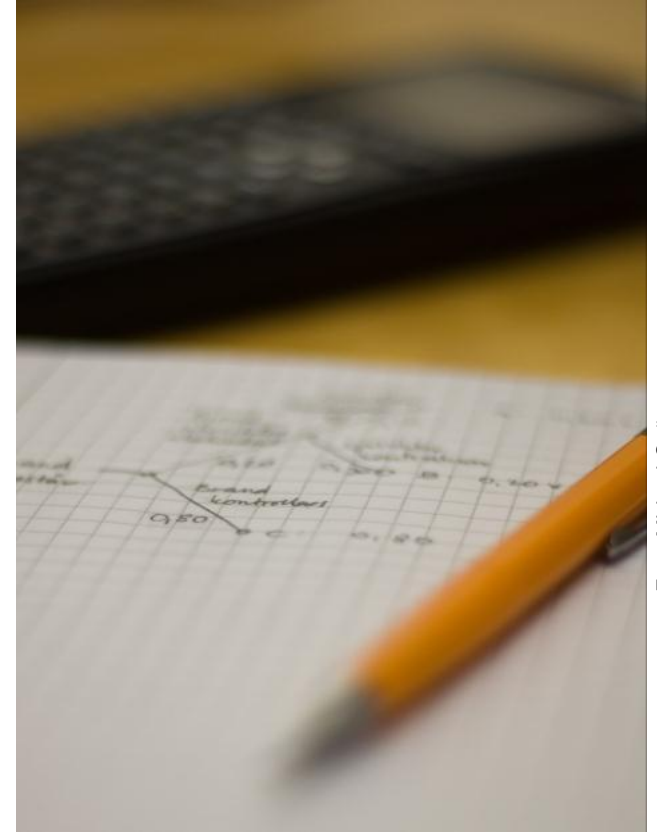


Foto: Michael Strömgren

The process

- Building permit
- Documentation of the fire protection of the building

- Supervision from the Firebrigade

Is what you see what you think?

- Functionbased buldingcodes
 - New materials
 - New design solutions



Lower level of ambition?

- No...
- ...it's just that the construction materials that's now used are fulfilling the lowest levels such as R0 and R15.
- Whats a theory before, now is a fact. The mariginals are gone!

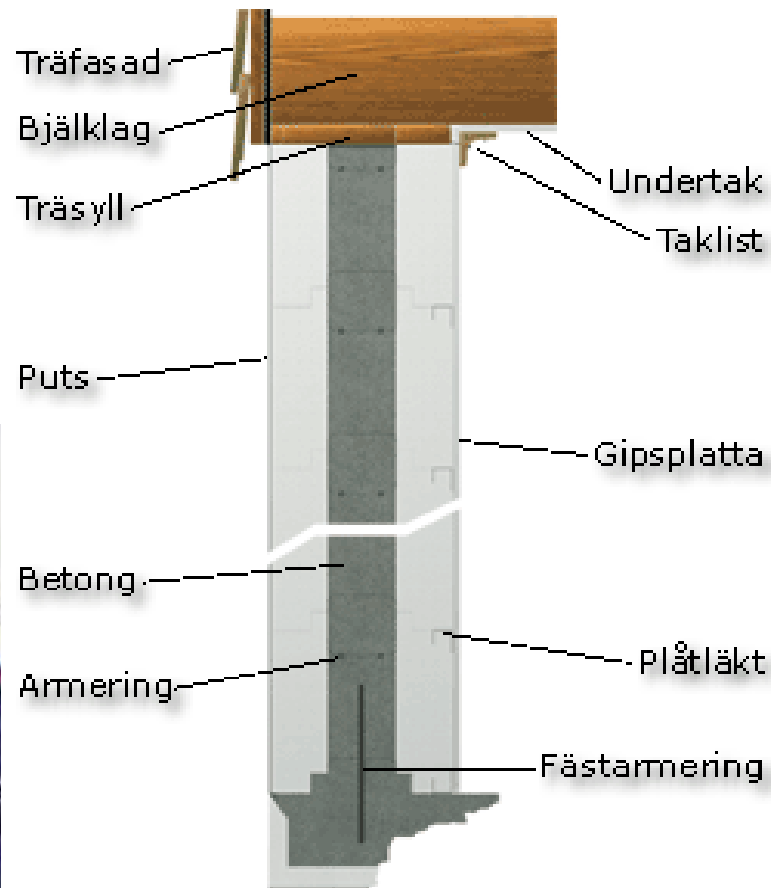
Is what you see what you think?



The answer: EPS

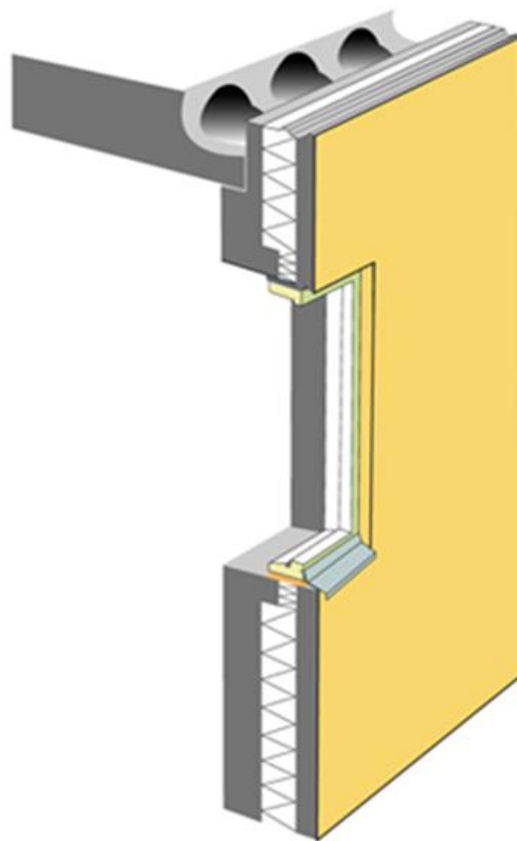






Sandwich

- "Strängbetong"



Boards





Why so popular?















But– the fire risk with EPS is not that known!



EPS



- Softens at +80°C.
- Melting at +150°C
- At +230°C ignition with flame.
- At +450-500°C selfignition.
- Very heavy and black smoke!

Is it possible to extinguish?

- Yes, but....
- the problem is that when the EPS has been heated, it will float and ignite at other places.

Dijon Frankrike



KRAUTA i Gävle

2006-08-13



KRAUTA i Gävle

2006-08-13



Gästrike Räddningstjänst
Utredare: Per Ringqvist
Pontus Löfving

”Utredningen visar att orsaken till den onormalt snabba brandspridningen härrör till att K-Rautas ytterväggar vid primärbrandplatsen var isolerat med 150 mm frigolit. Även taket till Jysk och ICA var till stora delar isolerat med frigolit och kork. Just det här problemet med frigoliten gjorde att hela varuhuset K-Rauta blev rökfyllt från golv till tak inom 2 minuter och 30 sekunder. Detta kan ses på flera av de 25 bevakningskameror som fanns runt om i butiken.”

Brand i garage i Vallentuna 2007-11-18



Utredare: Per Norén, Hans Lardner mfl, Södra Roslagens Brandförsvarsförbund

Nybyggnation i Huskvarna

2011-06-13



Utredare: Fredric Jonsson, Räddningstjänsten Jönköping

Saluhallen i Lund. 2011-07-29



Läsarbild från Sydsvenskan.

Byggarbetsplats Mariestad 2011-08-24



In the "new BBR"...

- ...it is still "OK" that buildings get totally damaged by a fire. A small fire can be a big one as long as the people inside the building gets out. The building regulations do not cover the constructional fire protection for the building itself.

... "in the new BBR"

- ...there is still no regulation about education och drills for learning the Fire brigade how to "run the bulidng" in case of fire.

Our mission!

A good fire safety!

Thank you!

cecilia.uneram@svbf.se

www.brandskyddsforeningen.se

www.boverket.se/brandskydd