

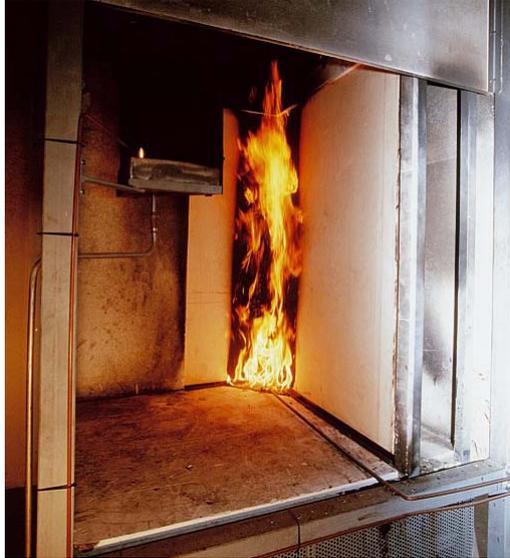
The capabilities and limitations of the Single Burning Item (SBI) test

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The development of the SBI test

- Developed by 9 fire laboratories (The OLG) nominated by 9 member states
- Work of OLG followed closely by the European Commissions Fire Regulators Group (FRG)
- CEN TC127 not involved before the test was fully developed

The SBI test

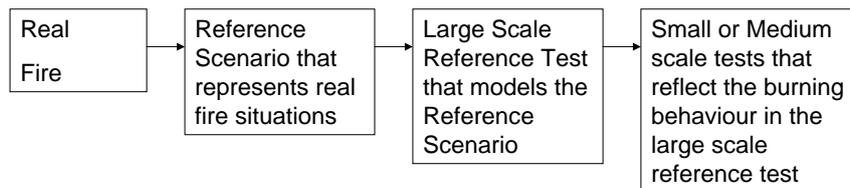


First Round Robin

- 30 products chosen by the national fire regulators
- Products reflected what SBI test should be capable of testing
- Test results showed Repeatability and Reproducibility
- Test results used to define the class limits of the Euroclass system

The Euroclass System

- The Euroclass System is linked directly to the perceived hazards in a reference scenario:

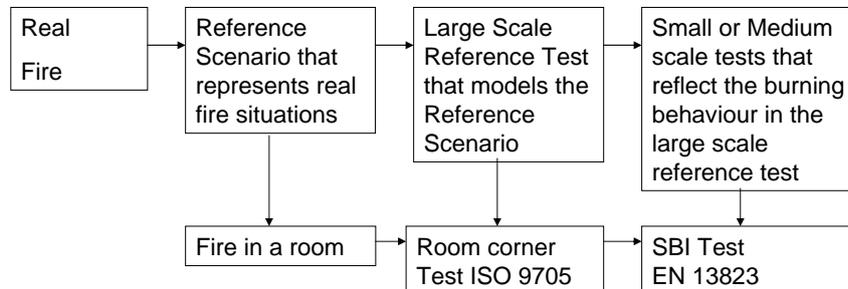


Large scale reference test

- Reference scenario is fire in a room
- The perceived hazard condition associated with a fire in a room is Flashover
- ISO 9705 chosen as the large scale reference test



The Euroclass System



- The Test result in the SBI test shall reflect a products propensity to cause flashover in the Room Corner test

Correlation between SBI and ISO 9705

- All 30 products from the Round Robin tested in ISO 9705
- Main classification parameter in SBI chosen to be FIGRA index
- Based on FIGRA a good correlation was found for 26 of 30 products
- Possible to use test results from ISO 9705 to define class limits for the SBI test

Definition of class limits

- ISO 9705 clearly identified 4 clusters of products based on time to flashover
- Agreed that time to flashover most critical parameter
- 4 clusters of products used to identify class limits for the SBI test

Capabilities of the SBI test

- Could test 26 of 30 products with a good correlation to ISO 9705
- The last 4 products (“Exotic products”) were: Cables, pipes, Polycarbonate and metal faced sandwich panels
- B. Sundström has since showed that for 90% of construction products the SBI test is capable of predicting the fire hazard

Guidance paper G

- Defines the role of the reference scenario and large scale reference test
- Provides a procedure for appealing for the use of another test than SBI
- Following this procedure will make it possible to define test methods which are capable of predicting the fire hazard of the last 10% of construction products

Further work

- CEN/TS 15447 Guidance on Mounting and Fixing
- CEN/TS 15117 Guidance on direct and extended field of application of reaction to fire test results
- Fire Sector Group (FSG) Recommendations

End Use application

- Test result to be related to end use application
- What to test: Materials, Products or Building elements?
- Class limits based on product testing
- For CE marking purposes the product as placed on the market shall be tested exposed to the flames of the test

Linear Products

- Includes Pipes, Pipe Insulation and cables
- New classification systems developed for cables and Pipe Insulation both following the procedure of Guidance Paper G
- Cables and Pipe Insulation good examples of following the basic principles behind the Euroclass System

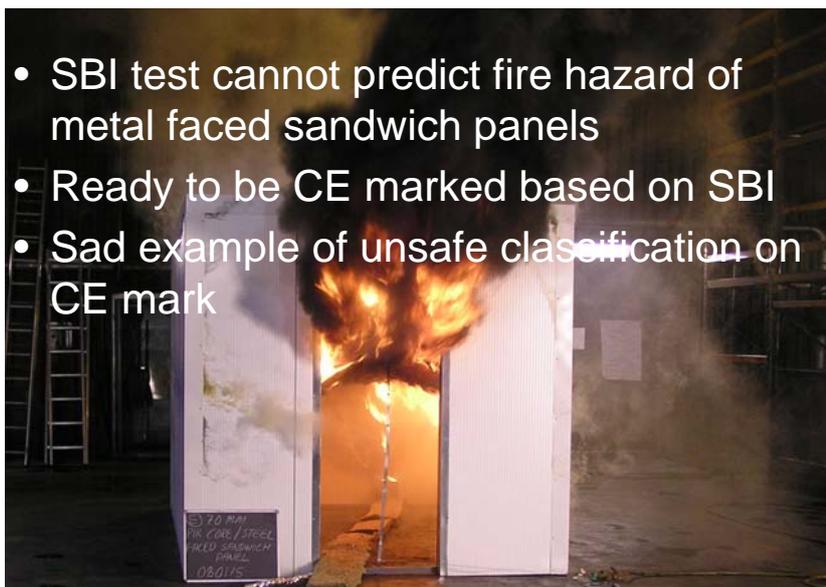
Metal faced Sandwich Panels

- “Exotic product” in 1st Round Robin
- SBI test puts most sandwich panels in Class B = No Flashover
- When tested in the Room Corner test the same panels most often go to flashover



Metal faced Sandwich Panels

- SBI test cannot predict fire hazard of metal faced sandwich panels
- Ready to be CE marked based on SBI
- Sad example of unsafe classification on CE mark



Innovative products

- Important to question if SBI test is the appropriate test
- Guidance Paper G makes it possible to define other reference scenarios and tests if needed
- TC127 can assist specification writers

Conclusions

- The Euroclass system and the SBI test is a big step forward in European harmonisation
- SBI test is capable of classifying 90% of construction products
- Remembering the link between the SBI test and the Room Corner test is critical if we want a fire safe Europe