



# THE MINI-SBI CONCEPT

Reduce costs and time to market with a scaled down test





## Background

During the product development process, fire performance is often identified as a barrier to launching a product to market. Traditionally, product developers have had no option but to perform full-scale tests to achieve information about how their product behaves in a fire situation. These tests are costly, time-consuming, and can be prohibitive to an agile development process. Therefore, DBI has developed an apparatus – the Mini-SBI – that can support producers in the product development process by reducing time-to-market and the costs involved while gaining a deeper knowledge about the fire-technical performance of the product.

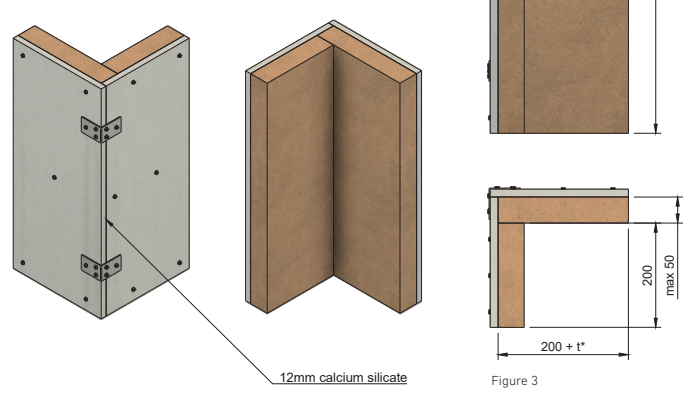
## Outputs from the Mini-SBI test

The Mini-SBI measures Heat Release Rate (HRR) via oxygen consumption calorimetry, the same as in the SBI. By taking advantage of the results, we can produce the below outputs:

- S-FIGRA – scaled FIGRA ( Fire Growth RATE )
- S-THR – scaled THR (Total Heat Release)
- S-SMOGRA – scaled SMOGRA (SMOke GRowth RATE)
- S-TSP – scaled TSP (Total Smoke Production)

The results from the test will be supplied in a standard reporting format including results, graphs for the test subjects plus a graph of a known material for comparison.





## The apparatus

The Mini-SBI apparatus is basically a geometrically down-scaled version of the Single Burning Item test (EN13823) which is the predominate fire test for product material classification in Europe.

## Samples

The samples for the Mini-SBI are geometrically scaled by a factor of 6.25 from the original SBI, and symmetrical on both sides. Sample sizes are 200mm (wide) X 600mm (high) with a maximum thickness of 50 mm\*. Two boards are required to assemble the corner configuration as shown in Figure 3.

*\*Depends on specific sample*



### Further analysis and reporting in relation to Mini-SBI testing

After completing the test schedule, we can offer further analysis and reporting. This is on top of the general outputs achieved and takes additional steps to examine how the tested samples correlate with SBI performance. Here are some examples:

- **SBI class prediction:** a prediction of what the SBI classification will be for a given sample/set of samples. This is an additional DBI service, as it requires further work on examining the relationships between a given sample in the Mini-SBI and the SBI, and comparison with the DBI material database.
- **Comparative analysis:** an analysis of a set of samples that ranks these samples in order of performance.

### Product development services

DBI also offers advanced product development services and can support customers as early as the idea or design phase, where key decisions are often made. This expert knowledge can provide optimal consultancy, ensuring that even complex projects are successfully completed, with optimal performance and short time-to-market.

### How can we help you?

Do not hesitate to send us an email at [firetest@dbigroup.dk](mailto:firetest@dbigroup.dk) or give us a call at **+45 25 44 26 06**

- and we will make sure to connect you with the right expert at DBI, who can assist you.

### About DBI

At DBI – the Danish Institute of Fire and Security Technology – we are dedicated to supporting innovation and growth by continuously developing new technological knowledge. We offer a wide range of services within fire prevention, consultancy, fire investigation, security, as well as courses and training – all aimed at helping our customers achieve the best safety solutions. Our 3,000-square-meter headquarters, located just 20 minutes from Copenhagen Airport, houses an advanced fire laboratory with various furnaces for all types of fire testing. We work globally, and our fire test reports are recognized worldwide.

At DBI, we work to secure lives and assets. Visit our website for more information: [dbigroup.dk](http://dbigroup.dk)

