

LIGNOLOC® AS A REINFORCEMENT FOR CLT FOR BETTER FIRE RESISTANCE

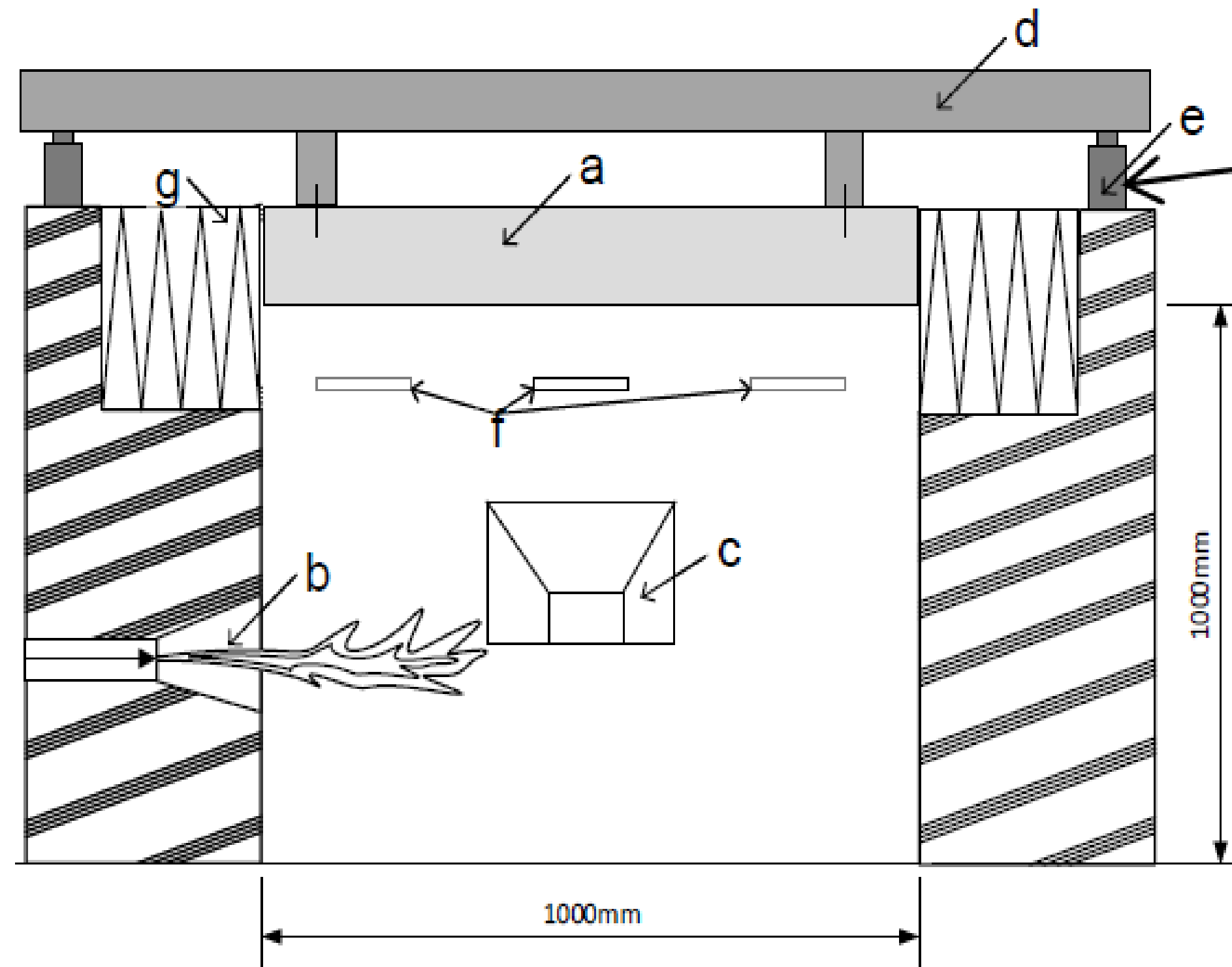
FIRE RESISTANCE TEST



Three unloaded CLT panels were exposed to a standard fire test in fall 2018 in Zurich/Switzerland.

FIRE RESISTANCE TEST

The goal was to investigate if the fire performance regarding mass loss and charring behavior could be improved.



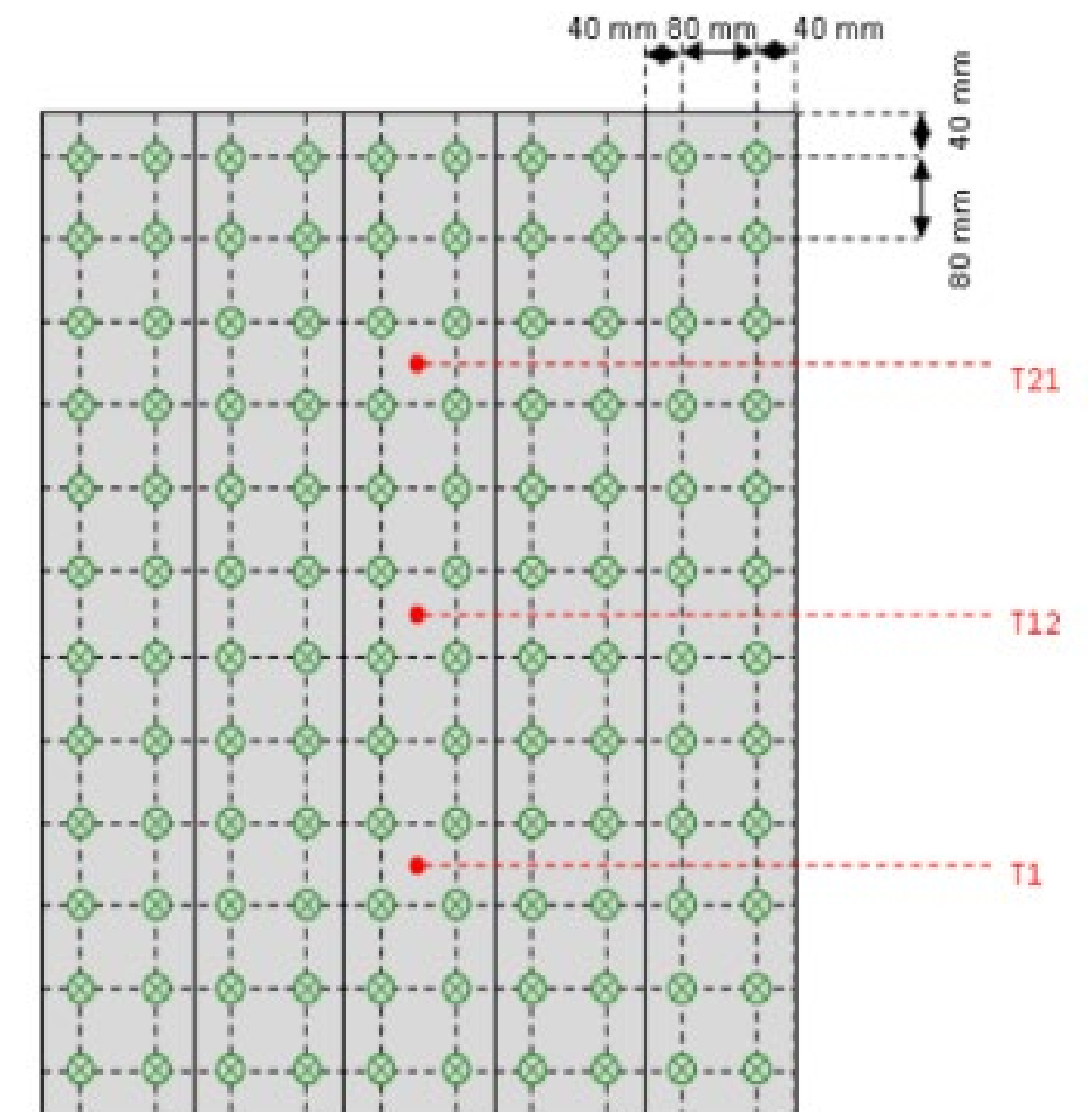
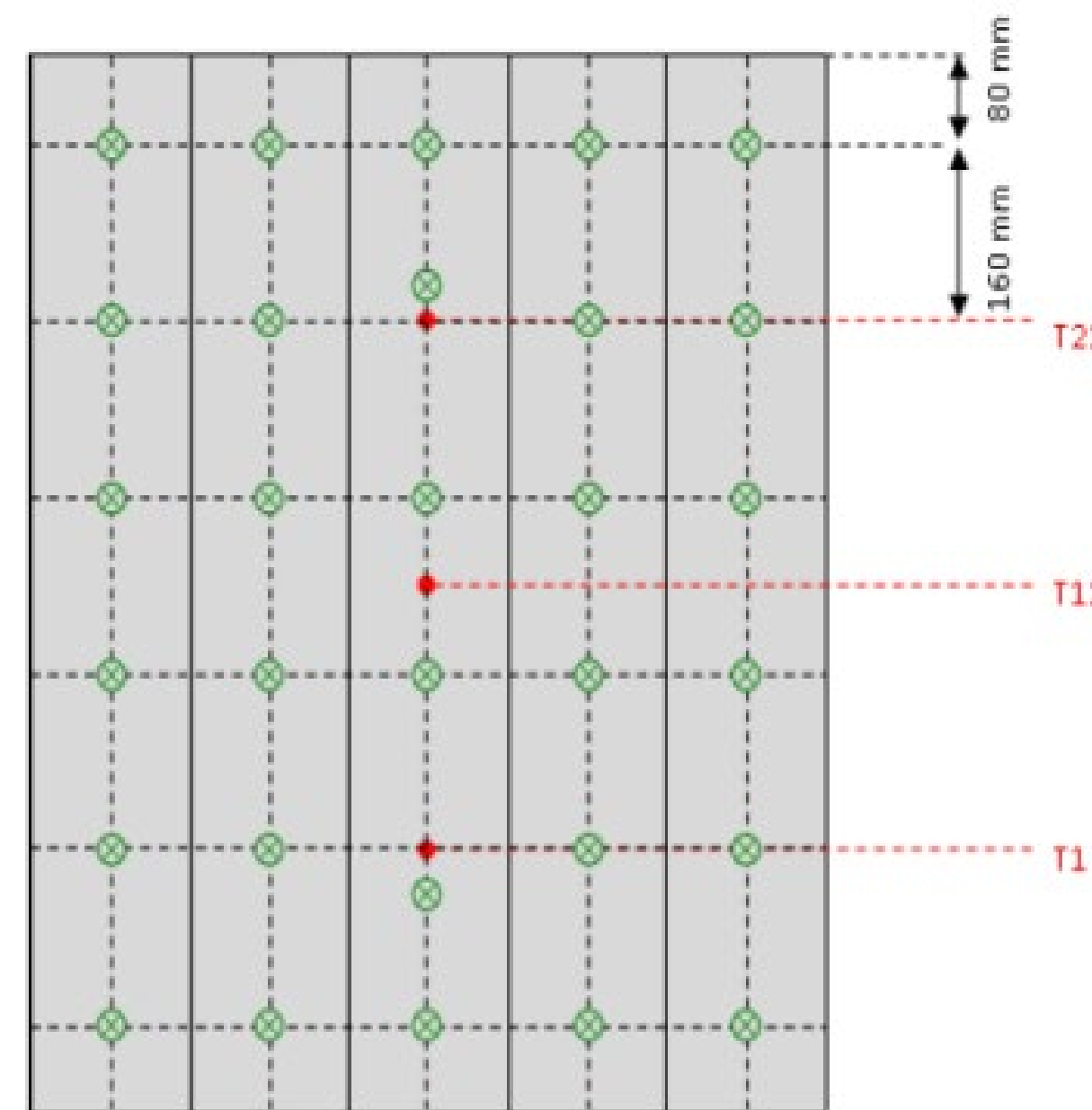
The specimen consisted of 7 layers of 1" and a flat dimension of 38" x 32".

FIRE RESISTANCE TEST

The reference sample was tested without LIGNOLOC®.

The second sample had 1 LIGNOLOC® in each board crossing, the third had 4 LIGNOLOC® in each board crossing.

3 thermal elements were located between each layer and measured the temperature in real-time during the test.

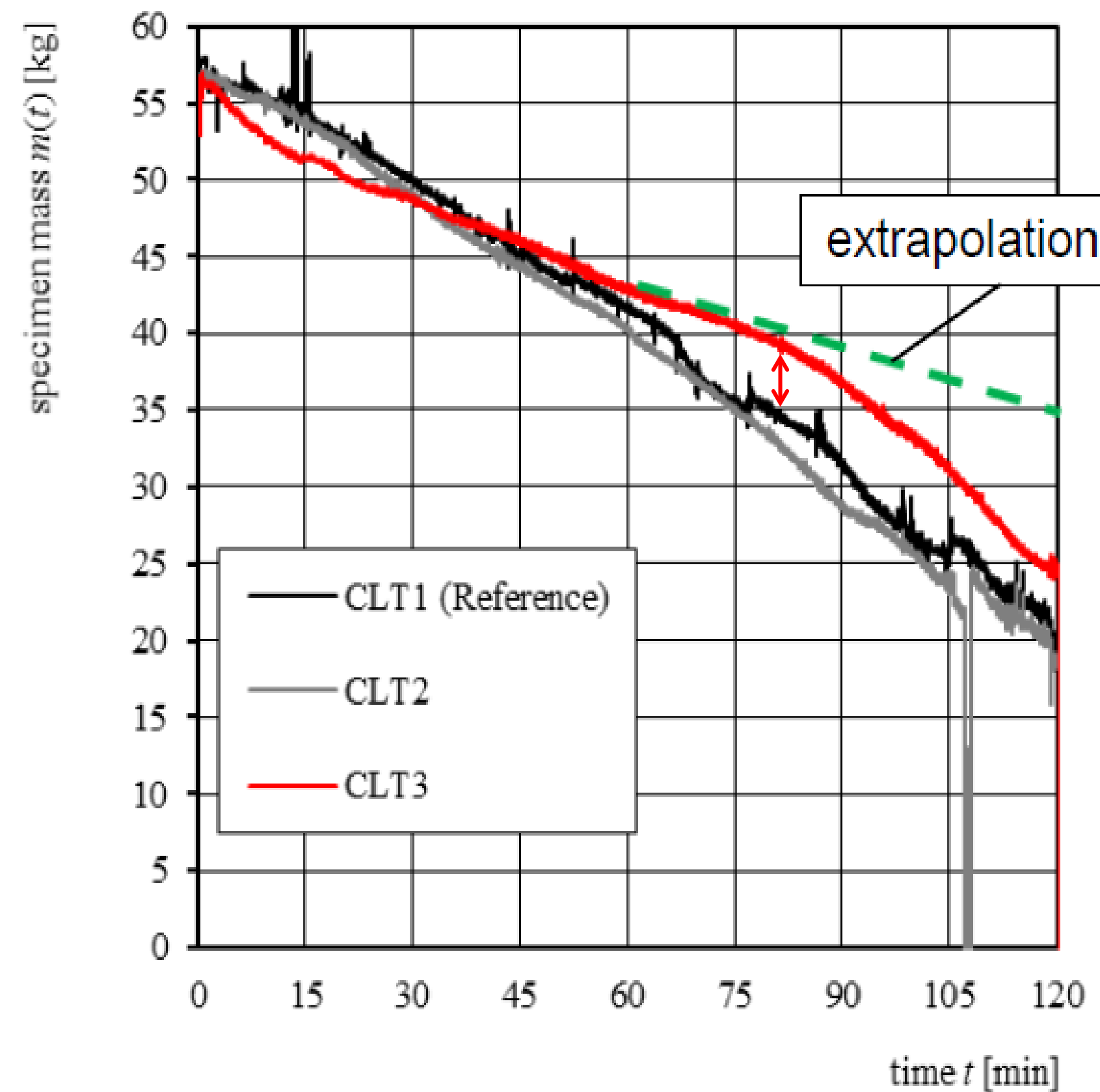


The exposure was over 120 minutes, the weight was measured directly during the test.

FIRE RESISTANCE TEST

One LIGNOLOC® nail does not have an impact on the mass loss. Four nails make a big difference!! Up to 80 minutes, the red curve follows exactly the burning rate of solid timber!

The **extrapolated curve** equates the mass loss of solid timber.



DESCRIPTION OF THE CURVES

- Only glue
- 1 LIGNOLOC® fastener
- 4 LIGNOLOC® fasteners
- Solid timber