

COMMENTARY

WILEY

Response to the comments made by Vytenis Babrauskas on “the curious case of the second/end peak in the heat release rate of wood: A cone calorimeter investigation”

Ellinor Sanned | Rhoda A. Mensah  | Michael Försth | Oisik Das 

Department of Civil, Environmental and Natural Resources Engineering, Luleå University of Technology, Luleå, Sweden

CorrespondenceOisik Das, Department of Civil, Environmental and Natural Resources Engineering, Luleå University of Technology, Laboratorievägen 14, 971 87 Luleå, Sweden.
Email: oisik.das@ltu.se, odas566@aucklanduni.ac.nz

We highly appreciate the comments by Vytenis Babrauskas on our recently published article entitled, “The curious case of the second/end peak in the heat release rate of wood: A cone calorimeter investigation” by Sanned et al.

We agree with Vytenis Babrauskas regarding the multiple processes involved in the thermal degradation of wood. However, these processes are quite universal when wood burns, and the focus of our article was how the back-face material affects the timing and intensity of the end peak of the heat release in a cone calorimeter. To the awareness of the authors, until now, there has been no study that systematically elucidated the effect of the substrate of the wood-specimen on the end peak in a cone calorimeter. In particular, we have revealed, through experiments, that the thermal boundary condition on the rear side of the wood specimen is critical for the amplitude of the end peak of heat release. In addition, we also observed that the thickness of the specimen affected the time for the occurrence of the end peak.

We do acknowledge that other effects, such as char cracking and time-dependent heat of combustion, may influence the end peak, but our main message is that the thermal boundary conditions and the

thickness of the tested specimen are very important for both the amplitude and time of occurrence of the end peak of heat release in a cone calorimeter.

In the future, it would be interesting to investigate a material where most of the heat release occurs due to just one reaction.

ORCIDRhoda A. Mensah  <https://orcid.org/0000-0003-4720-5380>Oisik Das  <https://orcid.org/0000-0002-5474-1512>

How to cite this article: Sanned E, Mensah RA, Försth M, Das O. Response to the comments made by Vytenis Babrauskas on “the curious case of the second/end peak in the heat release rate of wood: A cone calorimeter investigation”. *Fire and Materials*. 2023;47(5):735. doi:10.1002/fam.3149