

## Cite this article

Perrot A (2020)

Editorial.

*Proceedings of the Institution of Civil Engineers – Construction Materials* **173**(6): 269,  
<https://doi.org/10.1680/jcoma.2020.173.6.269>

## Editorial

ICE Publishing: All rights reserved

# Editorial

**Arnaud Perrot** PhD

University Bretagne Sud, Lorient, France

We are pleased to present you this new issue of *Construction Materials*. It seems that our life and habits are still altered by the Covid-19 pandemic and that this situation may continue for another few months. The Covid-19 crisis and increasing evidence of global warming urge us to change our way of living, and that includes the way we build buildings and structures.

Sustainability seems to have become the leitmotif of international research on construction materials, and newly developed materials and processes aim to decrease the consumption of resources, embodied carbon dioxide and, more generally, our environmental footprint. The three articles in this issue reflect this mindset of our time and deal with material durability and use of recycled materials. The optimisation of the life period of materials and the recycling after their first life are definitively solutions that can help to reduce our impacts on the environment.

In the first paper of the issue, Hansen and Howard (2020) investigate how aggregates, binder and environmental effects interact by testing the asphalt mixture before and after field ageing. They clearly show that aggregates have an impact on the ageing and durability of pavement materials and that ageing magnified initial differences in behaviour. This paper convincingly supports a literature review that has documented aggregates' influence in response to environmental effects such as ageing for many years. When combined with the literature reviewed, the data collected should help ongoing discussions within the asphalt industry related to mixture testing and how to capture environmental effects/ageing. The authors show that it is very important to develop realistic ageing models for pavement materials in order to describe their service life performances.

The paper by Aghapour and Babagoli (2020) demonstrates that recycled materials such as crumb rubber and reclaimed asphalt pavement can be advantageously added to asphalt mixtures while reducing their environmental footprint. The addition of reclaimed asphalt pavement increases the rut resistance but decreases the service life. This side-effect can be compensated by the simultaneous addition of crumb rubber. The authors conclude that it is possible to design pavement material with up to 50% of reclaimed materials without significantly altering its performance.

The last paper of this issue, written by Alaswad *et al.* (2020) deals with the moisture movement within concrete in hot arid

and semi-arid conditions and its impact on the durability of the materials that can be considered as the cover zone of the structure which governs the long-term performance of the concrete. Monitoring the moisture movement within the concrete using gravimetric and electrical conductivity measurements, the authors were able to describe the sorptivity of the concrete and estimate the water uptake. These measurements make it possible to evaluate the zone of influence of wetting/drying action (i.e. the convective zone), allowing a better prediction of the durability and long-term performance of the concrete.

This year has seen great disruption to normal life and work due to the Covid-19 pandemic. In April, delivery of printed copies of the journal was halted due to reduced Airmail and delays at Customs. Readers can be reassured that purchased 2020 printed journal issues will be posted to them before Christmas. In January, we will see another change as the journal moves to solely online-only format. PDF is now the most common format in which to read the journal, reflecting the preference of institutional libraries and the desktop convenience for readers of finding, receiving and sharing articles in PDF. We expect this trend to continue, with fewer subscribers opting to pay extra for issues to be printed and posted to them. If you are one of our readers who does like to receive a hard copy, these will be available to purchase on a per issue and per volume basis. Prices will be announced in the New Year. Readers who require a printed copy for accessibility reasons should contact [journals@ice.org.uk](mailto:journals@ice.org.uk).

We hope you enjoy reading this issue of *Construction Materials*. Stay safe and healthy.

## REFERENCES

- Aghapour M and Babagoli R (2020) Effect of reclaimed asphalt pavement on performance of rubberised asphalt mixtures. *Proceedings of the Institution of Civil Engineers – Construction Materials* **173**(6): 284–297, <https://doi.org/10.1680/jcoma.18.00040>.
- Alaswad G, McCarter WJ and Suryanto B (2020) Moisture movement within concrete exposed to simulated hot arid/semi-arid conditions. *Proceedings of the Institution of Civil Engineers – Construction Materials* **173**(6): 298–312, <https://doi.org/10.1680/jcoma.18.00012>.
- Hansen BS and Howard IL (2020) Measuring aggregate and binder interaction by way of mixture tests before and after field ageing. *Proceedings of the Institution of Civil Engineers – Construction Materials* **173**(6): 270–283, <https://doi.org/10.1680/jcoma.17.00070>.