

CLEANING UP IN A CLEANER WORLD

Since the launch of the updated PAS 2080 standard for carbon management in infrastructure in April 2023, PYE Management has supported numerous highway companies through the process, many receiving full marks (no non-conformances). Founder and director Emma Pye writes

PAS 2080 is a standard for managing carbon in buildings and infrastructure, aiming to reduce emissions through whole-life carbon management and collaborative working across the value chain.

In 2021, National Highways issued its *Net zero highways* plan, which included key objectives for the national roads operator to reach net zero for its own operations by 2030, for its value chain (maintenance

and construction) to reach net zero by 2040 and for all road users to be net zero by 2050. As part of this, National Highways will soon be asking contractors and their subcontractors to implement their own PAS 2080 verified carbon management or work to the principals of the standard.

The key principles of PAS 2080

PAS 2080's structured approach includes emissions from the design and construction phase, as well as the operational and end-of-life phases.

By aligning with PAS 2080, organisations can:

- join the transition to a net zero carbon economy by 2050
- encourage wider uptake of carbon management
- promote close collaboration
- influence decision-making
- emphasise the importance of whole-life carbon reduction
- take into account whole-life carbon and circular economy principles.

What about my existing management system?

A lot of companies have existing systems around ISO 9001: Quality Management System, ISO 14001: Environmental Management System and ISO 45001 Health and Safety. PAS 2080 complements these systems and some of the 'system' elements you may have established will be beneficial for PAS 2080.

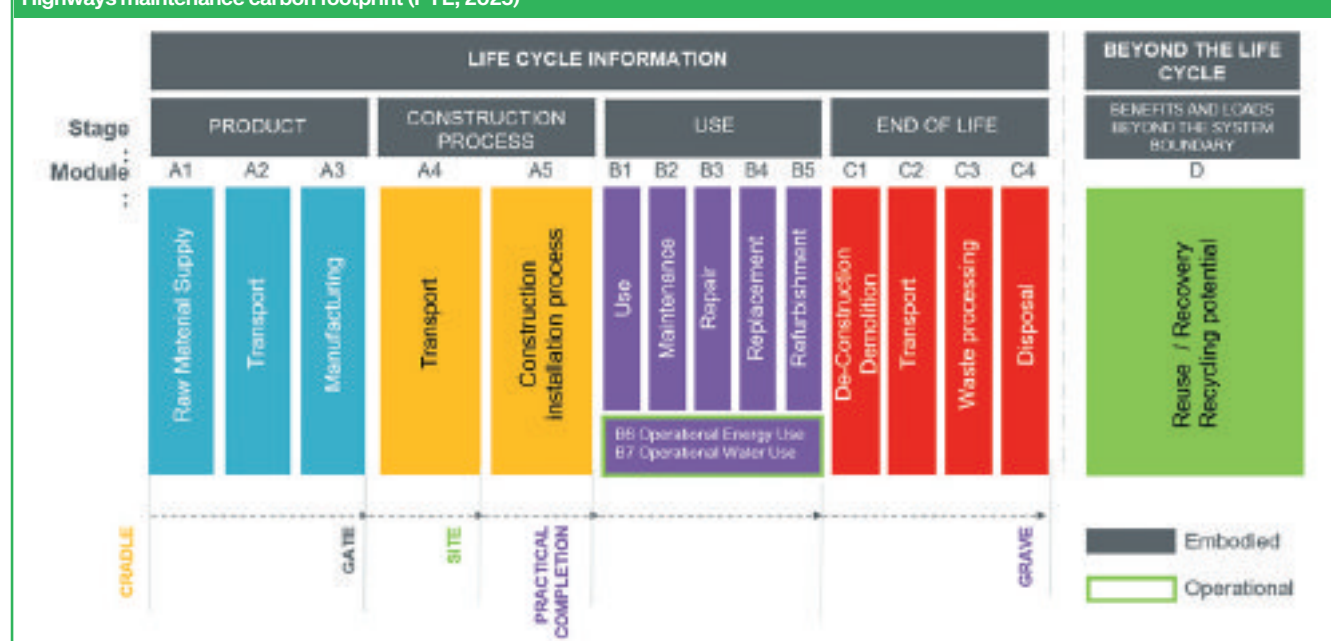
It is important to carry out a gap analysis against any current management systems to determine how PAS 2080 can be incorporated. This prevents the need for lots of new elements and ensures the system is seen as 'business as usual'.

PAS 2080 is all about collaboration. It puts an emphasis on sharing data and information to look at the lowest carbon approaches. As a result, the process helps ensure all parts of the value chain can

Aligning highways maintenance to BS EN 15804 (Table 1)

B1	Use	N/A
B2	Maintenance	Programmed maintenance ie surface treatments (preservation, surface dressing)
B3	Repair	Reactive maintenance ie pothole filling
B4	Replacement	Programmed maintenance ie resurfacing
B5	Refurbishment	Programmed maintenance ie reconstruction

Highways maintenance carbon footprint (PYE, 2025)



contribute and bring innovation to the table.

What part of the lifecycle assessment are auditors looking for in highways?

Auditors are looking for calculations in accordance with BS EN 15804 on the sustainability of construction works. However, BS EN 15804 does not comment specifically about linear infrastructure and does not give definitions of where highway maintenance should sit within the standard.

If we aligned highways maintenance definitions to BS EN 15804, the maintenance activities fit within the B categories as shown in table 1 (opposite page).

Using the alignment in table 1 and the boundaries definitions from BS EN 15804 to ensure a highway maintenance carbon footprint meets the requirements of the BS EN 17472 and BS EN 15804 standards, the following lifecycle stages have to be included in the carbon footprint, as illustrated in table 2 (below).

- Deconstruction – Emissions associated with the deconstruction of current materials i.e. C1 (End of life) of the materials currently in place i.e. any waste asphalt
- Transport to waste processing of previous waste i.e. C2
- Waste processing i.e. C3
- Disposal of waste (if applicable) i.e. C4
- A1-A3 (Product) of the materials required for installation
- A4 (Transport) for the transportation of the material and plant
- A5 (Construction) for the installation.

Although not a specific requirement of the standard, it is essential that you show that you are monitoring your own business's carbon footprint. For a start, a carbon footprint needs to follow the principles of the Greenhouse Gas Protocol (GHG) Protocol. A baseline

year would need to be established and, alongside this, your business also needs to present a carbon reduction plan.

How does third party verification work?

The majority of third party verification bodies carry out the assessments in two stages. Both stages are normally completed remotely.

Stage 1 is a check to ensure that policies, processes and procedures have been written in accordance with PAS 2080, to ensure that systems are ready to capture whole-life carbon data for stage 2.

Stage 2 is a final check to ensure that the policies, processes and procedures have been fully implemented; that training has been carried out and that data can be presented for a number of projects. The information presented needs to cover completed projects, capturing lessons learnt and key continual improvement elements.

Most verification bodies ask for at least six weeks between stages 1 and 2, to ensure there is sufficient time to embed any changes suggested or identified through non-conformances from stage 1.

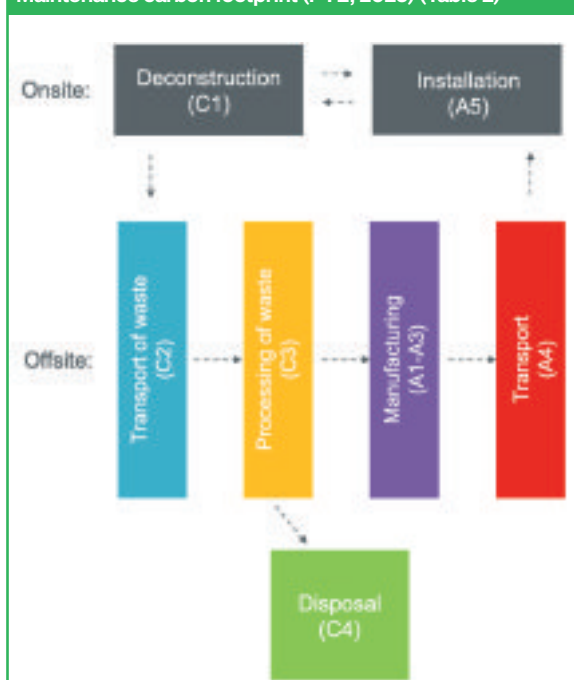
After the audit, what next?

As with most standards, PAS 2080 is all about driving improvement.

One way to help with this ongoing improvement is to integrate PAS 2080 into an existing management system. This means that any management review can be expanded to look at PAS 2080 and the outputs.

It is crucial that the carbon footprint, the comparison of the footprint against a baseline and previous years, and the project carbon assessments are all reviewed. It is also important to discuss the availability of data, training and resource needs.

Maintenance carbon footprint (PYE, 2025) (Table 2)



PYE diagram

