

# Pandrol Under Ballast Mat

## EPD Summary Report



Pandrol is proud to be the first manufacturer in the field to be assessed and certified to EPD criteria in recognition of the impressively low carbon footprint of our sustainable resilient systems. Like all our products, these reflect Pandrol's commitment to reducing the environmental impact of railway infrastructure.

Pandrol Under Ballast Mats (UBMs) can reduce life cycle cost of the railway and/or vibration attenuation for ballasted track. Easy to install, maintenance free and compatible with all types of track design, they aim to reduce the lifecycle costs of the railway.



### High performance

Noise and vibration attenuation are achieved while reducing the CO<sub>2</sub> impact of railway infrastructure construction.

### Easy to install

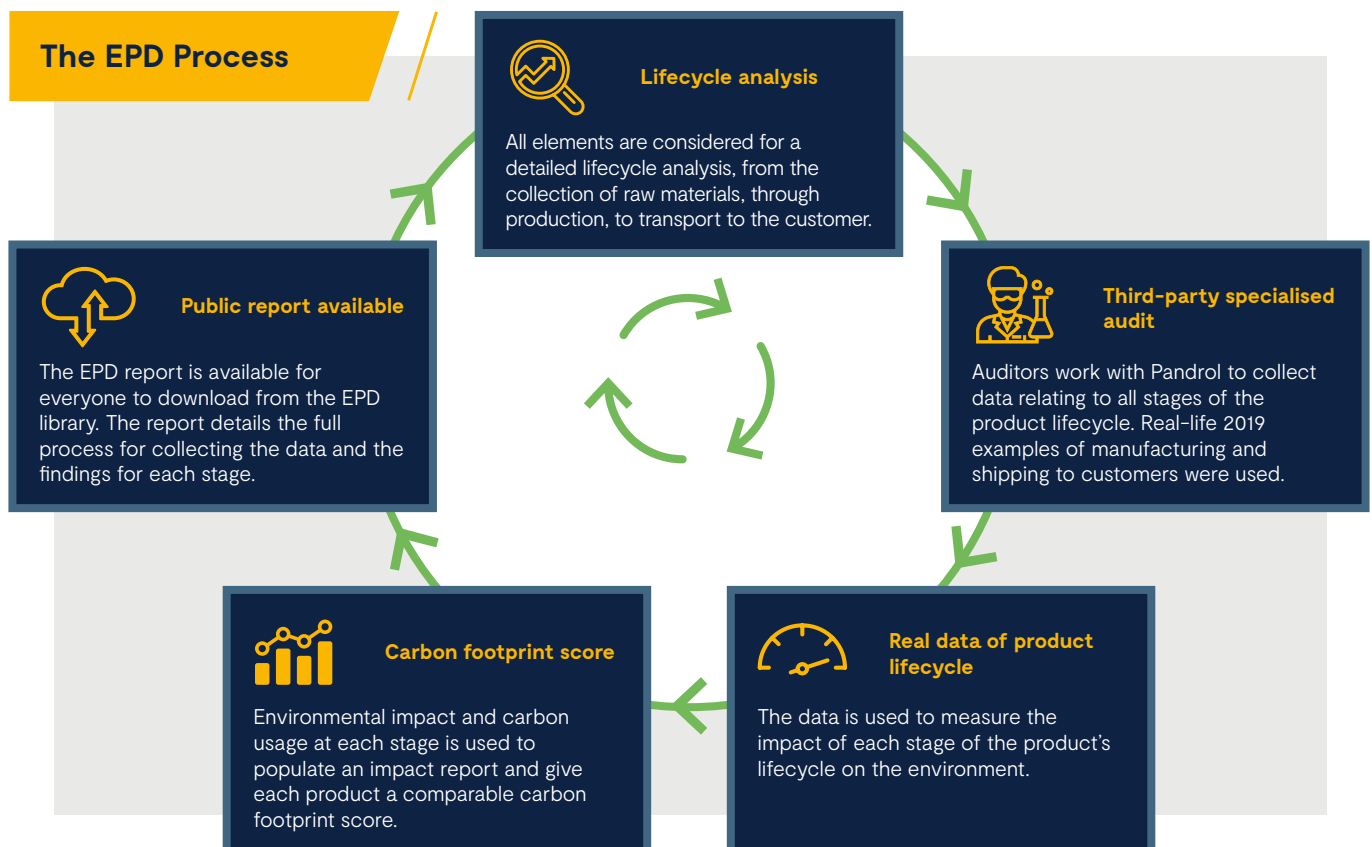
Fast and easy to install, the Pandrol UBM is a maintenance-free system designed to last the lifetime of the ballast.

### Eco-friendly

All Pandrol sustainable resilient systems are made from recycled material and are 100% recyclable.

## What is an Environmental Product Declaration?

Internationally accepted, an Environmental Product Declaration (EPD) is a transparent, third-party audited comparison tool that uses scientific parameters to measure a business' or product's environmental impact. Independently verified and used across all sectors, the EPD process supports increased understanding of environmental impact throughout the supply chain and provides businesses with a benchmark for continuous improvement.



## Pandrol Under Ballast Mat EPD results

Example below is for UBM-H35-C. Pandrol can provide specific value for each system and project needs.

### Acid Rain mitigation

Gases such as sulphur dioxide (SO<sub>2</sub>) react with water in the atmosphere to form acid deposition in a process known as 'acid rain'. Acidification Potential (AP) measures a product's impact on acid rain.

Pandrol UBM results show there is only 0.2% SO<sub>2</sub> eq per kg of product. This means by choosing Pandrol UBM as a sustainable alternative, less acid rain will fall.



**Pandrol UBM: 0.025 kg SO<sub>2</sub> eq / m<sup>2</sup>**

### Ozone depletion

Ozone-depleting gases cause damage to the ozone layer. CFCs, halons and HCFCs are the major causes of ozone depletion. Ozone Depletion Potential (ODP) measures how many of these harmful chemicals are emitted during a product's lifecycle.

Pandrol UBM results show nearly no ODP (less than 1 mg/m<sup>2</sup> to be accurate!). This means that choosing Pandrol UBM as a sustainable alternative has no impact on ozone layer depletion.



**Pandrol UBM: 0.0000007 kg CFC 11 eq / m<sup>2</sup>**

### Global warming reduction

Human activity releases greenhouse gases into the atmosphere, causing changes to the global temperature and resulting in changes to the Earth's climate. Measuring Global Warming Potential (GWP) quantifies a product's impact on climate change.

Pandrol UBM results show a minimal impact on global warming.



**Pandrol UBM: 12.0 kg CO<sub>2</sub> eq / m<sup>2</sup>**

### Water pollution

Water pollution can lead to the death of aquatic plants and animals and leaching of fertilisers into the water table leads to eutrophication. Eutrophication Potential (EP) measures the impact a product has on water quality and animal populations.

Pandrol UBM results show limited impact on water quality. By choosing Pandrol UBM as a sustainable alternative, quality of aquatic life improves.



**Pandrol UBM: 0.004 kg PO<sub>4</sub><sup>3-</sup> eq / m<sup>2</sup>**

## Pandrol Under Ballast Mat key facts



Every kilometer of railway track installed with Pandrol UBM saves **15,000** tyres from landfill or burning.



Pandrol saves **190 tonnes** of CO<sub>2</sub> per km of railway track installed compared to industry average microcellular polyurethane. To give an idea of how much CO<sub>2</sub> this is, it's the equivalent of an average passenger vehicle driving **1.6 million km** or, **39 times** around the globe!

## Footprint comparison

According to the United Nations Environment Programme, the building sector contributes nearly 40% of global green house gas emissions.

Pandrol UBM is the lowest carbon footprint available on the market versus competitors.

