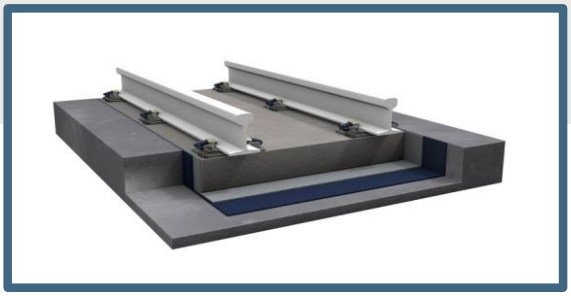
# Pandrol Floating Slab Mat

## EPD Summary Report

Pandrol's commitment to reducing the environmental impact of global railway infrastructure is being captured within its Sustainable Resilient Systems (SRS) product range, featuring systems composed of Pandrol's Recycled Rubber material. Leading the way, Pandrol is proud to be the first manufacturer in the field to have assessed its systems by an Environmental Product Declaration (EPD), which highlights their lower carbon footprint in comparison to alternative products based on Polyurethane foams.

Pandrol Floating Slab Mat (FSM) is a high-performing vibration attenuation floating slab system that combines best-in-class technical performance with an extremely low carbon footprint.



**High performance**

Noise and vibration attenuation are achieved while reducing the carbon footprint of the railway infrastructure.

**Easy to install**

Fast and easy to install, the Pandrol FSM is a maintenance-free system designed to last the entire slab lifetime.

**Eco-friendly**

All Pandrol Sustainable Resilient Systems (SRS) 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 assessment tool, determining numerous parameters to quantify a product's environmental impact. The EPD process is not limited to the product itself, but instead considers the entire value chain, from the raw materials, their transport to the manufacturing site, the manufacturing process itself, then final delivery. Therefore, it provides a comprehensive environmental status of the product, offering insight into even further improvement actions where necessary.

## The EPD Process

**Lifecycle analysis**

All elements are considered for a lifecycle analysis, from the generation of the raw materials, their transport, their transformation into a product and the delivery to the customer.

**Third-party specialised auditors**

Pandrol is working with specialised auditors in particular to cover the data collection related to all steps of the life cycle.

**Real data from the lifecycle of the product**

Data from real production and shipment examples have been considered to determine the impact of every lifecycle step of the product towards its environment.

**Carbon footprint**

The environmental impact is quantified through numerous parameters such as the carbon footprint. It allows comparing with other products assessed the same way.

**Public report available online**

The EPD report is freely available online. It details the scope of the study and the indicators obtained for each step.

## Pandrol Floating Slab Mat EPD results

The example below is for FSM-L13. Pandrol can provide specific values for each system and project needs.

### Acid rain

Sulphur dioxide ($SO_2$), reacts with water in the atmosphere to form sulfuric acid. The latter reaches the ground with precipitation, a phenomenon known as ”acid rain”.

The Acidification Potential (AP) quantifies the equivalent contribution of the product into $SO_2$ per installed m².

**Pandrol FSM: 0.027 kg $SO_2$ eq / m²**

### Ozone depletion

Some gases, such as CFCs, halons and HCFCs damage the stratospheric ozone layer protecting the planet from the dangerous UV rays emitted from the Sun.

The Ozone Depletion Potential (ODP) quantifies the equivalent contribution of the product into CFC 11 per installed m².

**Pandrol FSM: 0.000000002 kg CFC 11 eq / m²**

### Global warming

Human activities release greenhouse gases into the atmosphere, triggering global warming and climate change.

The Global Warming Potential (GWP), also known as ”carbon footprint”, quantifies the equivalent contribution of the product into $CO_2$ per installed m².

**Pandrol FSM: 15.6 kg $CO_2$ eq / m²**

### Water pollution

Soils leaching by precipitation can bring fertilisers into the watercourse. This accumulation of nutrients, called “eutrophication”, allows for excessive algal growth that consumes oxygen, which asphyxiates aquatic wildlife.

The Eutrophication Potential (EP) quantifies the equivalent contribution of the product into $PO_4^{3-}$ per installed m².

**Pandrol FSM: 0.005 kg $PO_4^{3-}$ eq / m²**

## Key facts

**Every kilometre of railway track installed with Pandrol FSM saves 24,000 tyres from landfill or burning.**

**The use of Pandrol FSM avoids the emission of 160 tons of $CO_2$ per km of installed railway track compared to the use of microcellular Polyurethane. To give an idea of how much $CO_2$ this represents, these are the equivalent emissions of an average passenger vehicle driving 1.3 million km or, 33 times around the globe!**

## Carbon footprint comparison

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

**Pandrol FSM has the lowest carbon footprint available on the market.**