



# Under Ballast Mat

Sustainable Resilient Systems

## Adding Value

Across all ballasted track scenarios. Designed to give dependable performance in vibration reduction, constructed from high-quality materials and resistant to prevailing conditions.



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.

UBMs operate on the mass-spring principle. The ballasted track (the mass) is elastically supported by a continuous resilient mat (the spring). The elastic properties of the mat solution are defined by track and train design, mat material, system thickness, number of resilient layers and determined shape factor.

Pandrol UBMs are made from high-quality resin-bonded rubbers. Depending on the location, the design parameters can be adjusted to achieve a vibration attenuation up to 25 dBv with a low resonance frequency and can also be tuned to ensure attenuation across the most critical frequencies.

## → TECHNICAL FEATURES

### Designed for fast and simple installation

Under Ballast Mats are supplied in rolls. These are easy to install in single or double layers, plus the addition of a bottom stabilisation layer if required. The systems do not have closing joints between these layers, further simplifying installation.

### Extended lifespan

Designed to last, Pandrol UBMs have tested and proven long-term stable properties and continued performance. They are highly resistant to changing atmospheric conditions, chemical exposure and mechanical fatigue.

### Water permeability

Pandrol UBM solutions UBMs are fully water permeable in both the vertical and horizontal planes, meaning that drainage characteristics of the track are unaffected when the mats are installed.

### Vibration isolation

Available in a wide range of stiffnesses, Pandrol UBMs provide a tuneable approach to vibration isolation that can be modified to meet exact requirements. A resonance frequency as low as 14 Hz can be achieved.

### Geotextile protection layer

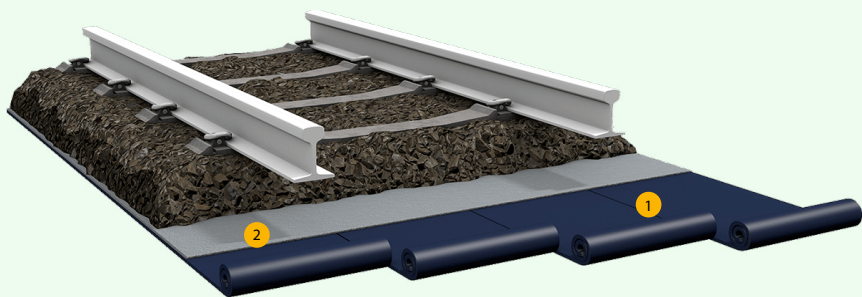
A non-woven geotextile protection layer is used to protect mats against ballast stone penetration. In addition, the geotextile protects joints between the mats and acts as a filter for small particulates while retaining water permeability.

### Sustainability

Pandrol Under Ballast Mat Solutions are made from 90% recycled materials and are 100% recyclable.

→ ADVANTAGES /

- Rapid, simple installation saves time and labour costs.
- Hardwearing and maintenance free, Pandrol UBM Solutions maintain cost-effectiveness throughout the lifecycle.
- Compatibility with all types of ballasted track systems means that Pandrol UBM Solutions have a wide range of applications.
- Pandrol UBM Solutions are available in a wide range of stiffnesses and provide flexible vibration isolation that can be modified to meet particular requirements.
- Pandrol UBM Solutions have a low environmental impact and increase the sustainability of the track.



→ COMPONENTS /

1. Horizontal resilient element  
- in one or more layers
2. Geotextile protection layer

→ SPECIFICATIONS /

Technical specifications	
Materials	Resin bonded rubber
Setup	Possible to install in single, double or double plus a bottom stabilisation layer
Thickness range	Single layer of elastomer: 10 to 30 mm Non-woven protection layer: 1.8 mm Total system thickness: 11.8 to 51.8 mm
Geometry	Flat or wavy
Density range	710 to 1000 kg/m <sup>3</sup>
Supply	Rolls
Joints	Not required

→ LEARN MORE

