



# Railroad track gauges

Most railroads have in common that they roll on two adjacent steel rails fixed to sleepers. Most railroads in Europe use a track gauge of 1435 mm, which is also known as standard gauge. In Switzerland, narrow gauge (also known as meter gauge or meter-gauge railroads) mainly refers to a track gauge of 1000mm.

### History

The first public railroad from Stockton to Darlington was equipped with a gauge of 4 feet and 8 inches. This corresponds to a track gauge of 1422mm. George Stephenson later built the railroad from Liverpool to Manchester. A slightly larger track clearance was chosen for the wheels, which resulted in a track widening of 0.5 inches. This made it possible to improve running smoothness and smoothness without having to change the wheels and thus the vehicles.

This dimension of 4 feet and 8.5 inches (=1435mm) was established in 1830. This track gauge became established as the standard gauge and is considered the standard gauge today. However, the origin of the 1435mm gauge lies even further in the past: it is said that the width of the standard gauge is derived from the original specification for Roman chariots. At 1435 mm, these were exactly wide enough for two army horses to run in them without any problems.

### Standard gauge, narrow gauge, broad gauge

many places, the terms standard gauge (1435mm), narrow gauge (1000mm) and broad gauge (wider than 1435mm, normally 1520mm) have become established.

### Track gauge and track width - Terms

The track gauge of railroads is normally given in millimetres. The track gauge is the distance between the track-guiding elements of the track. For railroads, this is normally the inner edges of the rail heads of a track. The track gauge of railroads

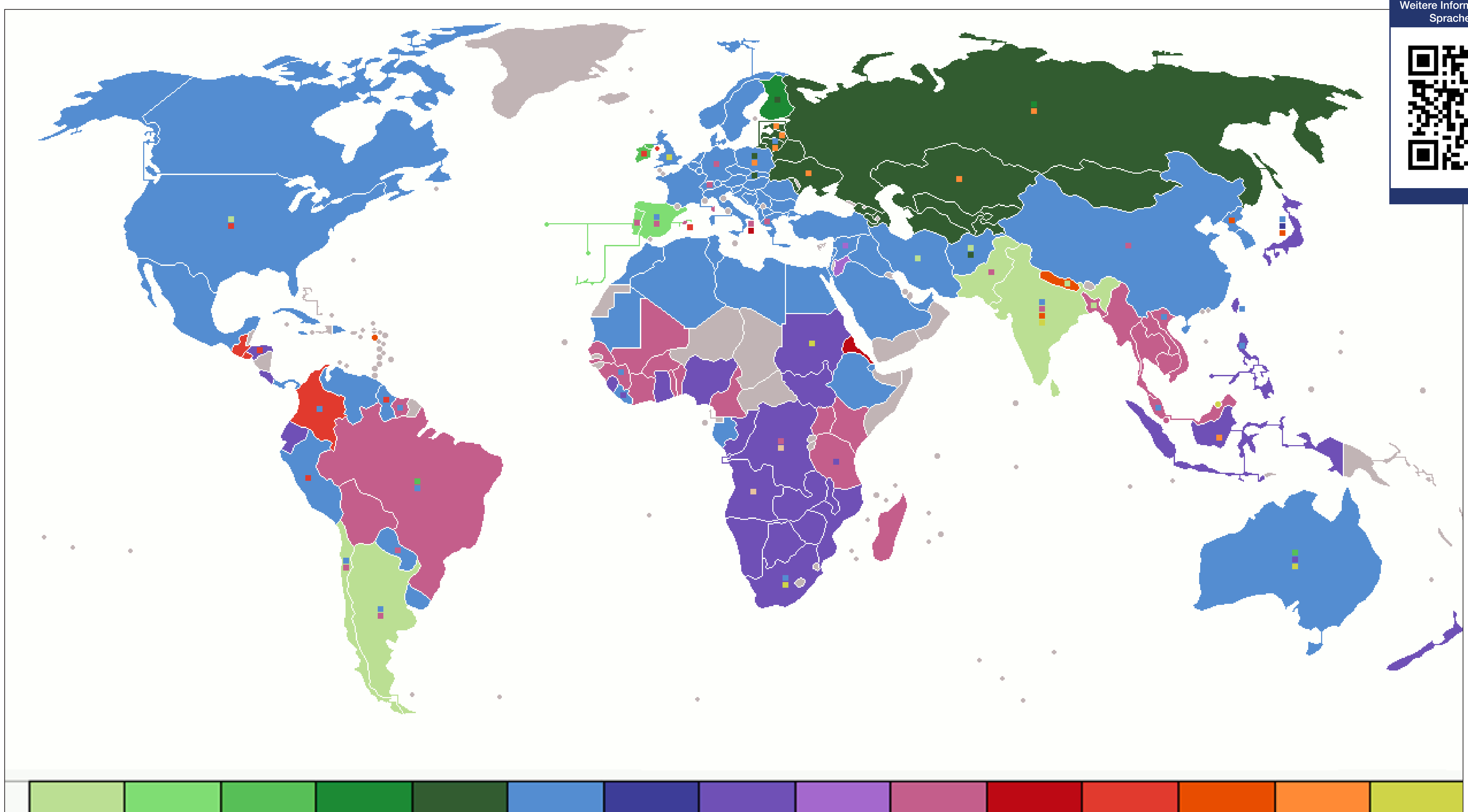
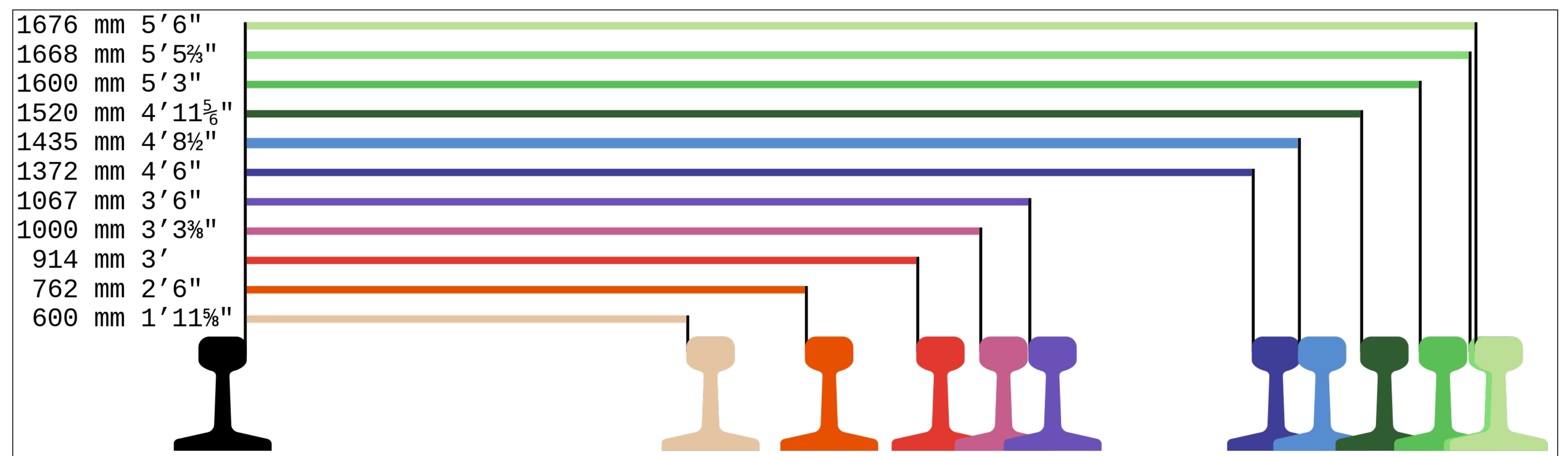
should not be confused with the track width. The term "track width" refers to an external dimension, whereas the track gauge is an internal dimension. In the case of rail vehicles, the track gauge is the gauge of the tracks for which the running gear is designed. The distance between the wheel flanges on the wheel is referred to as the track gauge, the required difference between the track gauge and the track width as the track play.

Many track gauges are based on English units. When transferring to the metric system, the units are rounded to whole millimeters, which can lead to slightly different track gauges.

### Why different track gauges?

The track gauge was often chosen by the railroad companies for reasons of topography and also for financial reasons. The costs for the construction of a narrow-gauge line are lower than those for a standard-gauge line. The smaller the gauge of a railroad line, the easier it is to adapt the track to the topography. This allows tighter curve radii to be built, which also avoids

the need for expensive engineering structures. On standard-gauge tracks, on the other hand, larger loads can be transported with fewer vehicles and at higher speeds. This makes operation more efficient. The larger track width also means that the profiles of the vehicles and the loads to be transported are larger. This makes standard-gauge railroads more interesting for freight transportation.



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