



Reducing weight in railway embankments has long been recognised as an effective way to address challenges associated with soft soils, settlement control and load-sensitive structures. Yet one key question remains:

Can a lightweight embankment deliver the same long-term performance as a conventional railway solution?

The PEDLER project (Performance and Durability of Leca Lightweight Aggregate (LWA) in Railway Embankments) was designed to answer exactly that.

Developed within the European GEOLAB programme and tested at the renowned CEDEX Track Box facility in Spain, PEDLER provides one of the most comprehensive experimental investigations ever conducted on the use of Leca LWA in railway embankments.

The project combined full-scale construction, advanced instrumentation and extensive testing under simulated passenger and freight traffic conditions to evaluate the structural behaviour, durability and long-term stability of a railway embankment built with Leca LWA.

FACTS

Material: [LECA LWA \(10-20mm\)](#)

Interesting Fact: The results showed that railway sections constructed with Leca LWA achieved stiffness, critical speed, sleeper velocity and acceleration values comparable to those recorded in conventional high-speed railway embankments .

Testing Facility: CEDEX Track Box