

# The First Real Double-Deck Train



Talgo 22

*Talgo*

# Two open and stepless decks through the entire train

## The First Real Double-Deck Train

### Designed for high capacity

Talgo 22 is the world's first real double-deck train. Its high-capacity design offers substantial and completely new benefits to operators and passengers.

### Maximised passenger compartments

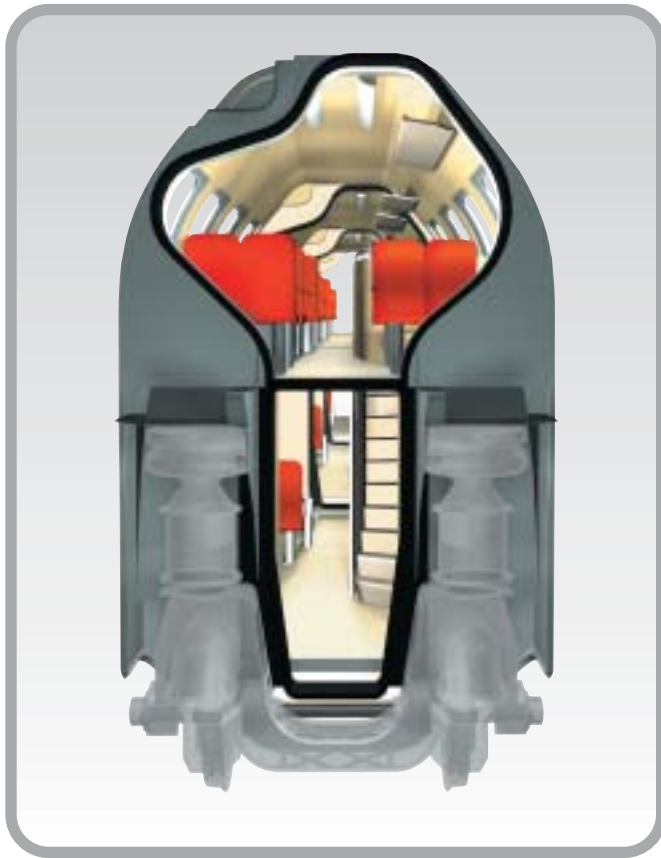
The design is based on the unique Talgo wheelset, which allows for two stepless decks going through the entire train. Both decks are open even through the gangways, which is impossible in every conventional double-deck

train. The short length of intermediate cars, 7.5–9.0 m, allows for wider car bodies. This combination results in maximised passenger compartments, comfort and ease of travelling.

### Family of products

Talgo 22 is a versatile platform of electrical multiple units. Available versions include trains for commuter, regional and intercity traffic. The train is modular-based and tailored to meet customer needs.





## The revolutionary double gangway

Talgo 22 has revolutionary double gangways between cars. There is an open and stepless connection between every car on both decks of the train. Passengers preferring to travel on the upper deck no longer need to walk stairs up and down in order to find an available seat. They can just take the nearest stairs up and see every vacant seat on the upper deck with a glance. Likewise, passengers on the lower deck don't run into any stairs while moving from one car to another in search of empty seats.



# Easy to enter, easy to find a seat

## Maximised efficiency

### Maximum platform utilisation

At many train stations, the length of platforms is critical. The high-capacity design of Talgo 22 allows for maximum passenger capacity per track metre, so larger numbers of passengers can be served with existing platforms.

### Efficient passenger flow

Due to the double gangway, the rush in vestibules is largely avoided because passengers entering the train can take the wide stairs of Talgo 22 up and choose a seat in any car of the train. Those remaining on the

lower deck do not need to take any stairs up or down when leaving the vestibule area and even when walking to another car. The ease of moving around coupled with the higher number of entrance doors speeds up the passenger exchange of Talgo 22 by approximately 35% compared to conventional trains.

### Good performance

In high-capacity double-deck design, all the heavy equipment resides directly above the driven axles. This allows for constant axle load and excellent acceleration regardless of passenger load.



# Based on proven solutions



*Talgo DoubleDeck Coach*



*Talgo XXI High-Speed Tilting Train*

Talgo 22 utilises tested existing solutions. The double-deck carbody construction, the Talgo wheelset and suspension, and the ELIN traction and control systems have been proven in numerous passenger rail vehicles over a span of several decades.

## LCC, maintainability and safety advantages

Passenger rail vehicles based on the Talgo wheelset have demonstrated excellent vehicle availability and optimised maintenance costs. The solution allows for light train construction, which results in reduced operation costs. Because the wheelset features individually mounted and steered wheels, the technology also offers safety and comfort benefits related to running behaviour.

Talgo also offers complete maintenance services at the operator's request.



*ELTAS - Elin Traction Automation System*



# Stepless, silent, open

## A new travelling experience

### Easy to move around

The stepless decks, double gangways and wide stairs between the lower and upper decks make it very easy to move inside the train.

### Completely open upper deck

The completely open upper deck of Talgo 22 adds to the safety of travelling because passengers can see the whole deck and freely move from one car to another.

### Safety through Talgo wheelset

Because of the individually mounted and steered wheels, there is no hunting movement in the Talgo wheelsets. The centre of gravity is low and the car structure can be made light but at the same time strong. The Talgo wheelset also allows for a quiet train interior and exterior.





*The open upper deck of Talgo 22 brings a completely new travelling experience for passengers.*



# Talgo 22

A versatile platform of passenger rail vehicles



## Technical data

Product family	commuter, regional, intercity
Height range	4,600–4,950 mm
Width range	2,850–3,300 mm
Train length range	$\geq 50$ m
Length of interm. cars	7.5–9.0 m
Seats	$\geq 240$
Seating arrangement	2+2, 2+3
Traction power	1.7–3.2 MW/AC/DC
Speed range	140–200 km/h

## Traction systems

Options by ELIN EBG Traction	15 kV / 25 kV / 3 kV / 1.5 kV
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