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Viaggio Comfort – emotion@rail

Intercity-Push/Pull Platform



Viaggio Comfort

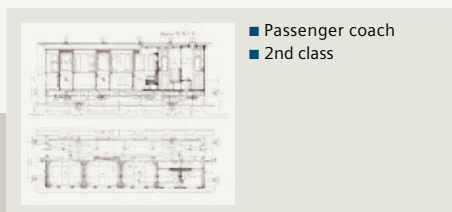
160 years of passenger coach experience



Siemens has been active in the passenger coach industry since 1852 and is one of the world's leading technology companies. Siemens' World Competence Center for manufacturing and developing passenger coaches is situated in the Vienna plant and the center for bogies is in Graz, Austria.

Siemens' many years of experience building railcars and developing bogies, as well as the use of proven components, support the company in overcoming future challenges and demands for quality with cost-effective, innovative, and sustainable solutions.

Demographic change, urbanization and climate change will shape our future society and present industry with global challenges. Experts estimate that 90 percent of future population growth will be concentrated in cities. Along with these developments, the need for individual mobility within and between cities will also grow.



- 310–320 km/h
- 270–300 km/h
- 250 km/h
- 200–230 km/h
- < 200 km/h
- under construction/updating

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High Speed Railroad Map Europe 2011
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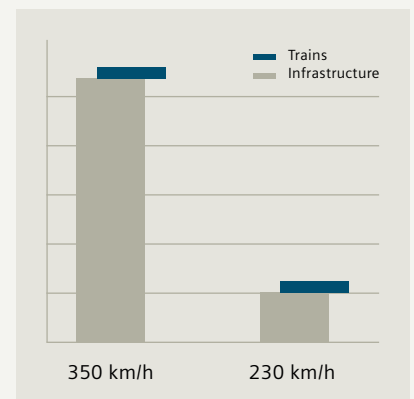
Intercity traffic of the future

The importance of using high-speed trains with maximum riding comfort continues to grow. Comfort, flexibility and speed are the basic requirements for the passenger train of the future.

Currently, the European rail network has only a small operating area for trains travelling faster than 250 km/h. Reasons for this include the high outlay for infrastructure, the cost of track and vehicle maintenance and the interfacing of intercity and regional routes.

Consequently, operating speeds from 200 to 230 km/h provide the best price-performance ratio.

In addition, passenger trains of the future require a high degree of comfort, multi-system capability that includes all existing power and train protection systems, tremendous flexibility, low maintenance costs, and reliability in operation.



High-speed traffic
Cost per track kilometer



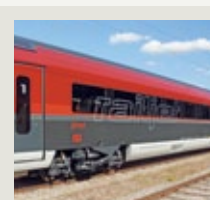
- IC modular passenger coach ÖBB
- Double-deck car GKB
- RIC modular passenger coach OZE (GR)

1989 to 1998
First modular IC coach



- Double-deck passenger coach Viaggio Twin ÖBB
- RIC passenger coach CD (CZ)
- Double-deck multiple unit DTZ SBB

1998 to 2006
Comfort sleeping coach



- Premium passenger coach Viaggio Comfort – ÖBB Railjet
- Double-deck car Viaggio Twin NDW SBB
- Comfort sleeping car Viaggio Classic RZD

2008
Viaggio product family



Viaggio Comfort

The multi-talent combines comfort and efficiency



Comfort and design

The flexible interior offers comfort at the highest level. Closed, extra-wide, pressure-sealed gangways between cars add to the pleasant and relaxing ambience. Comfortably wide entrance doors facilitate entry and exit.

Thanks to the Viaggio Comfort's ultra-quiet operation, state-of-the-art air conditioning system and comfortable seats, passengers enjoy maximum travel comfort.

The Viaggio Comfort is also fully equipped to accommodate passengers with limited mobility and thus guarantees that everyone has a relaxing ride. The multitalented Viaggio Comfort allows passengers to relax, work or enjoy the entertainment program as desired.

Efficient and cost-effective

With its extremely easy maintenance, maximum availability and dependability, the Viaggio Comfort sets new standards.

State-of-the-art technologies for reducing energy consumption contribute to the cost efficiency of our master energy-saver, the Viaggio Comfort.

International and flexible

The Viaggio Comfort is multisystem-capable and thus suitable for cross-border operation.

In addition, the Viaggio Comfort can be quickly and easily scaled according to need, route or season. With this multi-talent, the approval procedure is simple.



Equipment modules

Basic equipment

- Modern and sophisticated ambiance
- High-quality, comfortable seats
- Power outlets for PCs
- Electronic passenger information system
- Integrated wheelchair area
- 2 comfortable entrances
- Closed gangways for high-speed traffic

Options

- WLAN connection
- Bar/Bistro with standing area
- Flexible catering concept – from vending machines, to trolley and bistro service
- Electronic seat reservations





Viaggio Comfort

The next generation

Unique design

The attractive as well as compact design of the Viaggio Comfort's new high-speed front section results in extremely low air resistance, making it even quieter and more energy-efficient.

Ergonomics & safety

When the Viaggio Comfort was developed, special attention was paid to the needs of the driver. A large field of vision and straightforward operation contribute to safety.

In addition, the high-speed front section is equipped with reinforced crash elements to increase accident safety.

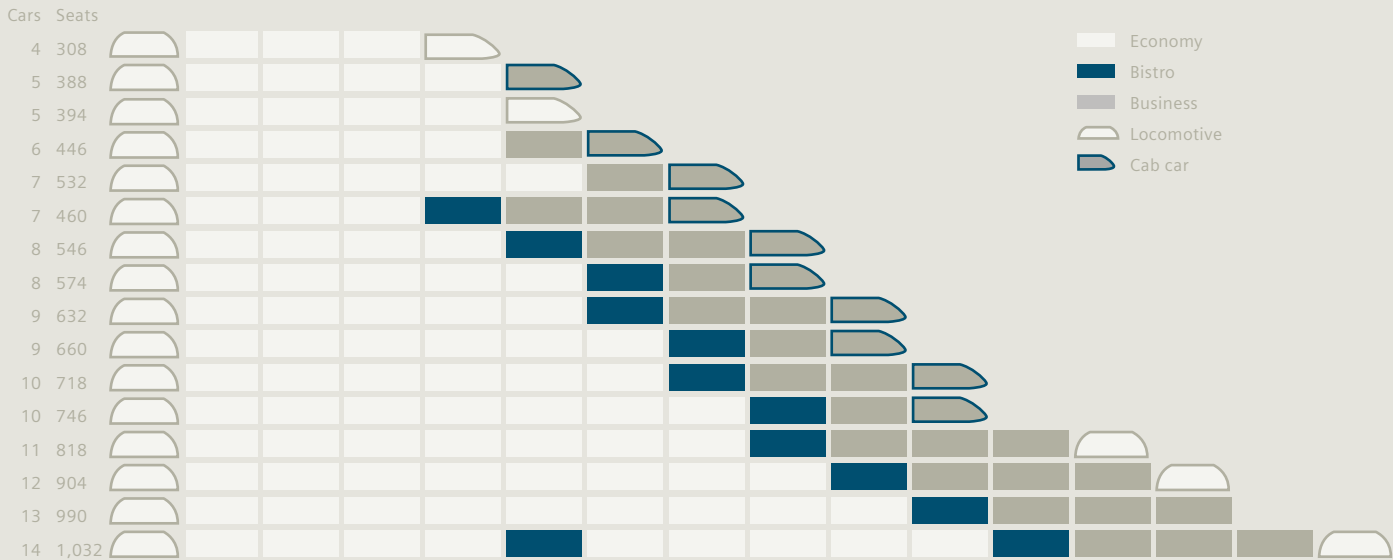
Optimized configuration

The modular equipment system affords a high degree of flexibility. The interior can be quickly and easily adapted according to need, route or season.

Innovative technology

The latest technologies for reducing energy consumption, low air resistance, air conditioning, the energy-optimized standby function and flexible coupling technology are Viaggio Comfort's unique and economical features.

Viaggio Comfort E-traction train configuration



| Technical data | |
|------------------------------------|---|
| Track gauge | 1,435 mm |
| Length over buffers | 26,500 mm |
| Car length | 26,100 mm |
| Car height above ToR | 4,050 mm |
| Car width | 2,825 mm |
| Compartment floor height above ToR | 1,250 mm |
| Clear width of entrance | 2 x 850 mm |
| Clear width of gangway | 1,100 mm |
| Entrance height above ToR | 1,250 mm |
| Distance between bogie centers | 19,000 mm |
| Bogie wheelbase | 2,500 mm |
| Bogie type | SF100 |
| Brake systems | 2 to 3 discs per axle + Mg |
| Wheel diameter (new) | 920 mm |
| Max. service speed | 230 / 249 km/h |
| Min. curve radius (uncoupled) | 150 (80) m |
| Tare weight, type-dependent | Approx. 45,5 t ²⁾ |
| Total weight, type-dependent | Approx. 61 t ²⁾ |
| No. of toilets | 1 to 2, vacuum-type |
| Power supply | 1,000 V AC 16.7 / 50 Hz; 1,500 V AC 50 Hz ¹⁾ ; 1,500 / 3,000 V DC ¹⁾ ; 3,000 V AC 50 Hz ¹⁾ ; 3 AC 400 V 50 Hz ¹⁾ |
| No. of seats | 40 to 86 seats |
| Basic equipment | <ul style="list-style-type: none"> ■ Comfort seats ■ Air conditioning ■ Single voltage power supply ■ Electronic passenger information system |

1) Additional equipment, e.g:

Video surveillance,
Multisystem power supply

2) Additional types, e.g:

Semi-open plan compartments,
First class, Cab car, Wheelchair area,
Multipurpose area, Catering bistro,
Galleys

Siemens AG

Infrastructure & Cities Sector

Rail Systems Division

Nonnendammallee 101

13629 Berlin, Germany

contact.mobility@siemens.com

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The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.