

The image features a low-angle, perspective view of two red high-speed train coaches. The train on the right is in the foreground, curving away from the viewer, while the train on the left is further back. The sky is a clear, pale blue. The Siemens logo is positioned in the top left corner.

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Viaggio

Passenger Coaches for Intercity and Regional Transport



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Urban population growth increases the requirements on individual mobility within and between cities. High level of comfort, flexibility and operating speeds up to 230 kph are the essential characteristics of Siemens passenger coaches.

As a world leading technology company Siemens offers cost-effective, innovative, and sustainable solutions for overcoming future challenges and demands for quality.





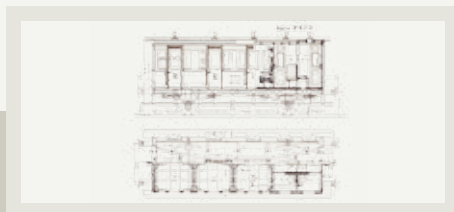
Viaggio

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 Vienna and the center for bogies 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.



1852

First passenger coach



1987

Pressure-sealed design

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

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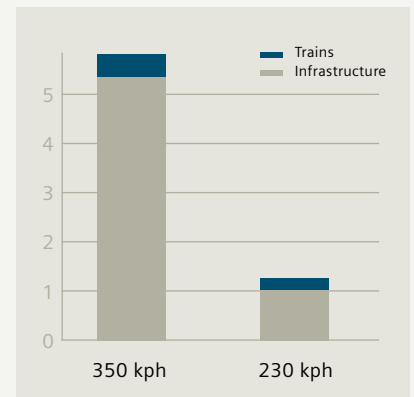
Intercity traffic of the future

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 kph. 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 service from 200 to 230 kph provides the best ratio of input and performance for the customer.

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



1994
 First modular IC coach



2003
 Comfort sleeping coach



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 ambiance. 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.



Passengers with reduced mobility will as well profit by the specific equipment in the Viaggio Comfort. The multitasking 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 reliability, the Viaggio Comfort sets new standards.

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

International and flexible

The Viaggio Comfort is multisystem-capable and thus suitable for cross-border operation, complemented by a convenient approval procedure.

In addition, the Viaggio Comfort can be quickly and easily scaled according to need, route or season.



Technical data	
Track gauge	1,435 mm
Length over buffers	26,500 mm
Car length	26,100 mm
Car height above top of rail (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	SF 100
Brake systems	2 to 3 discs per axle + magnetic track brake
Wheel diameter (new)	920 mm
Max. service speed	230 kph
Min. curve radius (uncoupled)	150 (80) m
Tare weight, type-dependent	~46 t
Total weight, type-dependent	~61 t
No. of toilets	1 to 2, vacuum-type
Power supply	1,000 V AC 16.7 / 50 Hz; 1,500 V AC 50 Hz; 1,500 / 3,000 V DC; 3,000 V AC 50 Hz; 3 AC 400 V 50 Hz
Passenger capacity	48 to 90 seats
Basic equipment	Comfort seats, Air conditioning, Single voltage power supply, Electronic passenger information system

Additional equipment, e.g:
Video surveillance,
Multisystem power supply

Additional types, e.g:
Semi-open plan compartments,
First class, Cab car, Wheelchair area,
Multipurpose area, Catering bistro,
Galleys

Reference example
ÖBB railjet
(see also p. 16)





Viaggio Twin

The king of capacity for regional & intercity traffic



Capacity and comfort

The Viaggio Twin permits maximum capacities and high-class comfort. Modern and wide entrance doors enable a quick passenger flow. The Viaggio Twin is also fully equipped to accommodate passengers with limited mobility and thus guarantees that everyone has a relaxing ride.

Flexible

Independent cars and a modular equipment system afford a high degree of flexibility. Due to its clear, standardized interfaces, the Viaggio Twin is quickly and easily scalable to demand and routing.

Cost-efficiency

Viaggio Twin is characterized by low maintenance costs, maximum availability and reliability ensuring a cost-effective service in both regional as well as intercity traffic.

Ready for the future

The Viaggio Twin complies with all TSI standards and norms, making it your modern and reliable partner for the future.





Technical data	
Track gauge	1,435 mm
Length over buffers	26,800 mm
Car length	26,400 mm
Car height above top of rail (TOR)	4,600 mm
Car width	2,780 mm
Compartment floor height above ToR	475 / 1,250 / 2,535 mm
Clear width of entrance	2 x 1,400 mm
Clear width of gangway	750 mm
Entrance height above TOR	600 / 760 mm
Distance between bogie centers	20,000 mm
Bogie wheelbase	2,500 mm
Bogie type	SF 100
Brake systems	2 to 3 discs per axle + magnetic track brake
Wheel diameter (new)	920 mm
Max. service speed	Up to 189 kph
Min. curve radius (uncoupled)	150 (80) m
Tare weight, type-dependent	~49 t
Total weight, type-dependent	~69 t
No. of toilets	0 to 2, vacuum-type
Power supply	1,000 V AC 16.7 / 50 Hz; 1,500 V AC 50 Hz; 1,500 / 3,000 V DC; 3,000 V AC 50 Hz; 3 AC 400 V 50 Hz
Passenger capacity	60 to 140 seats
Basic equipment	Air conditioning, Single voltage power supply, Electronic passenger information system

Additional equipment, e.g.:

Various entrance height,
Multisystem power supply,
Video surveillance

Additional types, e.g.:

First class, Cab car, Wheelchair area,
Multipurpose area, Catering galleys

**Reference example
SBB Double-Deck
Passenger Coach
(see also p. 17)**





Viaggio Classic

The economical RIC / UIC solution for intercity traffic



Comfortable and international

The Viaggio Classic provides maximum room for flexible configuring by day and night. Day cars, sleeping cars, dining / bistro cars and other family-friendly variations provide space to relax and recuperate, even on long journeys.

The Viaggio Classic is ideally equipped for international traffic and easily operable in both multi-system-compatible RIC / UIC mode and mixed mode with existing fleets.



Cost-effective

The economical maintenance, high availability and low investment costs make the Viaggio Classic highly cost-effective for regional and international intercity traffic.

Flexible with proven technology

The single car concept and the modular equipment system offer a high degree of flexibility.

The Viaggio Classic is equipped with neatly arranged, standardized interfaces that allow train capacity to be scaled fast and easily regarding requirements and line planning.



Technical data	
Track gauge	1,435 mm
Length over buffers	26,400 mm
Car length	26,100 mm
Car height above top of rail (TOR)	4,050 mm
Car width	2,825 mm
Compartment floor height above TOR	1,250 mm
Clear width of entrance	2 x 800 mm
Clear width of gangway	750 mm
Entrance height above TOR	1,250 mm
Distance between bogie centers	19,000 mm
Bogie wheelbase	2,500 mm
Bogie type	SF 100
Brake systems	2 to 3 discs per axle + magnetic track brake
Wheel diameter (new)	920 mm
Max. service speed	200 kph
Min. curve radius (uncoupled)	150 (80) m
Tare weight, type-dependent	~47 t
Total weight, type-dependent	~52 t
No. of toilets	1 to 2, vacuum-type
Power supply	1,000 V AC 16.7 / 50 Hz; 1,500 V AC 50 Hz; 1,500 / 3,000 V DC; 3,000 V AC 50 Hz; 3 AC 400 V 50 Hz
Passenger capacity	48 to 90 seats
Basic equipment	Comfort seats, Air conditioning, Single voltage power supply

Additional equipment, e.g.:

Multisystem power supply,
Video surveillance

Additional types, e.g.:

Compartments, First class, Cab car,
Wheelchair area, Multipurpose area,
Catering bistro and galleys

**Reference example
RŽD Sleeping Coach
(see also p. 18)**





Viaggio Light

The Low-Floor star for regional & intercity traffic



Low-Floor and comfortable

What makes the Viaggio Light a flexible, low-floor star is the speed and comfort with which its passengers board and alight, its wide doors, and its flexible adaptability to different platform heights (350 mm to 1,060 mm). Passengers are guaranteed a sense of well-being from the moment they board.

The Viaggio Light is also fully equipped to accommodate passengers with limited mobility.



The Viaggio Light is the comfortable interregio passenger coach whose adaptability comes from flexible interior fixtures.

Efficient and cost-effective

The cost-efficient Viaggio Light suits perfectly to both regional and intercity traffic up to 200 kph, due to low investment costs, long-term maintenance of value, low maintenance costs and high availability.

Variable use

The configuration of independently applicable cars and a modular equipment system provide a high degree of flexibility.

The clear, consistent interfaces of the Viaggio Light ensure quick and easy train capacity adjustment according to the need, route or season.



Technical data	
Track gauge	1,435 mm
Length over buffers	26,400 mm
Car length	26,100 mm
Car height above top of rail (TOR)	4,050 mm
Car width	2,800 mm
Compartment floor height above TOR	600 / 800 / 1,250 mm
Clear width of entrance	1,300 mm
Clear width of gangway	750 mm
Entrance height above TOR	600 / 650 / 800 / 1,030 mm
Distance between bogie centers	19,000 mm
Bogie wheelbase	2,500 mm
Bogie type	SF 300 / SF 100
Brake systems	2 to 3 discs per axle + magnetic track brake
Wheel diameter (new)	920 mm
Max. service speed	Up to 200 kph
Min. curve radius (uncoupled)	150 (80) m
Tare weight, type-dependent	~45 t ²⁾
Total weight, type-dependent	~55 t ²⁾
No. of toilets	0 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⁾
Passenger capacity	45 to 99 seats
Basic equipment	Air conditioning, Single voltage power supply, Electronic passenger information system

Additional equipment, e.g.:

Various entrance heights,
Multisystem power supply,
Video surveillance

Additional types, e.g.:

First class, Cab car, Wheelchair area,
Multipurpose area, Catering galleys

**Reference example
Low-Floor Passenger Coach**
(see also p. 19)





Train configuration

The flexible system

- E Entry height
- F Floor height
- RE Regional traffic
- IC Intercity
- EC Mainline traffic
- * Option, () Technically possible

- Seats per car (depending on seating arrangement)
- Seats per train (min. – max.)



Vectron AC – 160 / 200 kph, 5.6 / 6.4 MW



Vectron DC – 160 / 200 kph, 5.2 MW



Vectron MS – 160 / 200 kph, up to 6.4 MW



Vectron DE – 160 kph, 2.4 MW (engine power)

100–130 seats



Viaggio Twin Low: RE = 140–160 kph, E = 600 mm, F = 451 / 1,150 / 2,518

110–140 seats



Viaggio Twin High: RE = 140–160 kph, IC = 200 kph, E = 1,150 mm, F = 451

60–90 seats



Viaggio Classic: IC / EC = 200 kph, E = 1,250 mm, F = 1,250 mm

60–99 seats

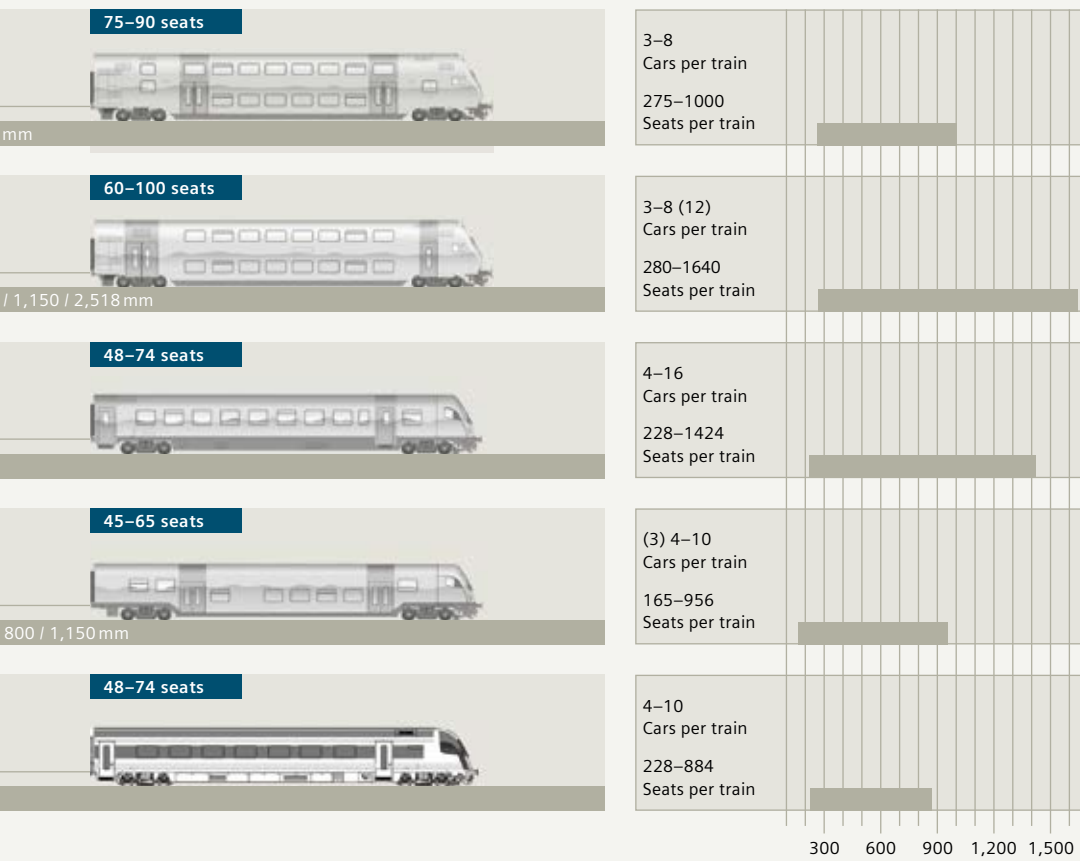


Viaggio Light: RE = 140–160 kph, IC = 200 kph, E = 600–950 mm, F = 600

60–90 seats



Viaggio Comfort: IC = 230 kph, E = 1,250 mm, F = 1,250 mm





Viaggio Comfort

Intercity-Push / Pull Train for ÖBB

Viaggio Comfort combines Efficiency with Comfort

Main features:

- Comfort seats
- Saloon and semi-open compartments
- Catering – Bistro
- Dedicated seats for passengers with special requirements (Wheelchair area / elevator / universal toilet)
- Children's playground
- Automatic folding step for convenient entrance
- Luggage racks for bulk luggage
- Air conditioning
- Electronic passenger info
- Spacious, modern interior
- Wide, closed gangway
- Multisystem technology for easy cross-border traffic
- Delivery of 357 cars (51 trains) to Österreichische Bundesbahnen (ÖBB)

Technical Data	
Track gauge	1,435 mm
Length over buffers	26,850 ¹⁾ / 26,500 ²⁾³⁾⁴⁾ / 26,450 ⁵⁾ mm
Car length	26,409 ¹⁾ / 25,980 ²⁾³⁾⁴⁾⁵⁾ mm
Car height above top of rail (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	SF 400
Brake system	3 discs per axle + magnetic track brake
Wheel diameter (new)	920 mm
Max. service speed	230 kph
Min. curve radius (uncoupled)	150 (80) m
Tare weight	54.7 ¹⁾ / 48.6 ²⁾ / 50.8 ³⁾ / 49.5 ⁴⁾ / 49.1 ⁵⁾ t
Total weight	59.5 ¹⁾ / 53.7 ²⁾ / 56.1 ³⁾ / 56.7 ⁴⁾ / 55.2 ⁵⁾ t
No. of toilets	1 ¹⁾⁵⁾ / 2 ²⁾⁴⁾ / 1 Universal ³⁾ , Vacuum
Power supply	1,000 V AC 16.7 / 50 Hz 1,500 V AC 50 Hz 1,500 / 3,000 V DC
Passenger capacity	27 ¹⁾ / 55 ²⁾ / 10+3 ²⁾ / 80 ⁴⁾ / 76 ⁵⁾ seats

Car types

- 1) Premium Control Car Afmpz (1 pc.)
- 2) First Class Ampz (1 pc.)
- 3) Bistro Car ARbmpz (1 pc.)
- 4) Economy Class Bmpz / 1 (3 pcs.)
- 5) Economy Class Bmpz / 2 (1 pc.)



Viaggio Twin

Double-Deck Passenger Coach NDW for SBB and SZU

Technical Data	Type SBB	Type SZU
Track gauge	1,435 mm	
Length over buffers	26,800 mm	
Car length	26,400 mm	
Car height above top of rail (TOR)	4,618 mm	
Car width	2,780 mm	
Compartment floor height above TOR	Lower deck: 475 mm, Tween deck: 1,250 mm, Upper deck: 2,535 mm	
Clear width of entrance	1,400 mm	
Distance between bogie centers	20,000 mm	
Bogie wheelbase	2,500 mm	
Bogie type	SF 100	
Brake systems	2 discs per axle + magnetic track brake	
Wheel diameter (new)	920 mm	
Max. service speed	160 kph	
Min. curve radius (uncoupled)	150 (90) m	
Tare weight	52.3 t	51.7 t
Total weight	74.4 t	74.3 t
No. of toilets (wheelchair compatible)	1	–
Power supply	1,000 V AC 16.7 Hz; Complete power supply value 95 kVA; 3 AC 400 V: max. 85 kVA; DC 110 V: max. 12 kW	
Passenger capacity	98 seats, 216 max. standees	106 seats, 222 max. standees

Viaggio Twin – Low Entrance Double-Deck Passenger Coach

Main features:

- Barrier-free entrance, automatic entrance system and spacious entrance area supporting quick and comfortable passenger entry
- Wheelchair area including suitable toilets (type SBB) and spacious seating area on ground level floor (type SZU)
- Innovative air conditioning due to demand-oriented air flow, CO₂ controlling and energy savings
- Minimal noise emission due to acoustical management in engineering and manufacturing
- Air-suspended SF 100 bogies providing highest comfort
- Manufacturing split with local added value through partner Bombardier Transportation Switzerland AG
- Delivery of 113 cars type SBB to Schweizerische Bundesbahnen
- Delivery of 8 cars type SZU to Sihltal-Zürich-Uetliberg Bahn



Viaggio Classic

Multisystem Sleeping Coach for RŽD

Multisystem Sleeping Coach for Europe and Russia on Standard & Broad Gauge

Main features:

- The RIC sleeping coach for OAO RŽD is designed for international traffic in the regions of the International Union of Railways UIC and in the European part of the Russian Federation, the CIS States and in the Baltic States.
- The changeover between the rail networks with different track gauges is performed by exchanging the bogies, using the available infrastructure facilities in the change-of-gauge plants (e.g. Brest).
- Each sleeping coach consists of 8 compartments with 4 beds each which can be turned into 4 full seats with head rests during the day, 1 service compartment, 1 resting room for the train crew, 1 standard toilet, 1 toilet with integrated shower.
- Air conditioning
- The delivery of 200 vehicles has started in 2013.

Technical Data		
Track gauge	1,435 mm	1,520 mm
Length over buffers	26,400 mm	
Car length	26,100 mm	
Car height above top of rail (TOR)	4,068 mm	
Car width	2,825 mm	
Compartment floor height above TOR	1,250 mm	1,270 mm
Clear width of entrance	1 x 800 mm	
Distance between bogie centers	19,000 mm	
Bogie type	SF 300	68-4108, 68-4109
Brake systems	3 discs per axle + magnetic track brake	
Wheel diameter (new)	920 mm	
Max. service speed	200 kph	160 kph
Min. curve radius (uncoupled)	150 (80) m	
Tare weight	57.5 t	
Total weight	59.5 t	
No. of toilets / showers	2 / 1	
Power supply	AC 1,000 V, 16.7 Hz, 50 Hz; AC 1,500 V, 50 Hz; AC 3,000 V, 50 Hz; DC 1,500 V; DC 3,000 V	
Battery voltage On board supply system	DC 110 V	
Passenger capacity	32 seats / beds, 1 seat / bed for train crew	



Viaggio Light

Low-Floor Passenger Coach SDPP

Technical Data	
Car types	PC Cab car with diesel generator set, TC trailer car, TCHC trailer car / wheelchair equipment
Track gauge	1,435 mm
Length over buffers	26,400 (PC) 26,400 (TC) 26,400 (TCHC) mm
Car length	25,600 (PC) 26,100 (TC) 26,100 (TCHC) mm
Car height above top of rail (TOR)	4,350 mm
Car width	2,800 mm
Compartment floor height above TOR	1,030 / 1,250 mm
Clear width of entrance	2 x 1,200 mm
Clear width of gangway	750 mm
Entrance height above TOR	1,030 mm
Distance between bogie centers	19,000 mm
Bogie wheelbase	2,500 mm
Bogie type	SF 300-R/3S
Brake systems	3 discs per axle (PC) + magnetic track brake (TC, TCHC)
Wheel diameter (new)	920 mm
Max. service speed	160 kph
Min. curve radius (uncoupled)	150 (80) m
Tare weight	56.1 t (PC) / 48.1 t (TC) / 47.9 t (TCHC)
Total weight	63.0 t (PC) / 60.5 t (TC) / 63.0 t (TCHC)
No. of toilets	1 (PC), 1 (TC), 1 (TCHC); Vacuum
Power supply	3 x 400 / 230 V AC 50 Hz
Passenger capacity	27 seats (PC) 82 seats (TC) 75 seats (TCHC)

Low-Floor Passenger Coach without Steps

Main features:

- Air conditioning
- Single voltage power supply
- Electronic passenger info
- Central diagnostics
- Automatic sliding step for convenient entrance
- Luggage racks for bulk luggage
- Wheelchair area with elevator and universal toilet in TCHC car
- Diesel generator set in PC car for auxiliary power supply
- Delivery of 118 cars
- Options for up to 585 cars in preparation

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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.