RAIL.ONE
The way to go.

CONCRETE SLEEPERS

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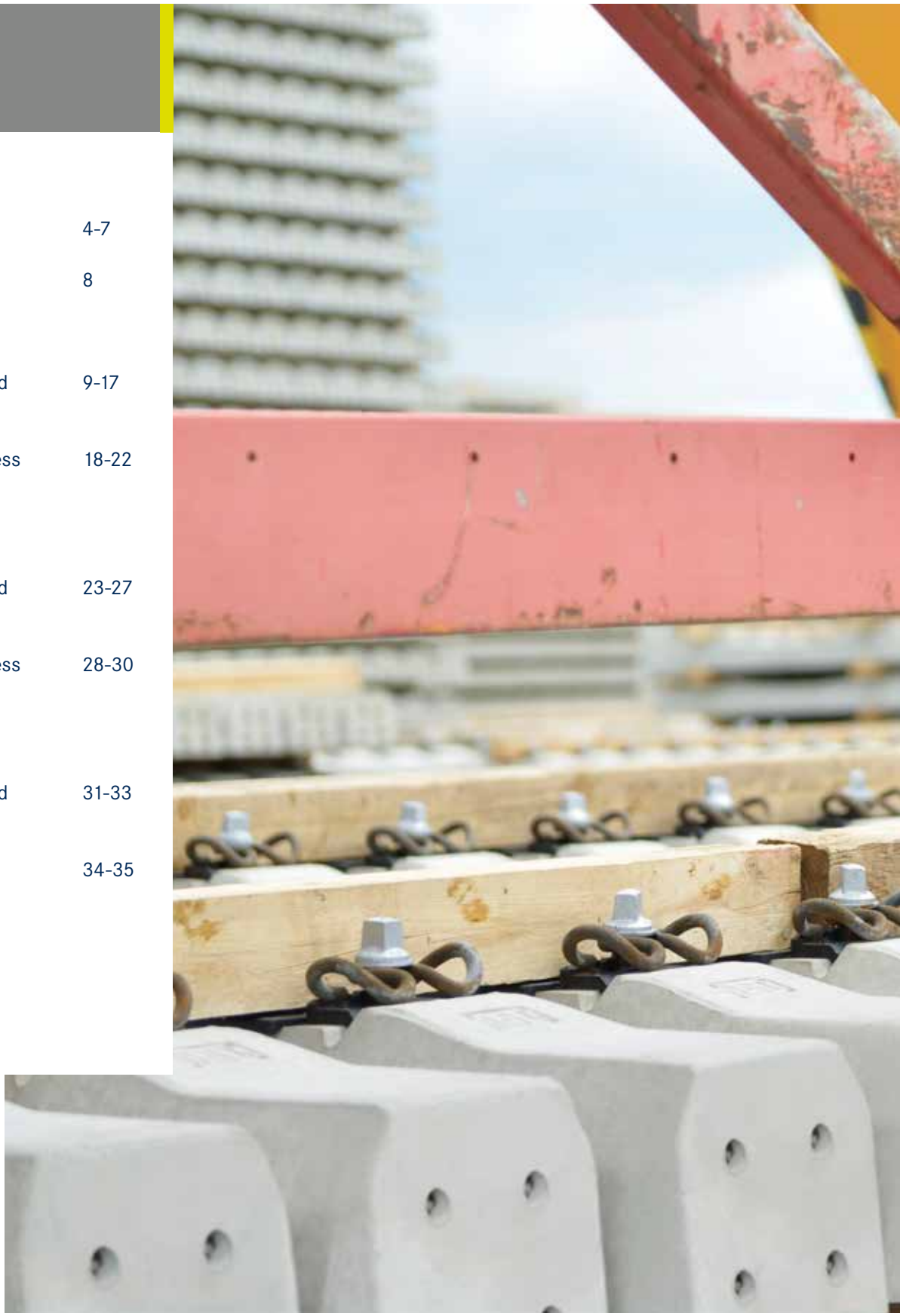


RAIL.ONE – THE WAY TO GO

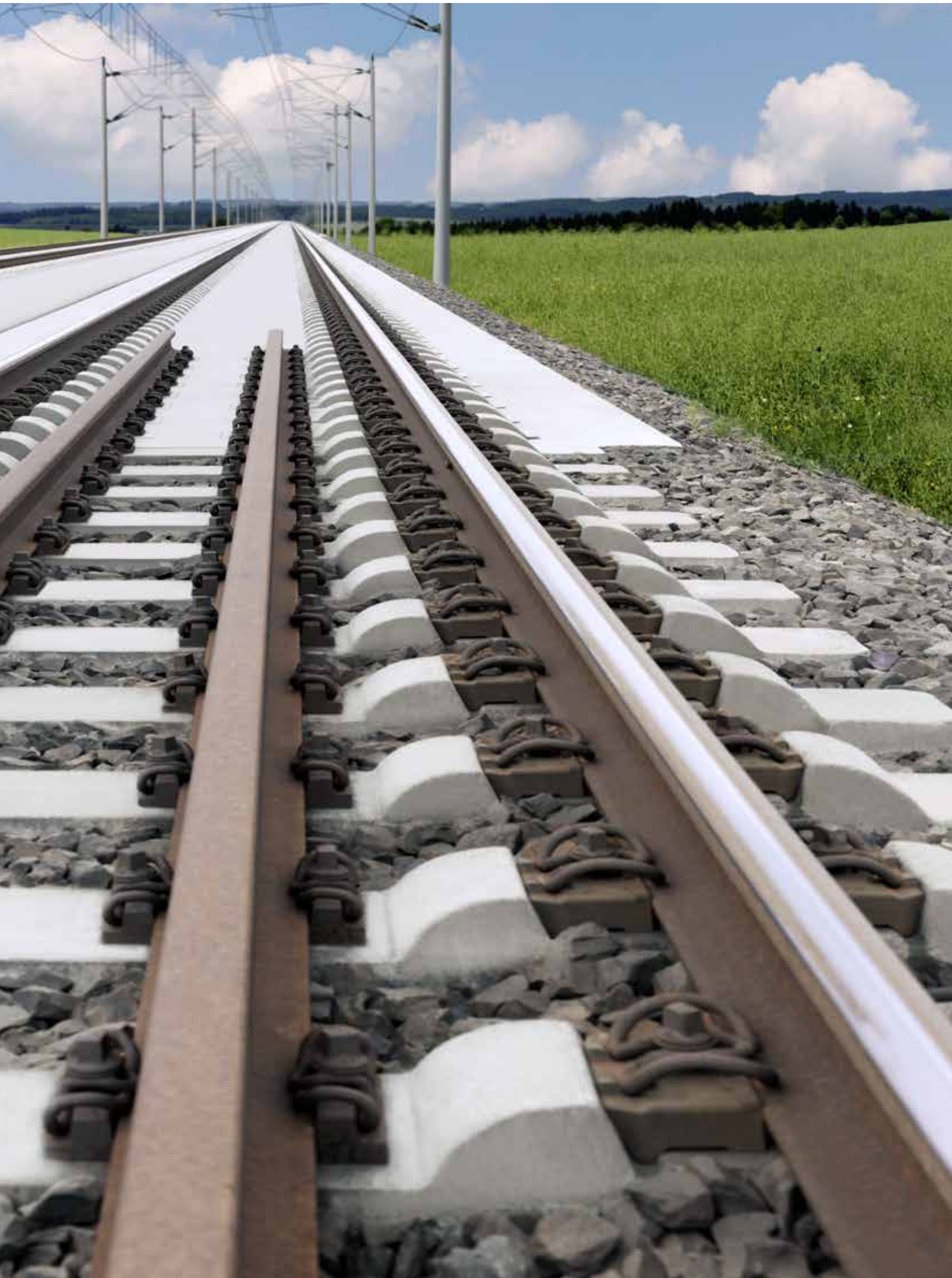
We develop innovative railway track systems – to help you get ahead fast and safely. And what are your plans?

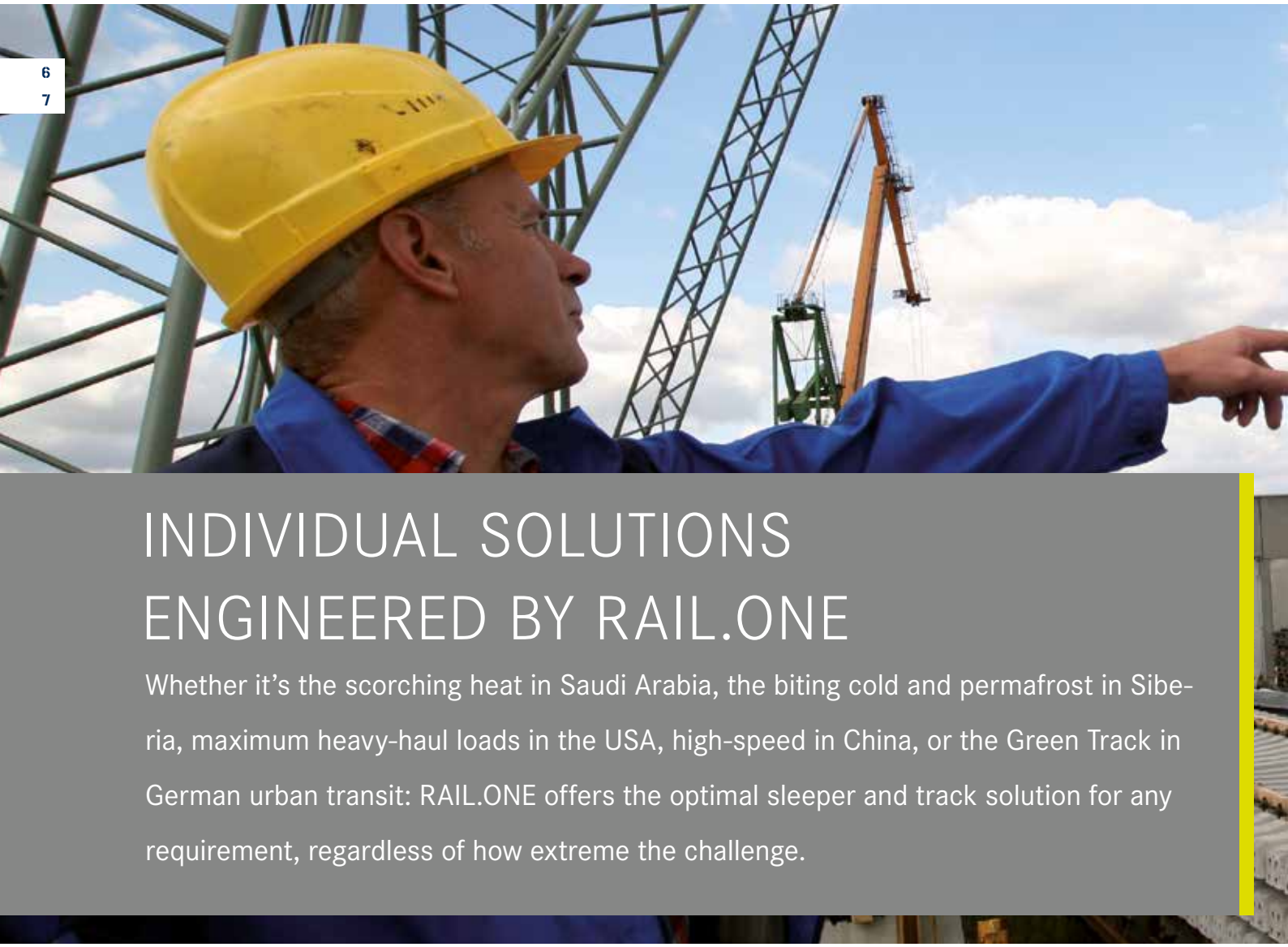
YOUR OBJECTIVE IS OUR CHALLENGE

RAIL.ONE delivers innovative track systems for railway transport in Germany and around the world: we offer engineering, production, supply, logistics, and quality management – all on a one-stop basis. Our systems require very little maintenance over the course of time and allow stable track geometry and excellent ride comfort, even at high speeds and under extremely rigorous conditions. And since every track should be optimized for its individual operational area, RAIL.ONE places special emphasis on close collaboration with customers and business partners. With its extensive sales network – as well as locations in Germany, Europe, Middle East, Asia, and in the USA – RAIL.ONE occupies a leading position in track-system technology and in the manufacturing of concrete sleepers. Continuous research and further development assure our technological lead.

RAIL.ONE – DEVELOPMENT BASED ON EXPERIENCE

RAIL.ONE has become well established as a comprehensively oriented systems and engineering provider for the entire field of railway tracks, with its great number and diversity of requirements. In the high-speed area, the company has achieved an internationally leading position. RAIL.ONE furthermore offers the production of concrete main-track and turnout sleepers. All of this means that RAIL.ONE, in close cooperation with customers and business partners, performs complete services for product development, manufacture, and application on a one-stop basis – beginning with engineering; including production, supply, and logistics; and extending to quality management.





INDIVIDUAL SOLUTIONS ENGINEERED BY RAIL.ONE

Whether it's the scorching heat in Saudi Arabia, the biting cold and permafrost in Siberia, maximum heavy-haul loads in the USA, high-speed in China, or the Green Track in German urban transit: RAIL.ONE offers the optimal sleeper and track solution for any requirement, regardless of how extreme the challenge.

TO EACH CUSTOMER HIS OWN SLEEPER

In the age of individualization, RAIL.ONE as the leading provider of concrete sleepers and track systems has developed a strategy that focuses on individual customer requirements and general project constraints in all application areas. This concentration of effort is possible as the result of an extensive portfolio of technologically mature products that can be simply matched to special challenges – and on the basis of customer-oriented organization of the entire corporate structure. Together with its customers, RAIL.ONE defines the requirements placed on the sleeper designs, specifies the necessary prestressing and strength of the concrete sleeper body, and adapts sleeper geometry to the conditions of the application environment: for example, sand drifts in desert regions.

RAIL.ONE specifies the technological features of the required sleepers on the basis of existing constraints, in accordance with the expected operational loads and environmental influences. The design of the production facilities themselves is likewise oriented to the individual requirements placed. Insofar as possible, manufacturing and administrative facilities are set up directly onsite, in order to achieve as great manufacturing depth as feasible. In these efforts, RAIL.ONE is the only sleeper production-plant planner and builder with four specific sleeper-production processes and factory types. It can consequently match the performance and the manufacturing processes of these plants exactly to the requested output. This enables RAIL.ONE to optimize products and track

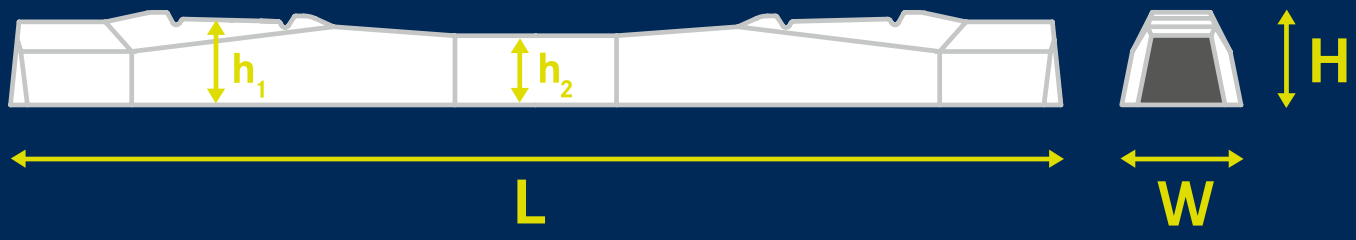
systems flexibly to suit individual circumstances – thereby achieving extended service life and reduced life-cycle costs for its customers. The intelligent logistics concepts and the widely distributed location of production facilities of RAIL.ONE assure short delivery distances and lowering of overall costs and resource consumption.

QUALITY AT TOP LEVEL

RAIL.ONE offers its customers the entire spectrum of track systems for passenger, freight, and heavy-haul transport: from sleepers for ballasted tracks all the way to the special RHEDA 2000® ballastless-track solution. The systems require little maintenance over the decades. They offer stable track positioning and excellent ride comfort – also under the highest of train speeds and extreme loading. The basic principle for RAIL.ONE here is its commitment to top priority for quality. RAIL.ONE has been closely allied with the railway market for more than 100 years. Expertise gained over many years of experience and readiness for full commitment onsite constitute the foundation for RAIL.ONE's unique position with respect to quality of products. It's not just by chance that RAIL.ONE has been a Q1 Supplier of Deutsche Bahn AG for years now.

The following pages provide you with an overview of the various concrete sleeper types and track systems.

DIMENSIONS



Concrete sleepers from RAIL.ONE are marketed under the following manufacturer's designations: IA L TR P K C C P P B HL qP

RAIL.ONE

RAILWAYS
CONCRETE SLEEPERS FOR BALLASTED TRACK

GERMANY B 70

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	114 l
Weight (without fastenings)	280 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	234 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	6800 cm²
Standard application	Main-track sleeper

GERMANY B 70-2.4

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	160 km/h
Concrete grade	C 50/60
Concrete volume	104 l
Weight (without fastenings)	260 kg
Length (L)	2400 mm
Width (W)	300 mm
Sleeper height (H)	234 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	6237 cm²
Standard application	Main-track sleeper

GERMANY B 90

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	135 l
Weight (without fastenings)	332 kg
Length (L)	2600 mm
Width (W)	320 mm
Sleeper height (H)	234 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	7944 cm²
Standard application	Main-track sleeper

GERMANY B 93

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	142 l
Weight (without fastenings)	348 kg
Length (L)	2600 mm
Width (W)	298 mm
Sleeper height (H)	193 mm
Height of centre of rail base (h_1)	193 mm
Height of sleeper centre (h_2)	193 mm
Support surface (total)	7748 cm²
Standard application	Main-track sleeper for gripping/guard rail

GERMANY B 93.1

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	140 l
Weight (without fastenings)	342 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	200 mm
Height of centre of rail base (h_1)	200 mm
Height of sleeper centre (h_2)	193 mm
Support surface (total)	7800 cm²
Standard application	Main-track sleeper
	for guard rail

GERMANY B 07

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	> 230 km/h
Concrete grade	C 50/60
Concrete volume	136 l
Weight (without fastenings)	334 kg
Length (L)	2600 mm
Width (W)	320 mm
Sleeper height (H)	234 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	7944 cm²
Standard application	Main-track sleeper

GERMANY BBS 1

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	160 km/h
Concrete grade	C 50/60
Concrete volume	230 l
Weight (without fastenings)	560 kg
Length (L)	2400 mm
Width (W)	570 mm
Sleeper height (H)	233 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	225 mm
Support surface (total)	13670 cm²
Standard application	Main-track sleeper

GERMANY BBS-BÜ

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	290 l
Weight (without fastenings)	700 kg
Length (L)	2400 mm
Width (W)	590 mm
Sleeper height (H)	233 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	233 mm
Support surface (total)	14160 cm²
Standard application	Railroad crossing

I2

I3

GERMANY B 320

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	148 l
Weight (without fastenings)	360 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	273.5 mm
Height of centre of rail base (h_1)	217 mm
Height of sleeper centre (h_2)	190 mm
Support surface (total)	7768 cm²
Standard application	Transition sleeper

GERMANY TURNOUT

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	63.4 l/m
Weight (without fastenings)	155 kg/m
Length (L)	800...4700 mm
Width (W)	300 mm
Sleeper height (H)	220 mm
Height of centre of rail base (h_1)	220 mm
Height of sleeper centre (h_2)	220 mm
Support surface (total)	3000 cm²/m
Standard application	Turnout sleeper

HUNGARY B 70

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	114 l
Weight (without fastenings)	280 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	234 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	6800 cm²
Standard application	Main-track sleeper

HUNGARY LW

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	200 km/h
Concrete grade	C 45/55
Concrete volume	120.5 l
Weight (without fastenings)	296 kg
Length (L)	2500 mm
Width (W)	300 mm
Sleeper height (H)	232 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	7019 cm²
Standard application	Main-track sleeper

HUNGARY LM

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	140 km/h
Concrete grade	C 50/60
Concrete volume	99.8 l
Weight (without fastenings)	253 kg
Length (L)	2420 mm
Width (W)	280 mm
Sleeper height (H)	190 mm
Height of centre of rail base (h_1)	181 mm
Height of sleeper centre (h_2)	150 mm
Support surface (total)	6776 cm²
Standard application	Main-track sleeper

HUNGARY LSZ

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	200 km/h
Concrete grade	C 50/60
Concrete volume	139.7 l
Weight (without fastenings)	341 kg
Length (L)	2700 mm
Width (W)	295 mm
Sleeper height (H)	225 mm
Height of centre of rail base (h_1)	216 mm
Height of sleeper centre (h_2)	185 mm
Support surface (total)	7965 cm²
Standard application	Main-track sleeper for
	wide gauges

HUNGARY LI

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	200 km/h
Concrete grade	C 50/60
Concrete volume	124.1 l
Weight (without fastenings)	311 kg
Length (L)	2420 mm
Width (W)	295 mm
Sleeper height (H)	225 mm
Height of centre of rail base (h_1)	216 mm
Height of sleeper centre (h_2)	185 mm
Support surface (total)	7139 cm²
Standard application	Main-track sleeper
	(extended gauge is possible)

HUNGARY FV

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	140 km/h
Concrete grade	C 50/60
Concrete volume	151.6 l
Weight (without fastenings)	371 kg
Length (L)	2900 mm
Width (W)	291 mm
Sleeper height (H)	225 mm
Height of centre of rail base (h_1)	216 mm
Height of sleeper centre (h_2)	185 mm
Support surface (total)	8439 cm²
Standard application	Main-track sleeper with
	polyvalent fastening system

HUNGARY LT

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	140 km/h
Concrete grade	C 50/60
Concrete volume	101.7 l
Weight (without fastenings)	250 kg
Length (L)	2420 mm
Width (W)	280 mm
Sleeper height (H)	190 mm
Height of centre of rail base (h_1)	181 mm
Height of sleeper centre (h_2)	171 mm
Support surface (total)	6776 cm^2
Standard application	Main-track sleeper for guard rail

HUNGARY TM

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	140 km/h
Concrete grade	C 50/60
Concrete volume	99.8 l
Weight (without fastenings)	248 kg
Length (L)	2420 mm
Width (W)	280 mm
Sleeper height (H)	190 mm
Height of centre of rail base (h_1)	181 mm
Height of sleeper centre (h_2)	150 mm
Support surface (total)	6776 cm^2
Standard application	Main-track sleeper

HUNGARY UG-48

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	160 km/h
Concrete grade	C 50/60
Concrete volume	133.1 l
Weight (without fastenings)	326 kg
Length (L)	2420 mm
Width (W)	260 mm
Sleeper height (H)	220 mm
Height of centre of rail base (h_1)	220 mm
Height of sleeper centre (h_2)	220 mm
Support surface (total)	6292 cm^2
Standard application	Railroad crossing

HUNGARY TURNOUT

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	160 km/h
Concrete grade	C 50/60
Concrete volume	different
Weight (without fastenings)	134.7 kg/m
Length (L)	different
Width (W)	260 mm
Sleeper height (H)	220 mm
Height of centre of rail base (h_1)	220 mm
Height of sleeper centre (h_2)	220 mm
Support surface (total)	different
Standard application	Turnout sleeper

NETHERLANDS NS 90

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	112 l
Weight (without fastenings)	276 kg
Length (L)	2520 mm
Width (W)	300 mm
Sleeper height (H)	232.9 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	6537 cm²
Standard application	Main-track sleeper

POLAND PS-94

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	120 l
Weight (without fastenings)	294 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	235 mm
Height of centre of rail base (h_1)	229 mm
Height of sleeper centre (h_2)	180 mm
Support surface (total)	6805 cm²
Standard application	Main-track sleeper

ROMANIA T00

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	200 km/h
Concrete grade	C 50/60
Concrete volume	119 l
Weight (without fastenings)	300 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	241 mm
Height of centre of rail base (h_1)	217 mm
Height of sleeper centre (h_2)	182 mm
Support surface (total)	6800 cm²
Standard application	Main-track sleeper

ROMANIA P00

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	200 km/h
Concrete grade	C 50/60
Concrete volume	152 l
Weight (without fastenings)	350 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	200 mm
Height of centre of rail base (h_1)	200 mm
Height of sleeper centre (h_2)	190 mm
Support surface (total)	7800 cm²
Standard application	Bridge sleeper

16

17

ROMANIA TURNOUT

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	200 km/h
Concrete grade	C 50/60
Concrete volume	66 l/m
Weight (without fastenings)	150 kg/m
Length (L)	2200...4800 mm
Width (W)	300 mm
Sleeper height (H)	220 mm
Height of centre of rail base (h_1)	220 mm
Height of sleeper centre (h_2)	220 mm
Support surface (total)	3000 cm^2/m
Standard application	Turnout sleeper

RUSSIA HSS 09

Parameters	Unit
Permissible axle loads	17 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	126 l
Weight (without fastenings)	307 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	247 mm
Height of centre of rail base (h_1)	234 mm
Height of sleeper centre (h_2)	205 mm
Support surface (total)	6755 cm^2
Standard application	High-speed sleeper

SPAIN AI-04

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	133 l
Weight (without fastenings)	325 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	267 mm
Height of centre of rail base (h_1)	237 mm
Height of sleeper centre (h_2)	210 mm
Support surface (total)	6856 cm^2
Standard application	Main-track sleeper

SPAIN MR-00

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	126 l
Weight (without fastenings)	308 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	257 mm
Height of centre of rail base (h_1)	232 mm
Height of sleeper centre (h_2)	200 mm
Support surface (total)	6760 cm^2
Standard application	Main-track sleeper

SPAIN PR-01

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	125 l
Weight (without fastenings)	305 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	257 mm
Height of centre of rail base (h_1)	226.5 mm
Height of sleeper centre (h_2)	200 mm
Support surface (total)	6760 cm^2
Standard application	Main-track sleeper with polyvalent fastening system

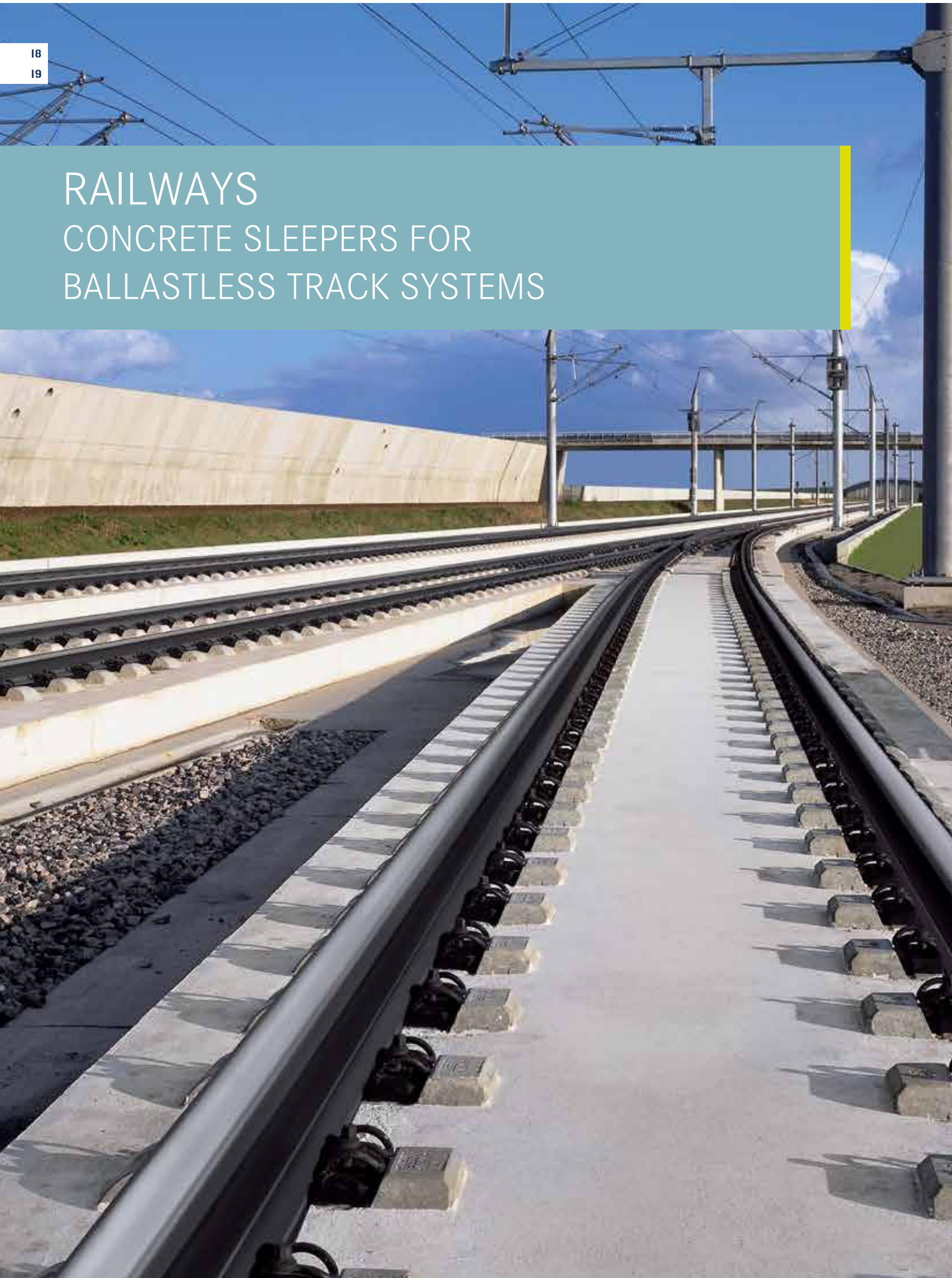
TURKEY B 70

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	114 l
Weight (without fastenings)	290 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	234 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	6800 cm^2
Standard application	Main-track sleeper

TURKEY TURNOUT

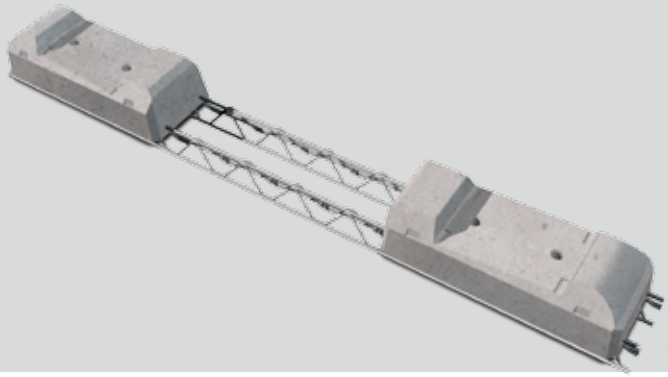
Parameters	Unit
Permissible axle loads	25 t
Maximum speed	200 km/h
Concrete grade	C 50/60
Concrete volume	66 l/m
Weight (without fastenings)	150 kg/m
Length (L)	2200...4800 mm
Width (W)	300 mm
Sleeper height (H)	220 mm
Height of centre of rail base (h_1)	220 mm
Height of sleeper centre (h_2)	220 mm
Support surface (total)	3000 cm^2/m
Standard application	Turnout sleeper

RAILWAYS
CONCRETE SLEEPERS FOR BALLASTLESS TRACK SYSTEMS



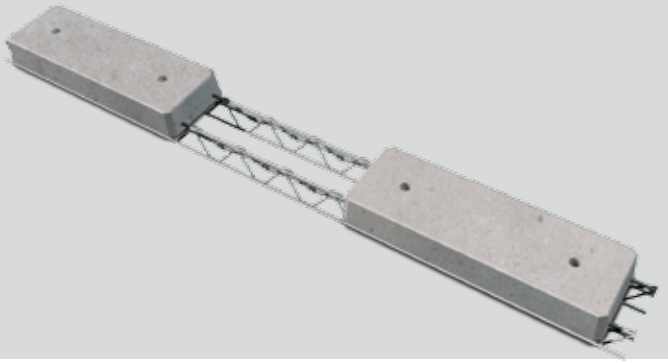
RHEDA 2000®* B 355.1

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	52 l
Weight (without fastenings)	138 kg
Length (L)	2316
Width (W)	283 mm
Sleeper height (H)	233.5 mm
Height of centre of rail base (h_1)	127 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



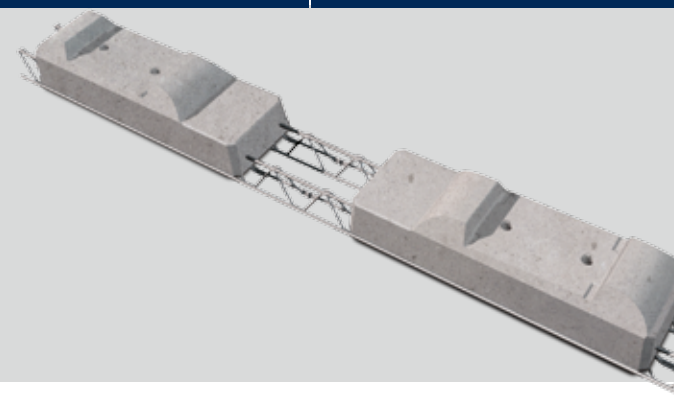
RHEDA 2000® B 355.2

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	47 l
Weight (without fastenings)	130 kg
Length (L)	2509 mm
Width (W)	285 mm
Sleeper height (H)	150 mm
Height of centre of rail base (h_1)	105 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



RHEDA 2000®* B 355.3

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	77 l
Weight (without fastenings)	197 kg
Length (L)	2509 mm
Width (W)	286 mm
Sleeper height (H)	253.5 mm
Height of centre of rail base (h_1)	147 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



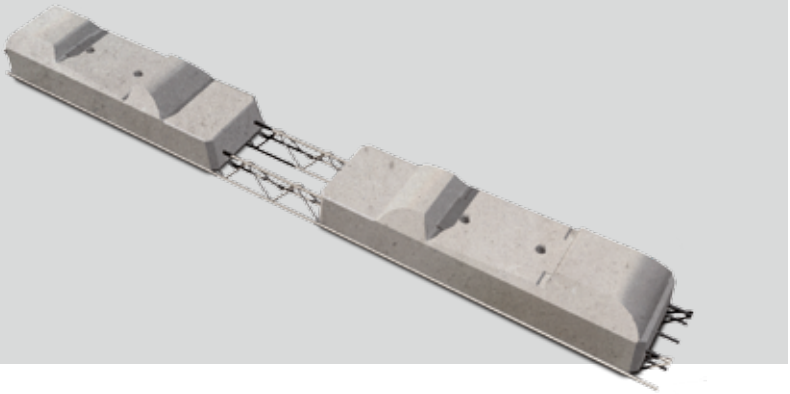
RHEDA 2000®* B 355.3 - Fa

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	86 l
Weight (without fastenings)	224 kg
Length (L)	2509 mm
Width (W)	286 mm
Sleeper height (H)	253.5 mm
Height of centre of rail base (h_1)	147 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper for gripping/guard rail

*Can be implemented with W or U groove

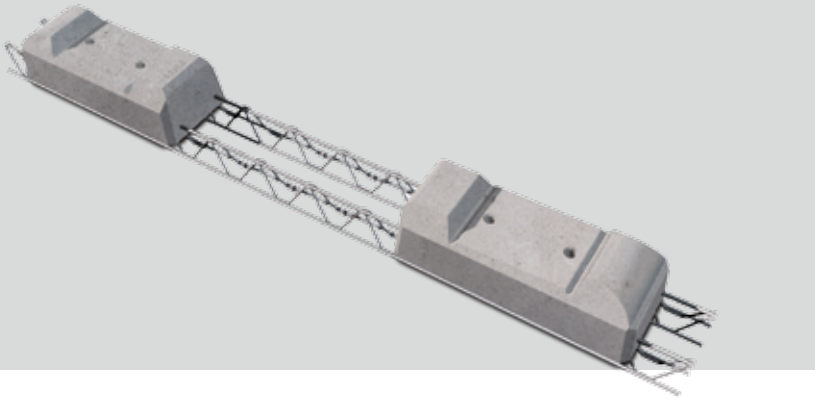
RHEDA 2000®* B 355.4

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	83 l
Weight (without fastenings)	218 kg
Length (L)	2600 mm
Width (W)	286 mm
Sleeper height (H)	248.5 mm
Height of centre of rail base (h_1)	142 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



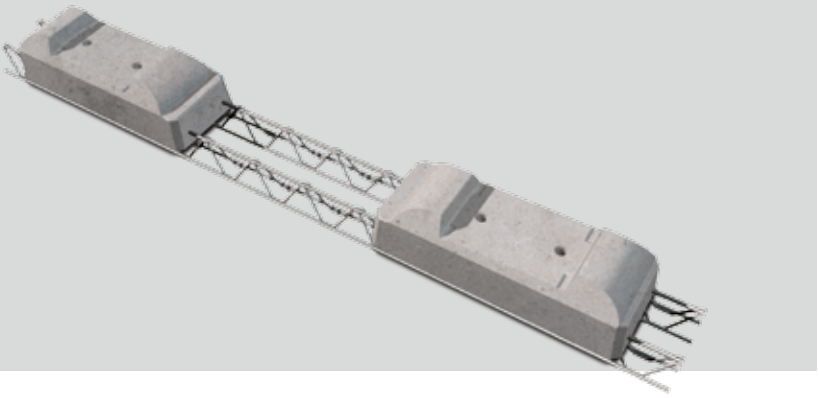
RHEDA 2000®* B 355.5

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	59 l
Weight (without fastenings)	155 kg
Length (L)	2509 mm
Width (W)	286 mm
Sleeper height (H)	253.5 mm
Height of centre of rail base (h_1)	147 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



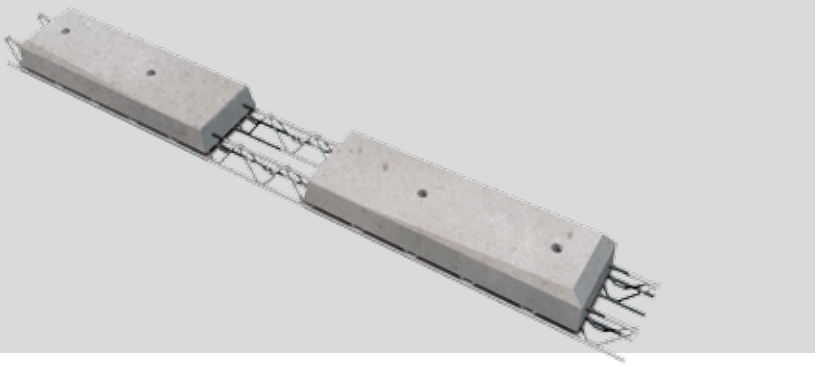
RHEDA 2000®* B 355.6

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	67 l
Weight (without fastenings)	173 kg
Length (L)	2509 mm
Width (W)	286 mm
Sleeper height (H)	248 mm
Height of centre of rail base (h_1)	147 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



RHEDA 2000® B 355 - SFC

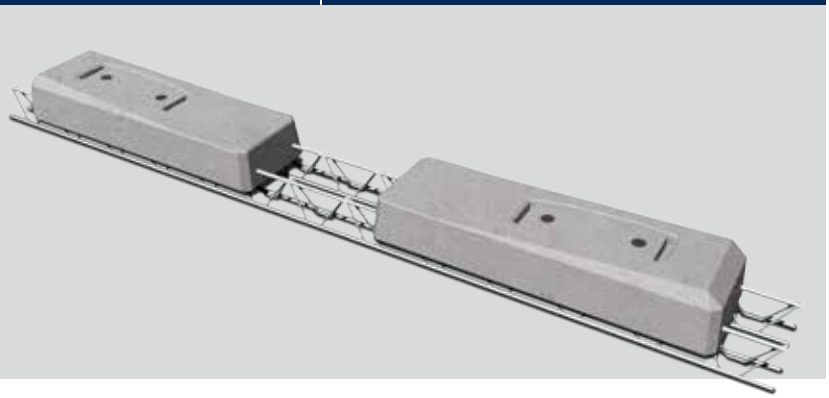
Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	54 l
Weight (without fastenings)	146 kg
Length (L)	2509 mm
Width (W)	282 mm
Sleeper height (H)	192 mm
Height of centre of rail base (h_1)	122 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



*Can be implemented with W or U groove

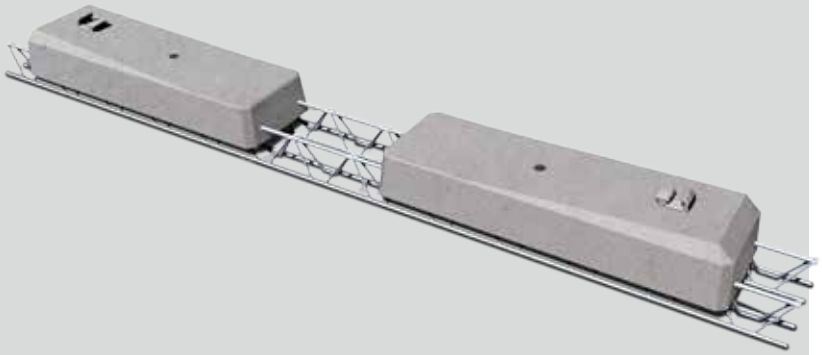
RHEDA 2000® B 355.3 - FCA

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	61 l
Weight (without fastenings)	161 kg
Length (L)	2509 mm
Width (W)	285 mm
Sleeper height (H)	202 mm
Height of centre of rail base (h_1)	137 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



RHEDA 2000® B 355.3 - DFC

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	61 l
Weight (without fastenings)	161 kg
Length (L)	2509 mm
Width (W)	285 mm
Sleeper height (H)	202 mm
Height of centre of rail base (h_1)	137 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper

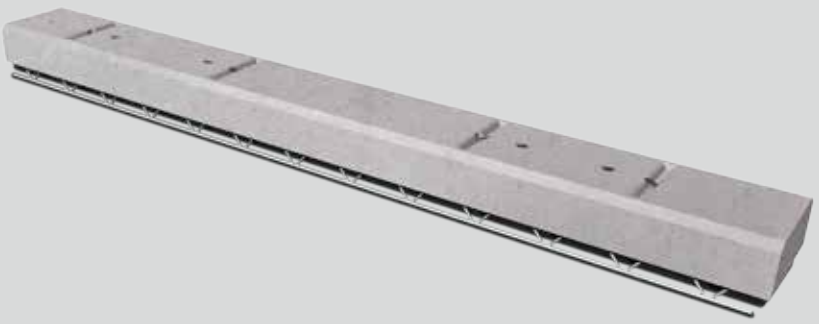


RHEDA 2000® GWS 05

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	38 l/m
Weight (without fastenings)	105 kg/m
Length (L)	800...4700 mm
Width (W)	293 mm
Sleeper height (H)	183 mm
Height of centre of rail base (h_1)	135 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Turnout sleeper

RHEDA 2000® GWS 05 300W

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	350 km/h
Concrete grade	C 50/60
Concrete volume	38 l/m
Weight (without fastenings)	105 kg/m
Length (L)	800...4700 mm
Width (W)	293 mm
Sleeper height (H)	183 mm
Height of centre of rail base (h_1)	135 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Turnout sleeper



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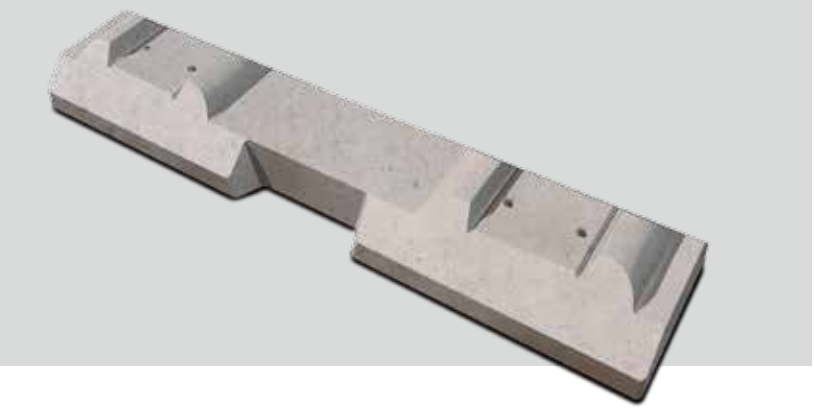
GETRAC® A1* B 316

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	147 l
Weight (without fastenings)	358 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	273.5 mm
Height of centre of rail base (h_1)	217 mm
Height of sleeper centre (h_2)	190 mm
Support surface (total)	6868 cm²
Standard application	Main-track sleeper

GETRAC® A3* BBS 3

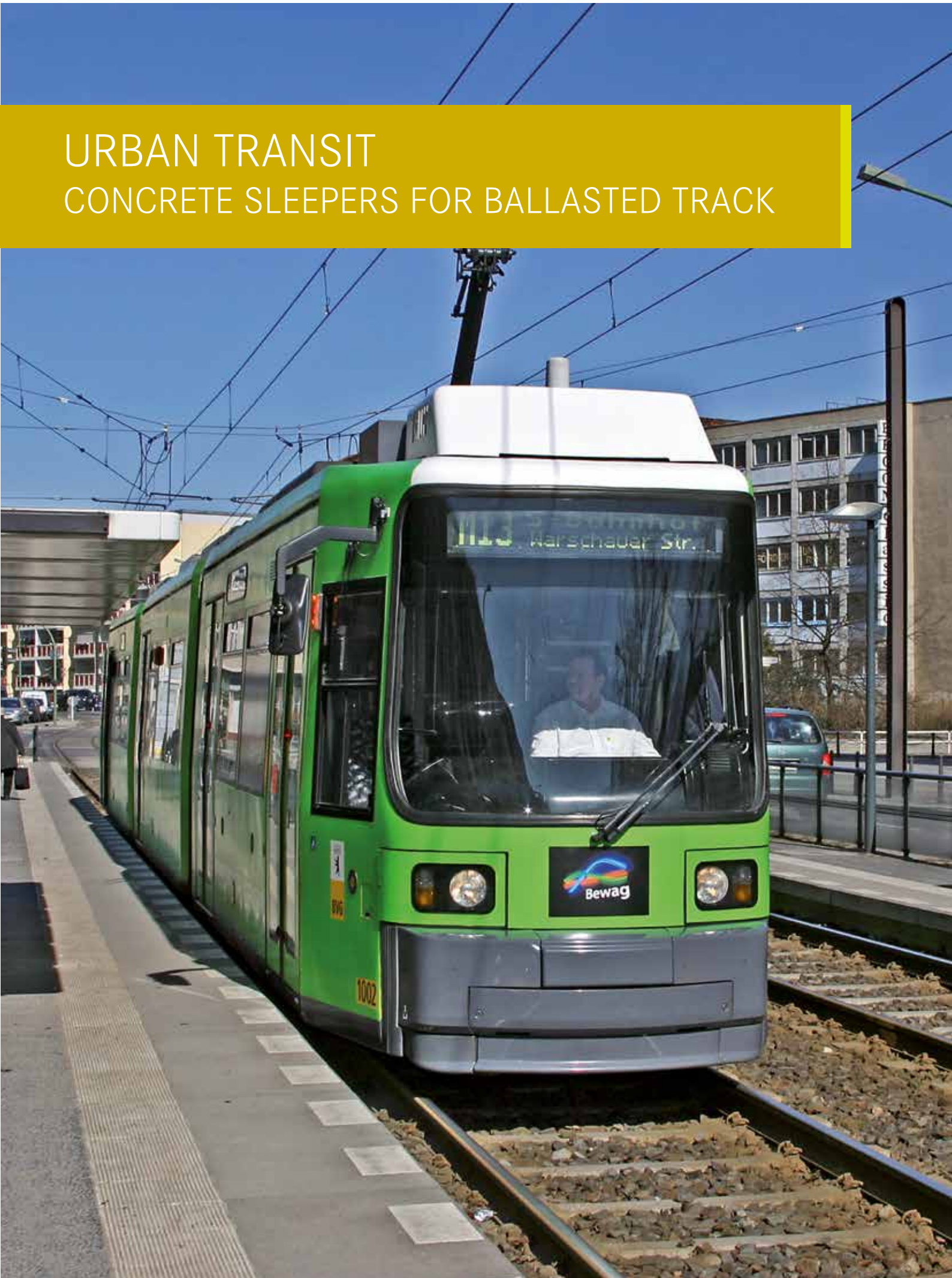
Parameters	Unit
Permissible axle loads	25 t
Maximum speed	250 km/h
Concrete grade	C 50/60
Concrete volume	228 l
Weight (without fastenings)	547 kg
Length (L)	2400 mm
Width (W)	570 mm
Sleeper height (H)	273.5 mm
Height of centre of rail base (h_1)	217 mm
Height of sleeper centre (h_2)	190 mm
Support surface (total)	11316 cm²
Standard application	Main-track-sleeper



*Can be implemented with W or U groove

RAIL.ONE

URBAN TRANSIT
CONCRETE SLEEPERS FOR BALLASTED TRACK

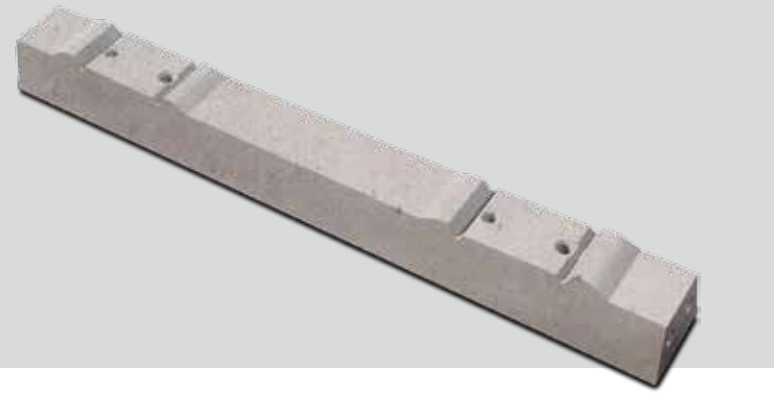


GERMANY B 58

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	160 km/h
Concrete grade	C 50/60
Concrete volume	96 l
Weight (without fastenings)	235 kg
Length (L)	2400 mm
Width (W)	300 mm
Sleeper height (H)	212 mm
Height of centre of rail base (h_1)	193 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	6300 cm²
Standard application	Main-track sleeper

GERMANY LIS 12 (1000)

Parameters	Unit
Permissible axle loads	14 t
Maximum speed	< 100 km/h
Concrete grade	C 50/60
Concrete volume	52 l
Weight (without fastenings)	127 kg
Length (L)	1800 mm
Width (W)	220 mm
Sleeper height (H)	175 mm
Height of centre of rail base (h_1)	157 mm
Height of sleeper centre (h_2)	150 mm
Support surface (total)	3960 cm²
Standard application	Main-track sleeper



GERMANY LIS 27 (1435)

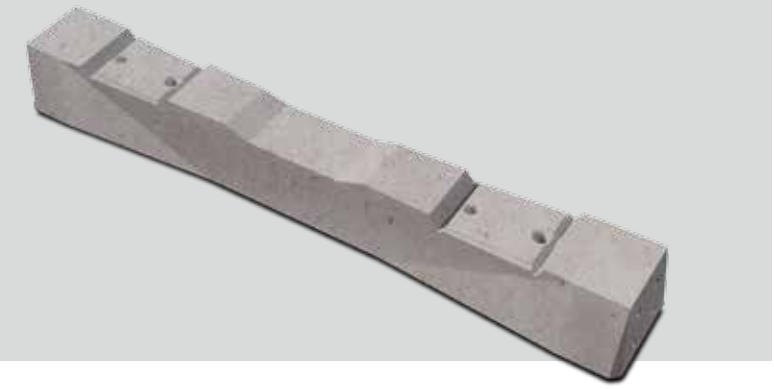
Parameters	Unit
Permissible axle loads	14 t
Maximum speed	< 100 km/h
Concrete grade	C 50/60
Concrete volume	76 l
Weight (without fastenings)	185 kg
Length (L)	2200 mm
Width (W)	250 mm
Sleeper height (H)	205 mm
Height of centre of rail base (h_1)	187 mm
Height of sleeper centre (h_2)	180 mm
Support surface (total)	4708 cm²
Standard application	Main-track sleeper

GERMANY LIS 27 - 3S

Parameters	Unit
Permissible axle loads	Gauge 1000 = 10 t; Gauge 1435 = 14 t
Maximum speed	< 100 km/h
Concrete grade	C 50/60
Concrete volume	78 l
Weight (without fastenings)	192 kg
Length (L)	2200 mm
Width (W)	250 mm
Sleeper height (H)	205 mm
Height of centre of rail base (h_1)	187 mm
Height of sleeper centre (h_2)	180 mm
Support surface (total)	4708 mm²
Standard application	Main-track sleeper

GERMANY TBS (750 – 1100)

Parameters	Unit
Permissible axle loads	14 t
Maximum speed	< 100 km/h
Concrete grade	C 50/60
Concrete volume	71 l
Weight (without fastenings)	175 kg
Length (L)	1800 mm
Width (W)	280 mm
Sleeper height (H)	205 mm
Height of centre of rail base (h_1)	187 mm
Height of sleeper centre (h_2)	180 mm
Support surface (total)	4325 cm²
Standard application	Main-track sleeper



GERMANY TBS (1435 – 1458)

Parameters	Unit
Permissible axle loads	14 t
Maximum speed	< 100 km/h
Concrete grade	C 50/60
Concrete volume	78 l
Weight (without fastenings)	190 kg
Length (L)	2200 mm
Width (W)	240 mm
Sleeper height (H)	205 mm
Height of centre of rail base (h_1)	185 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	4493 cm²
Standard application	Main-track sleeper

GERMANY RTB 220/3S

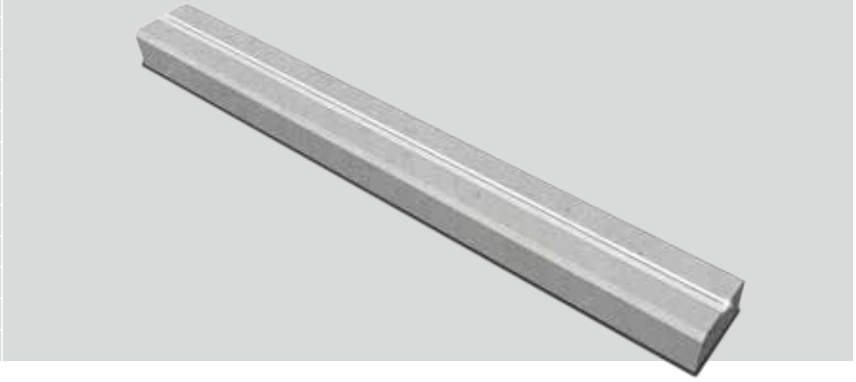
Parameters	Unit
Permissible axle loads	14 t
Maximum speed	< 100 km/h
Concrete grade	C 50/60
Concrete volume	97 l
Weight (without fastenings)	243 kg
Length (L)	2200 mm
Width (W)	300 mm
Sleeper height (H)	236 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	5640 cm²
Standard application	Main-track sleeper

GERMANY TURNOUT 160

Parameters	Unit
Permissible axle loads	12 t
Maximum speed	80 km/h
Concrete grade	C 50/60
Concrete volume	45 l/m
Weight (without fastenings)	111 kg/m
Length (L)	2300...4600 mm
Width (W)	294 mm
Sleeper height (H)	160 mm
Height of centre of rail base (h_1)	160 mm
Height of sleeper centre (h_2)	–
Support surface (total)	–
Standard application	Turnout sleeper

GERMANY TURNOUT 160 AS

Parameters	Unit
Permissible axle loads	12 t
Maximum speed	80 km/h
Concrete grade	C 50/60
Concrete volume	45 l/m
Weight (without fastenings)	112 kg/m
Length (L)	2300...4600 mm
Width (W)	294 mm
Sleeper height (H)	160 mm
Height of centre of rail base (h_1)	160 mm
Height of sleeper centre (h_2)	–
Support surface (total)	–
Standard application	Turnout sleeper



HUNGARY 10G

Parameters	Unit
Permissible axle loads	10 t
Maximum speed	80 km/h
Concrete grade	C 45/55
Concrete volume	37.5 l
Weight (without fastenings)	92 kg
Length (L)	1500 mm
Width (W)	200 mm
Sleeper height (H)	140 mm
Height of centre of rail base (h_1)	140 mm
Height of sleeper centre (h_2)	140 mm
Support surface (total)	3000 cm²
Standard application	Main-track sleeper
	for narrow gauges

HUNGARY LVA-40

Parameters	Unit
Permissible axle loads	22.5 t
Maximum speed	140 km/h
Concrete grade	C 50/60
Concrete volume	99.8 l/m
Weight (without fastenings)	245 kg/m
Length (L)	2420 mm
Width (W)	280 mm
Sleeper height (H)	190 mm
Height of centre of rail base (h_1)	181 mm
Height of sleeper centre (h_2)	150 mm
Support surface (total)	6776 mm
Standard application	Main-track sleeper

ROMANIA T00 -2.4

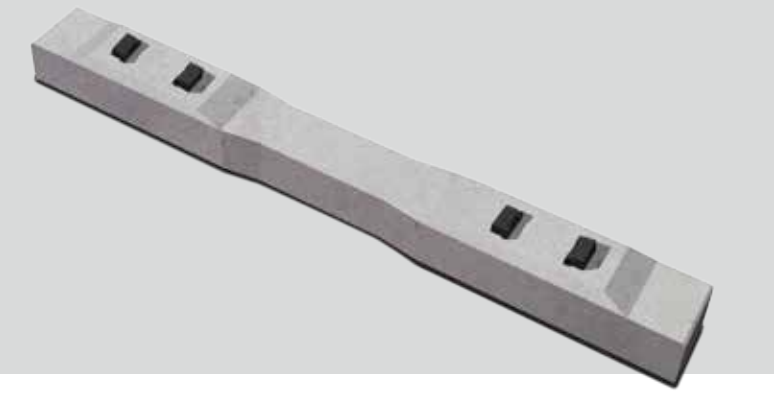
Parameters	Unit
Permissible axle loads	10 t
Maximum speed	80 km/h
Concrete grade	C 50/60
Concrete volume	97 l
Weight (without fastenings)	239 kg
Length (L)	2400 mm
Width (W)	300 mm
Sleeper height (H)	235 mm
Height of centre of rail base (h_1)	214 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	6200 cm²
Standard application	Main-track sleeper

ROMANIA B 58 W Ri180

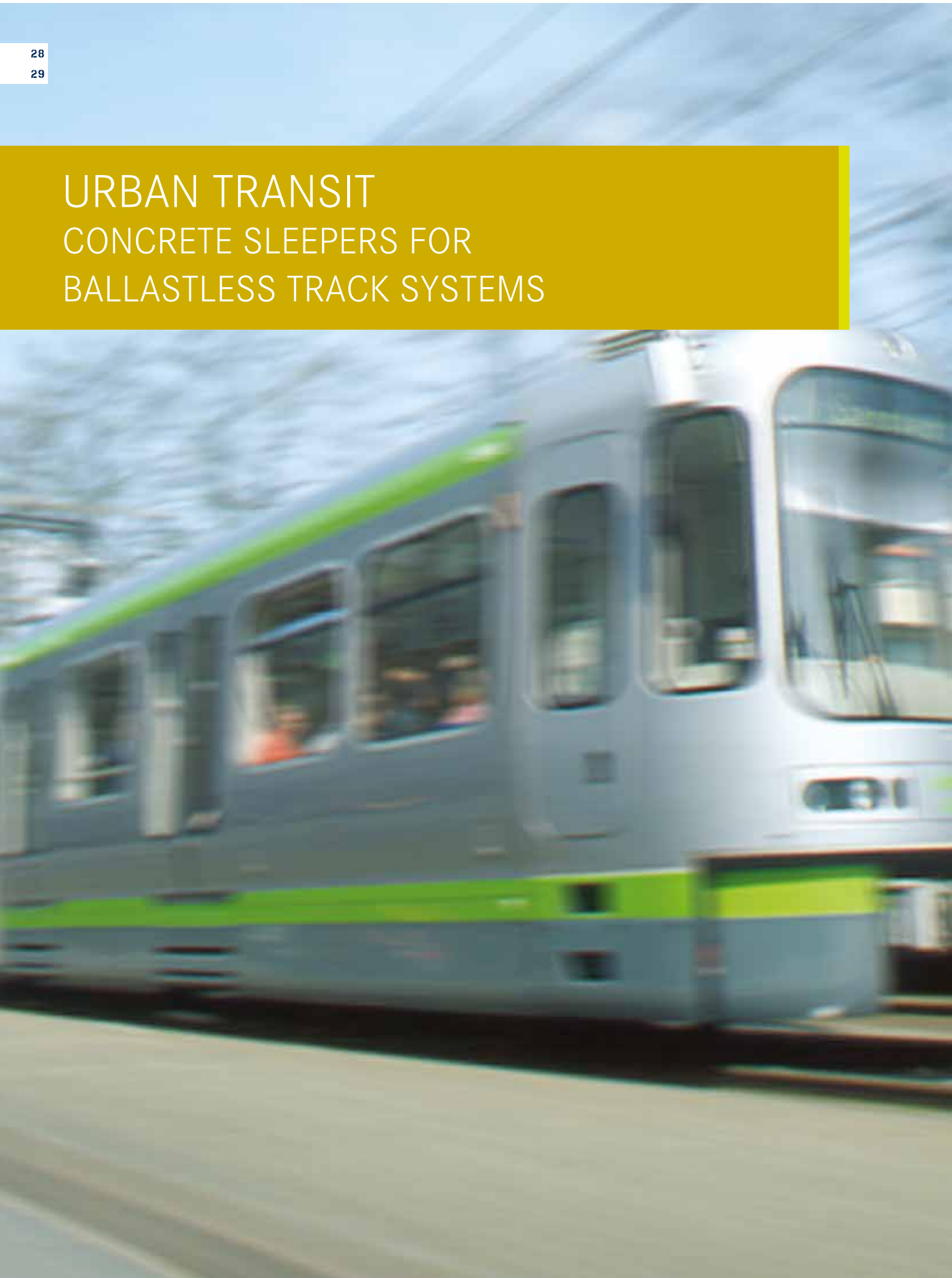
Parameters	Unit
Permissible axle loads	10 t
Maximum speed	80 km/h
Concrete grade	C 50/60
Concrete volume	97 l
Weight (without fastenings)	239 kg
Length (L)	2400 mm
Width (W)	300 mm
Sleeper height (H)	208 mm
Height of centre of rail base (h_1)	193 mm
Height of sleeper centre (h_2)	175 mm
Support surface (total)	6200 cm^2
Standard application	Main-track sleeper

USA LIT 36/4

Parameters	Unit
Permissible axle loads	20 t
Maximum speed	120 km/h
Concrete grade	C 50/60
Concrete volume	144 l
Weight (without fastenings)	352 kg
Length (L)	2600 mm
Width (W)	280 mm
Sleeper height (H)	248 mm
Height of centre of rail base (h_1)	190 mm
Height of sleeper centre (h_2)	241 mm
Support surface (total)	7045 mm
Standard application	Main-track sleeper

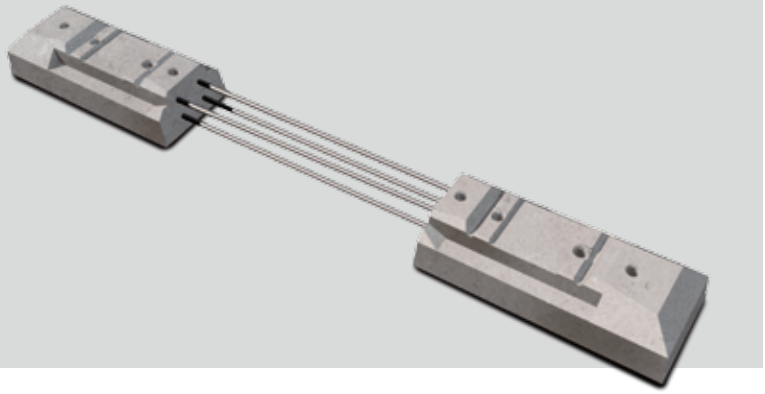


URBAN TRANSIT
CONCRETE SLEEPERS FOR BALLASTLESS TRACK SYSTEMS



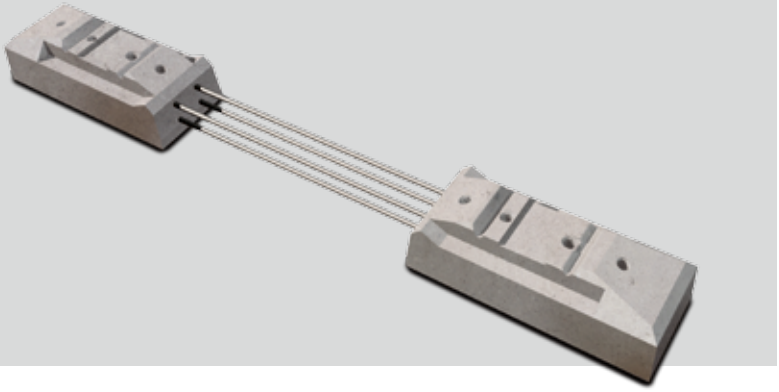
ATD-G | ATD-GG W Ri180

Parameters	Unit
Permissible axle loads	14 t
Maximum speed	80 km/h
Concrete grade	C 50/60
Concrete volume	55 l
Weight (without fastenings)	149 kg
Length (L)	2300 mm
Width (W)	296 mm
Sleeper height (H)	176 mm
Height of centre of rail base (h_1)	150 mm
Height of sleeper centre (h_2)	-
Support surface (total)	4144 cm²
Standard application	Main-track sleeper



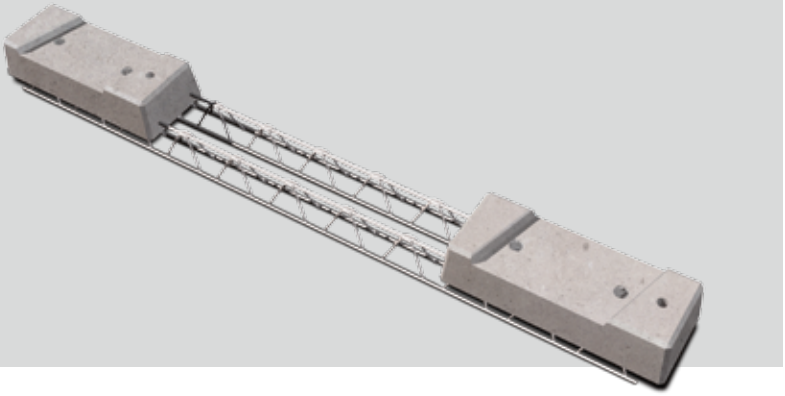
ATD-G | ATD-GG W49

Parameters	Unit
Permissible axle loads	14 t
Maximum speed	80 km/h
Concrete grade	C 50/60
Concrete volume	70 l
Weight (without fastenings)	185 kg
Length (L)	2300 mm
Width (W)	300 mm
Sleeper height (H)	210 mm
Height of centre of rail base (h_1)	181 mm
Height of sleeper centre (h_2)	-
Support surface (total)	4200 cm²
Standard application	Main-track sleeper



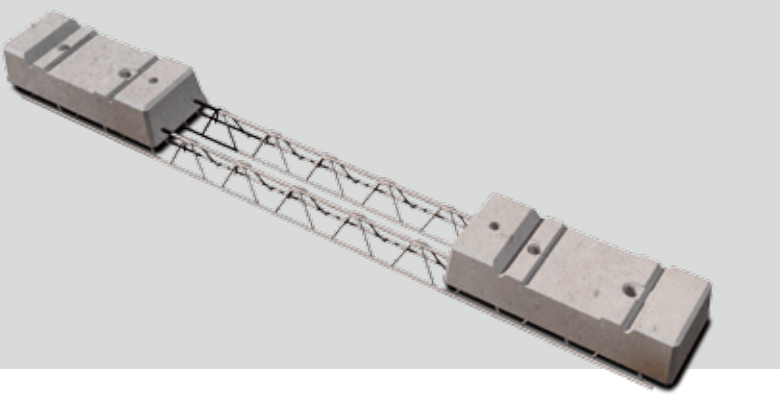
RHEDA CITY | TB/ZB SP

Parameters	Unit
Permissible axle loads	14 t
Maximum speed	80 km/h
Concrete grade	C 50/60
Concrete volume	26 l
Weight (without fastenings)	70 kg
Length (L)	According to track specification
Width (W)	230 mm
Sleeper height (H)	175 mm
Height of centre of rail base (h_1)	97 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



RHEDA CITY | TB/ZB W

Parameters	Unit
Permissible axle loads	14 t
Maximum speed	80 km/h
Concrete grade	C 50/60
Concrete volume	26 l
Weight (without fastenings)	70 kg
Length (L)	According to track specification
Width (W)	230 mm
Sleeper height (H)	175 mm
Height of centre of rail base (h_1)	97 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper



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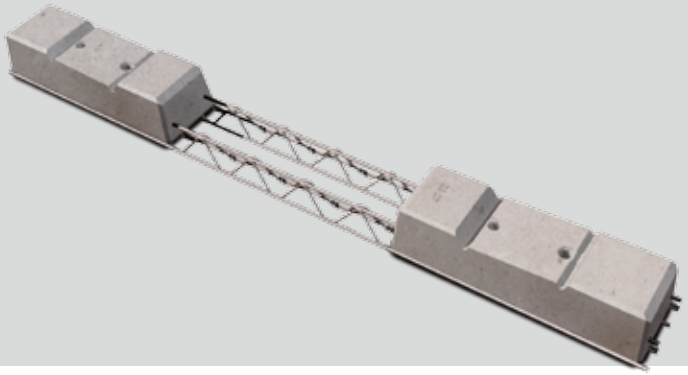
RHEDA RX* ZB 07

Parameters	Unit
Permissible axle loads	18 t
Maximum speed	160 km/h
Concrete grade	C 50/60
Concrete volume	45 l
Weight (without fastenings)	123 kg
Length (L)	2316 mm
Width (W)	230 mm
Sleeper height (H)	199 mm
Height of centre of rail base (h_1)	135 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Main-track sleeper

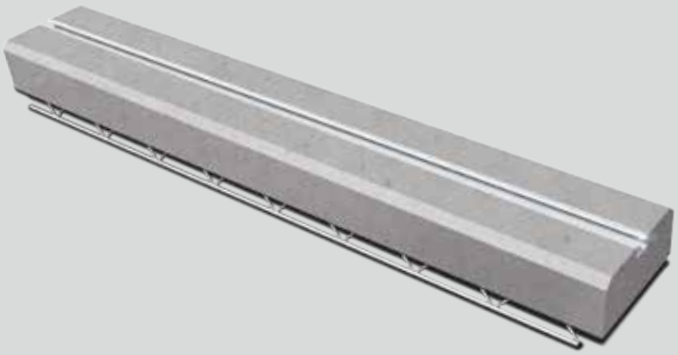


TURNOUT GWS 05

Parameters	Unit
Permissible axle loads	25 t
Maximum speed	100 km/h
Concrete grade	C 50/60
Concrete volume	38 l/m
Weight (without fastenings)	105 kg/m
Length (L)	800...4700 mm
Width (W)	293 mm
Sleeper height (H)	183 mm
Height of centre of rail base (h_1)	135 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Turnout sleeper

TURNOUT GWS 05 AS

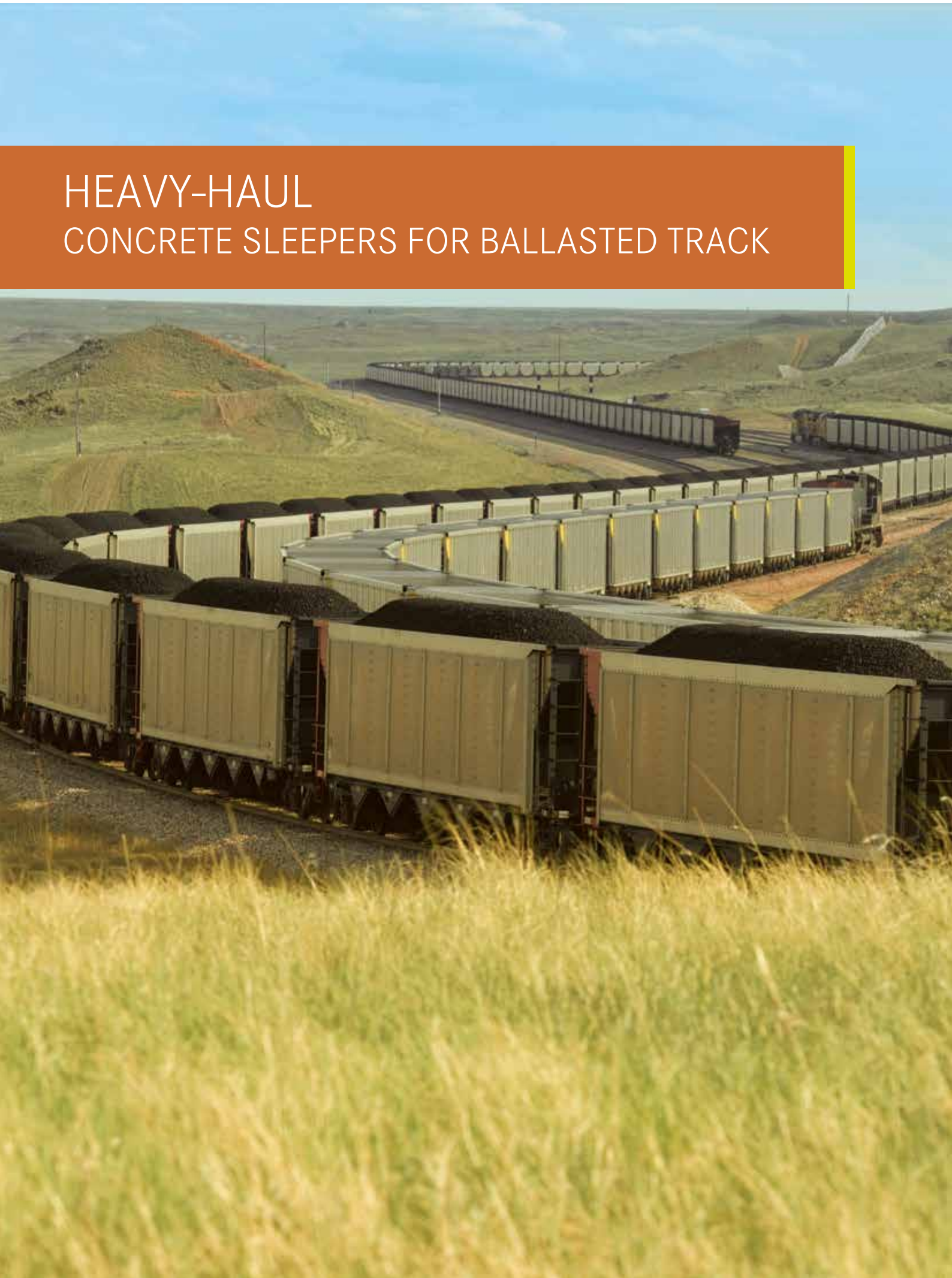
Parameters	Unit
Permissible axle loads	25 t
Maximum speed	100 km/h
Concrete grade	C 50/60
Concrete volume	38 l/m
Weight (without fastenings)	105 kg/m
Length (L)	800...4700 mm
Width (W)	293 mm
Sleeper height (H)	183 mm
Height of centre of rail base (h_1)	135 mm
Height of sleeper centre (h_2)	-
Support surface (total)	-
Standard application	Turnout sleeper



*Can be used with third rail

RAIL.ONE

HEAVY-HAUL
CONCRETE SLEEPERS FOR BALLASTED TRACK



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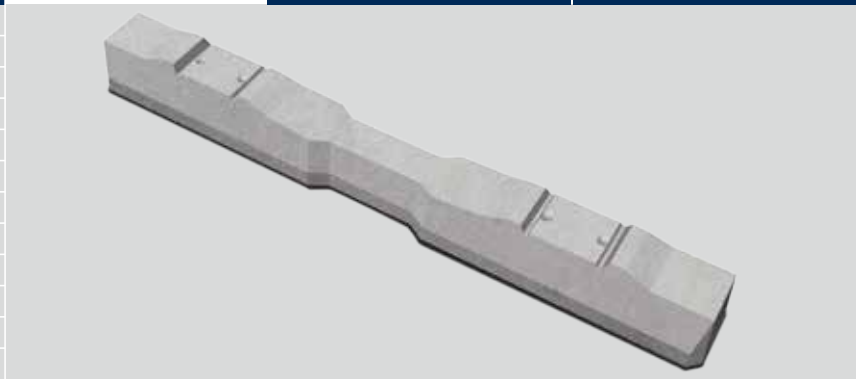
GERMANY B 01

Parameters	Unit
Permissible axle loads	30 t
Maximum speed	> 230 km/h
Concrete grade	C 50/60
Concrete volume	150 l
Weight (without fastenings)	370 kg
Length (L)	2600 mm
Width (W)	300 mm
Sleeper height (H)	228 mm
Height of centre of rail base (h_1)	223 mm
Height of sleeper centre (h_2)	188 mm
Support surface (total)	7800 cm²
Standard application	Heavy-haul sleeper

GERMANY RBS

Parameters	Unit
Permissible axle loads	36 t
Maximum speed	200 km/h
Concrete grade	C 50/60
Concrete volume	147 l
Weight (without fastenings)	384 kg
Length (L)	2603 mm
Width (W)	322 mm
Sleeper height (H)	249 mm
Height of centre of rail base (h_1)	225 mm
Height of sleeper centre (h_2)	190 mm
Support surface (total)	8006 mm
Standard application	Heavy-haul sleeper



GERMANY SK 40

Parameters	Unit
Permissible axle loads	40 t
Maximum speed	60 km/h
Concrete grade	C 50/60
Concrete volume	82 l
Weight (without fastenings)	205 kg
Length (L)	1200 mm
Width (W)	300 mm
Sleeper height (H)	260 mm
Height of centre of rail base (h_1)	250 mm
Height of sleeper centre (h_2)	250 mm
Support surface (total)	3600 cm²
Standard application	Heavy-haul sleeper

SAUDI ARABIA HHS 32.5/5

Parameters	Unit
Permissible axle loads	32.5 t
Maximum speed	110 km/h
Concrete grade	C 50/60
Concrete volume	144 l
Weight (without fastenings)	352 kg
Length (L)	2500 mm
Width (W)	280 mm
Sleeper height (H)	240 mm
Height of centre of rail base (h_1)	235 mm
Height of sleeper centre (h_2)	180 mm
Support surface (total)	7000 cm²
Standard application	Heavy-haul sleeper

SAUDI ARABIA | HHTS

Parameters	Unit
Permissible axle loads	32.5 t
Maximum speed	110 km/h
Concrete grade	C 50/60
Concrete volume	67.2 l/m
Weight (without fastenings)	165 kg/m
Length (L)	
Width (W)	301.5 mm
Sleeper height (H)	235 mm
Height of centre of rail base (h_1)	235 mm
Height of sleeper centre (h_2)	235 mm
Support surface (total)	3015 cm^2/m
Standard application	Heavy-haul turnout sleeper

USA | HHS 36/4

Parameters	Unit
Permissible axle loads	36 t
Maximum speed	40 km/h
Concrete grade	C 50/60
Concrete volume	144 l
Weight (without fastenings)	352 kg
Length (L)	2600 mm
Width (W)	280 mm
Sleeper height (H)	248 mm
Height of centre of rail base (h_1)	190 mm
Height of sleeper centre (h_2)	241 mm
Support surface (total)	7045 cm^2
Standard application	Heavy-haul sleeper

USA | HHS 36/6

Parameters	Unit
Permissible axle loads	36 t
Maximum speed	200 km/h
Concrete grade	C 50/60
Concrete volume	146 l
Weight (without fastenings)	358 kg
Length (L)	2600 mm
Width (W)	280 mm
Sleeper height (H)	248 mm
Height of centre of rail base (h_1)	241 mm
Height of sleeper centre (h_2)	190 mm
Support surface (total)	7227 cm^2
Standard application	Heavy-haul sleeper

RAIL.ONE – YOUR ONE-STOP PROVIDER

We offer a broad portfolio of products and services involving all aspects of railways and infrastructure, tailored to individual requirements.

RAILWAYS

For construction of track systems and for the upgrading of existing rail lines, RAIL.ONE develops track solutions individually matched to the customer's requirements: and RAIL.ONE offers all these services on a one-stop basis. In the field of high-speed railways, patented RHEDA 2000® ballastless track technology has already achieved an internationally leading position. RHEDA 2000® has developed into standard technology for mainline routes with high-speed transport and heavy-haul conditions. In the classical market segment for monoblock sleepers as well, RAIL.ONE offers a unique product portfolio for all requirements.

URBAN TRANSIT

Underground, surface, and tram rapid transit not only relieves metropolitan areas from the burdens of private vehicle traffic and assures tolerable living conditions in residential regions: it also contributes appreciably to reduction of emissions and energy consumption. For track installation on concrete, ballast, or asphalt, RAIL.ONE offers high-performance and reliable railway systems that are optimally integrated into their surroundings.

FREIGHT AND HEAVY-HAUL

With high energy prices and increased demand for raw materials, freight and heavy-haul railway transport has assumed a key function in intermodal competition. For these exceptional demands placed on track technology, RAIL.ONE has developed special concrete sleepers designed for static axle loads up to more than 40 metric tonnes.

ENGINEERING

Requirements placed on the cost effectiveness of advanced track systems have become more demanding: engineering innovations are expected to assure the quality and the productivity of the overall system. Low maintenance expense and reduction of life-cycle costs will become increasingly important. For planning of all solutions for rail lines – whether at grade, over bridges, or in tunnels – RAIL.ONE engineers effectively adapt overall track design to local requirements: from the design development phase up to detailed planning.

SLEEPER PLANTS

RAIL.ONE is the only planner and builder of track production plants to offer a choice among four specific production processes – which, in addition, can be modified according to special requirements. This combination of plant-facilities engineering and production expertise further guarantees the high quality standard required for all customers.

ENGINEERED BY RAIL.ONE

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