

# REFERENCES

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## Ballastless track projects for Long-distance Transport & Urban Transit

System	Project	Length (m)	Year
<b>RHEDA 2000®</b>	Follo-Line-Tunnel, Oslo – Ski (Norway)	2 x 20,000	2019-
	Floen-Arna-Tunnel, Bergen (incl. mass-spring-system) (Norway)	6,900	2019-20
	Stuttgart 21, Ulm – Wendlingen (incl. mass-spring-system), (Germany)	55,000 + 10,500 lin. M turnout	2018-20
	Rapur-Tunnel, Andra Pradesh (India)	6,600	2018-19
	Tunnel Pforzheim (incl. mass-spring-system) (Germany)	2,200	2017-18
	Sliding Platform Hamburg Port (Germany)	250	2017
	Israel, Line A1 (Israel)	2,462	2016-17
	Hanau – Nantenbach (Germany)	2 x 6,000	2016-17
	Tithorea – Domokos Transition Sleeper (Greece)	732	2016
	Othrys / Kallidromos (Greece)	33,000	2015-16
	Kaiser-Wilhelm-Tunnel (Germany)	4,000	2015-16
	Old Bebenroth Tunnel (Germany)	1,000	2015
	Madrid, Metro Line 7, Station San Blas – Simancas (Spain)	190	2015
	Acton Diveunder London (Great Britain)	2 x 370	2014-15
	RWE track scale (Germany)	5 x 45	2014-15
	Borders Railway Bowshank Tunnel (Great Britain)	2 x 226	2014
	Riyadh Metro (Saudi-Arabia)	8,750	2013-18
	Granada (Spain)	4,669	2013-14

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System	Project	Length (m)	Year
<b>RHEDA 2000®</b> <b>(continuation)</b>	Mecca – Medina, Haramain-line (Saudi Arabia)	2 x 80,000	2012-18
	Berlin – Munich Nuremberg – Ebensfeld – Erfurt – Leipzig / Halle (VDE 8.1 and 8.2) (Germany)	44,800 lin. M.	2012-14
	Seoul – Mokpo, between Osong – Mokpo, Honam-Line (South-Korea)	2 x 230,000 6,730 lin. M.	2012-14
	Old-Schluechterner-Tunnel / between Frankfurt – Göttingen (Germany)	3,600	2012-13
	Bebenroth Tunnel between Goettingen – Bebra (Germany)	1,074	2012
	Tunnel Turecký from Nove Mesto nad Vahom – Púchov (Slovakia)	2 x 2,280	2011-12
	Busch-Tunnel Aachen (Germany)	2 x 700	2011
	ESAP Metro Athens (Greece)	33,000	2009-11
	Southampton Tunnel (Great Britain)	2 x 550	2009-10
	Leipzig City Tunnel (Germany)	2 x 4,000	2009-10
	Railway Connection Eje Atlántico, different tunnel projects (Spain): Meirama Bregua Cerceda Meirama	2 x 1,800 2 x 3,000	2009
	Several tunnel projects on the High Speed Line Madrid – Valencia (Spain): Hoyo de Roda Umbria de los molinos Villalgordo del Cabriel Cabrera Buñol Torrent	2 x 2,000 2 x 1,500 2 x 3,300 2 x 7,200 2 x 1,900 2 x 3,000	2009
	Hampstead Heath Tunnel (Great Britain)	2 x 1,044	2008
	Seoul, Extension of the Metro line 3 (South-Korea)	2 x 3,000	2008-09

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System	Project	Length (m)	Year
<b>RHEDA 2000® (continuation)</b>	High Speed Line Seoul – Busan, 2 <sup>nd</sup> Section (Kyungbu-Line, 2 <sup>nd</sup> stage), (South-Korea)	2 x 110,500	2007-10
	High Speed Line Wuhan – Guangzhou, Passenger Dedicated Line (China)	2 x 980,000	2007-10
	Perpignan – Figueras (France / Spain)	2 x 4,500	2007-08
	Railway Connection Udampur – Katra (India)	10,000	2007-08
	Cologne, Mühlheim – Deutz (Germany)	2 x 300	2007
	Madrid – Barcelona, Tunnel Sant Joan Despí (Spain)	2 x 15,000	2007
	Madrid – Valladolid, Tunnel San Pedro (Spain)	2 x 12,000	2007
	Wuhan – Guangzhou, Pilot Track (China)	2 x 10,000	2007
	Eje Atlántico, different tunnel projects (Spain)	2 x 8,000	2006-07
	Guadarrama Tunnel (Spain)	2 x 30,000	2006-07
	Rudoltice – Trebovice (Czech Republic)	2 x 444	2005
	City railroad Tunnel Unterfoehring/Munich (Germany)	2 x 1,400	2005
	Esslingerberg-Tunnel (Germany)	2 x 13	2004
	Project underground transit system Circle Line CCL (Singapore)	20,000	2004-08
	Taipei – Kaohsiung (Taiwan)	88,000	2004-06
	North-South Link (Germany)	9,800	2004-05
	Railway Bridge Ul. Wielicka Krakow – Tarnow-Line (Poland)	2 x 18	2003
	Nuremberg – Ingolstadt, Section Fischbach/Feucht (Germany)	2 x 2,100	2003
	Hibel Road Tunnel (Great Britain)	2 x 350	2003

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System	Project	Length (m)	Year
<b>RHEDA 2000®</b> <b>(continuation)</b>	Prestbury-Tunnel (Great Britain)	2 x 513	2003
	Amsterdam – Brussels, HSL Zuid (Netherlands)	2 x 80,000	2002-06
	Lehrter Bahnhof / New Berlin Main Station (Germany)	4 Turnouts	2002
	Las Palmas – Ourepesa (Spain)	2 x 430	2002
	Franz-Mett-Strasse Berlin (Germany)	120	2002
	Underground Berlin / Line 2 (Germany)	195	2001
	New Connection between Erfurt – Halle / Leipzig, Section Grosskugel (Germany)	2 x 3,000	2001
	High Speed Line Cologne – Frankfurt Airport, Lot B (Germany)	2 x 95,000	1999-02
	Railway Connection Erfurt – Leipzig / Halle, Section Schkeuditz (Germany)	2 x 13,500	1999-00
	Upgraded Railway Connection Leipzig – Erfurt, Section Leislingen – Naumburg (Germany)	2 x 1,260	1997
	Renewal of Track on the Berlin City Railways (Germany)	4 x 8,800	1996-97
	High Speed Line Hannover – Berlin, Section, Zoo - Berlin Main Station (Germany)	4 x 8,000	1995-97
	Railway Connection Halle/S – Gunthershausen, Section Gotha Leinakanal (Germany)	2 x 1,490	1994
	Railway Connection Wuerzburg – Frankfurt/M., Section Nantenbach Curve (Germany)	2 x 7,240	1993
<b>BI-SM</b>	Pedralba – Ourense (Spain)	14,000	2018-19
<b>BM-SM</b>	La Robla – Campomanes (Spain)	17,000	2018-19

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System	Project	Length (m)	Year
<b>GETRAC® A1</b>  (asphalt based ballastless track system)	Nuremberg port (Germany)	366	2010
	Railway Project Wengi – Frutigen (Switzerland)	700	2004
	Lossetalbahn / Kassel (Germany)	650	2003
	Las Palmas – Ourepesa (Spain)	2 x 435	2002
	Railway Connection Hannover – Berlin, Section Berlin Westkreuz-Ruhleben (Germany)	2 x 3,515	1994-95
<b>GETRAC® A3</b>  (asphalt based ballastless track system)	Railway Connection Hohenturm – Peissen (Germany)	4,698	2016-17
	Railway Connection Lehmsief, Line Stolberg – Herzogenrath (Germany)	280	2015-16
	New Schlüchterner Tunnel with trafficability (Germany)	4,080	2014-15
	Old-Mainz-Tunnel (Germany)	2 x 900	2009
	Schluechterner Tunnel / Railway Line Frankfurt – Goettingen (Germany)	7,571	2008-10
	Brandleite-Tunnel / Railway Line Erfurt – Wuerzburg (Germany)	2 x 3,600	2005
	Esslingerberg-Tunnel / Treuchtlingen (Germany)	2 x 700	2004
	Heiligenberg-Tunnel (Germany)	2 x 1,300	2001-02
	Kehre-Tunnel (Germany)	2 x 300	2001

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System	Project	Length (m)	Year
<b>RHEDA CITY</b> <b>(installed flush with the street surface)</b>	Weinheim (Germany)	643	2018-19
	Bern (Switzerland)	388	2018-19
	Poznan (Poland)	80	2018
	Gera (Germany)	225	2018
	Tampere (Finland)	5,600	2017-19
	Palembang (Indonesia)	23,400	2017-18
	Ratingen (Germany)	653	2017
	Dessau (Germany)	1,671	2017
	Bad Duerkheim (Germany)	30	2017
	Chemnitz (Germany)	3,340	2015-20
	Bergen (Norway)	619	2015
	Bochum (Germany)	205	2015
	Doha (Qatar)	16,959	2014-18
	Mainz (Germany)	744	2014-17
	Basel (Switzerland)	303	2014
	Birmingham (Great Britain)	427	2013-14
	Sosnowiec (Poland)	2,253	2013-14
	Champocologno (Switzerland)	113	2013
	Utrecht (Netherlands)	5,360	2012-20
	Augsburg (Germany)	5,638	2012-20

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System	Project	Length (m)	Year
<b>RHEDA CITY</b>  (installed flush with the street surface; continuation)	Heilbronn (Germany)	2,819	2012-13
	Radebeul (Germany)	3,401	2012-20
	Stuttgart (Germany), industrial tracks	97	2012
	Dublin (Ireland), industrial tracks	1,906	2011-13
	Pilsen (Czech Republic)	372	2011-12
	Samedan (Switzerland)	273	2011
	Tirano (Italy)	144	2011
	Prague (Czech Republic)	120	2011
	Ruedersdorf/ Schoeneiche (Germany)	1,059	2010-18
	Woltersdorf (Germany)	1,597	2010-19
	Runkel Industrial Tracks (Germany)	517	2010
	Schoeneiche (Germany)	105	2010
	Frankfurt (Germany)	2,693	2009-20
	Dublin (Ireland)	9,665	2009-17
	Arlesheim / Dornach (Switzerland)	150	2009
	Neuss (Germany)	60	2009
	Reinach (Switzerland)	615	2009
	Sevilla (Spain)	16,968	2009
	Leipzig (Germany)	11,274	2008-20



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System	Project	Length (m)	Year
<b>RHEDA CITY</b>  <b>(installed flush with the street surface; continuation)</b>	Potsdam (Germany)	3,990	2008-20
	Edinburgh (Great Britain)	8,454	2008-13
	Wuerzburg (Germany)	135	2008-11
	Munich (Germany)	3.130	2008-09
	Warsaw (Poland)	34,086	2007-20
	Kassel (Germany)	881	2007-12
	Croydon (Great Britain)	142	2007-09
	Bonn (Germany)	328	2007-08
	Schwerin (Germany)	1,109	2006-17
	Bucharest (Romania)	12,480	2006-07
	The Hague (Netherlands)	2,335	2006-07
	Chur (Switzerland)	1,700	2005-10
	Saarbruecken (Germany)	3,820	2005-07
	Heidelberg (Germany)	10,636	2004-20
	Magdeburg (Germany)	6,365	2004-20
	Nantes (France)	1,440	2004-05
Karlsruhe (Germany)	13,501	2003-20	
Cologne (Germany)	5,875	2003-19	
Schriesheim (Germany)	371	2003-12	

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System	Project	Length (m)	Year	
<b>RHEDA CITY</b>  <b>(installed flush with the street surface; continuation)</b>	Ludwigshafen (Germany)	6,728	2002-20	
	Mannheim (Germany)	24,508	2002-20	
	Nuremberg (Germany)	22,706	2002-20	
	Aken (Germany), port track for inland port	610	2002-03	
	Dusseldorf (Germany)	1,454	2002	
	Essen (Germany)	235	2002	
	Bremen (Germany)	910	2001	
	Braunschweig (Germany)	3,404	2000-18	
	Hannover (Germany)	6,294	1999-20	
	Berlin (Germany)	85,055	1998-20	
	Dresden (Germany)	76,244	1998-20	
	<b>RHEDA CITY</b> <b>“Green”</b>	Augsburg (Germany)	3,625	2020
		Dresden (Germany)	188	2020
Faliron (Greece)		3,800	2020	
Hemmingen (Germany)		641	2020	
Amsterdam (Netherlands)		3,700	2018-19	
Tampere (Finland)		5,300	2018-19	
Nordhausen (Germany)		311	2019	
Magdeburg (Germany)	1,919	2018		

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System	Project	Length (m)	Year
<b>RHEDA CITY “Green” (continuation)</b>	Weinheim (Germany)	1,381	2018
	Stuttgart (Germany)	26	2017
	Ratingen (Germany)	49	2017
	Utrecht (Netherlands)	2,930	2017
	Nuremberg (Germany)	145	2016
	Hannover (Germany)	2,493	2016-20
	Heidelberg (Germany)	5,993	2016-20
	Doha (Qatar)	1,076	2014-17
	Frankfurt (Germany)	512	2014
	Chemnitz (Germany)	200	2014-20
	Warsaw (Poland)	11,039	2011-20
	Edinburgh (Great Britain)	10,588	2009-14
	Reinach (Switzerland)	840	2009
	Ludwigshafen (Germany)	536	2009
	The Hague (Netherlands)	1,135	2006-07
	Mannheim (Germany)	13,955	2005-20
	Berlin (Germany)	51,181	2004-20
	Karlsruhe (Germany)	22,244	2003-20
	Cologne (Germany)	4,010	2001-22

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## Selected Ballasted Track Projects

System	Project	Pieces	Year
<b>B 07</b>	Mannheim – Stuttgart (Germany)	50,015	2020
	Hannover – Göttingen (Germany)	75,000	2018-19
	Göttingen – Fulda (Germany)	5,430	2018
	Mühlacker (Germany)	4,090	2015
	VDE 8.1, Nuremberg – Ebensfelde (Germany)	23,415	2014-16
<b>AR 06</b>	CTW140&130 Yapi Merkerzi construction & industry co (Saudi Arabia)	125,116	2017-19
	CTW120 Al Omaier trading & contracting co (Saudi Arabia)	189,880	2017-18
	CTW320 Al Ayuni investment & contracting co (Saudi Arabia)	300,000	2016-17
	SRLF POSCO E&C Saudi Arabia	13,879	2016
	CTW110 Saudi Bin Ladin Group (SBG) (Saudi Arabia)	164,000	2015-20
	CTW400 Al Ayuni investment & contracting co (Saudi Arabia)	753,860	2011-12
	CTW200 China Railway 18th Bureau (Saudi Arabia)	846,000	2008-11
<b>B 70</b>	Karaman – Ulukışla (İntekar) (Turkey)	94,699	2017-19
	Multiple projects (Germany)	22 mio.	1970-
<b>AM</b>	Martorell (Spain)	11,189	2019-20
<b>PR 01</b>	Castuera (Spain)	31,730	2019-20
<b>LW</b>	Rákos – Gödöllő (Hungary)	58,450	2020
	Kelenföld – Százhalombatta (Hungary)	25,050	2019
<b>LW, LM-S</b>	Százhalombatta – Pusztaszabolcs (Hungary)	66,800	2020
<b>LM-S</b>	Szeged – Hódmezővásárhely (Hungary)	33,400	2020
<b>UP 15</b>	Various projects (USA)	>1,000,000	2014-19

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