

REFERENCES



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Ballastless track projects for Long-distance Transport & Urban Transit

System	Project	Length (m)	Year
RHEDA 2000®	Koper – Divaca (Slovenia)	23,335	2024-25
	Stuttgart 21 (Germany)	2 x 22,500 +27,930 lin. M turnout	2021-25
	Didwana – Lalsot (India)	2,000	2024
	Metropolitan Express Railway Great Train eXpress - Line A (South Korea)	2 x 4,900	2022-24
	Hongsung – Songsan (South Korea)	90,100	2021-24
	Udhampur – Srinagar – Baramulla Rail Link Project (India)	34,600	2021-24
	Dodam – Youngcheon (South Korea)	145,100	2020-23
	Etihad (UAE)	6,950	2021-22
	Stuttgart 21, Ulm – Wendlingen (incl. mass-spring system), (Germany)	2 x 55,000 + 11,000 lin. m turnout	2018-22
	Cortanovci Tunnel (Serbia)	2,300	2020
	Follo Line Tunnel, Oslo – Ski (Norway)	2 x 20,000	2019-20
	Floen-Arna Tunnel, Bergen (incl. mass-spring system) (Norway)	6,900	2019-20
	Rapur Tunnel, Andra Pradesh (India)	6,600	2018-19
	Tunnel Pforzheim (incl. mass-spring system) (Germany)	2,200	2017-18
	Riyadh Metro (Saudi Arabia)	8,750	2013-18
	Transfer table Hamburg harbor (Germany)	250	2017
	Israel, Line A1 (Israel)	2,462	2016-17

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System	Project	Length (m)	Year
RHEDA 2000® (Continuation)	Hanau – Nantenbach (Germany)	2 x 6,000	2016-17
	Tithorea – Domokos (Greece)	732	2016
	Othrys / Kallidromos (Greece)	33,000	2015-16
	Kaiser Wilhelm Tunnel (Germany)	4,000	2015-16
	Alter-Bebenroth-Tunnel (Germany)	1,000	2015
	Madrid, Metro line 7, San Blas - Simancas station (Spain)	190	2015
	Acton Diveunder London (Great Britain)	2 x 370	2014-15
	RWE Gleiswaage (Germany)	5 x 45	2014-15
	Borders Railway: Bowshank Tunnel (Great Britain)	2 x 226	2014
	Granada (Spain)	4,669	2013-14
	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. turnout	2012-14
	Seoul - Mokpo, between Osong - Mokpo, Honam Line (South Korea)	2 x 230,000 + 6,730 lin. m. turnout	2012-14
	Alter-Schlüchterner-Tunnel / between Frankfurt - Göttingen (Germany)	3,600	2012-13
	Bebenroth Tunnel, Goettingen – Bebra line (Germany)	1,074	2012
	Turecký Tunnel, Nove Mesto nad Vahom – Púchov line (Slovakia)	2 x 2,280	2011-12
	Busch Tunnel Aachen (Germany)	2 x 700	2011
	ESAP Metro Athens (Greece)	33,000	2009-11

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System	Project	Length (m)	Year
RHEDA 2000® (Continuation)	Southampton Tunnel (Great Britain)	2 x 550	2009-10
	City-Tunnel Leipzig (Germany)	2 x 4,000	2009-10
	Eje Atlántico rail link, various tunnel projects (Spain): Meirama Bregua Cerceda Meirama	2 x 1,800 2 x 3,000	2009
	Various tunnel projects on the Madrid - Valencia high-speed line (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
	Seoul, extension of metro line 3 (South Korea)	2 x 3,000	2008-09
	Hampstead Heath Tunnel (Great Britain)	2 x 1,044	2008
	High-speed line Seoul – Busan, 2nd section (Kyungbu Line, Phase 2), (South Korea)	2 x 110,500	2007-10
	High-speed line for long-distance passenger transportation Wuhan - Guangzhou, (China)	2 x 980,000	2007-10
	Perpignan – Figueras (France / Spain)	2 x 4,500	2007-08
	Udhampur – Katra (India)	10,000	2007-08
	Metro Circle Line CCL (Singapore)	20,000	2004-08
	Cologne, Mühlheim – Deutz (Germany)	2 x 300	2007
	Madrid - Barcelona, Sant Joan Despí Tunnel (Spain)	2 x 15,000	2007
	Madrid - Valladolid, San Pedro Tunnel (Spain)	2 x 12,000	2007
	Wuhan - Guangzhou, test track (China)	2 x 10,000	2007

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System	Project	Length (m)	Year
RHEDA 2000® (Continuation)	Eje Atlántico, various tunnel projects (Spain)	2 x 8,000	2006-07
	Guadarrama Tunnel (Spain)	2 x 30,000	2006-07
	Taipei – Kaohsiung (Taiwan)	88,000	2004-06
	Amsterdam - Brussels, HSL Zuid (Netherlands)	2 x 80,000	2002-06
	Nuremberg – Ingolstadt (Germany)	2 x 36,000	2004-06
	Rudoltice – Trebovice (Czech Republic)	2 x 444	2005
	S-Bahn tunnel Unterföhring/Munich (Germany)	2 x 1,400	2005
	North-South connection (Germany)	9,800	2004-05
	Esslingerberg Tunnel (Germany)	2 x 13	2004
	Railroad bridge Ul, Wielicka Krakow – Tarnow Line (Poland)	2 x 18	2003
	Nuremberg – Ingolstadt, Fischbach/Feucht section, connecting track on high-speed line (Germany)	2 x 2,100	2003
	Hibel Road Tunnel (Great Britain)	2 x 350	2003
	Prestbury Tunnel (Great Britain)	2 x 513	2003
	Lehrter Bahnhof / New Berlin Central Station (Germany)	4 points	2002
	Les Palmas – Ourepesa (Spain)	2 x 430	2002
	Franz-Mett-Strasse Berlin (Germany)	120	2002
	High-speed line Cologne – Frankfurt Airport, Lot B (Germany)	2 x 95,000	1999-02
	Erfurt - Halle / Leipzig connecting line, Grosskugel section (Germany)	2 x 3,000	2001

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System	Project	Length (m)	Year
RHEDA 2000® (Continuation)	Metro Berlin / Line 2 (Germany)	195	2001
	Erfurt - Leipzig / Halle, Schkeuditz section (Germany)	2 x 13,500	1999-00
	Line renewal Leipzig – Erfurt, section Leislingen – Naumburg (Germany)	2 x 1,260	1997
	Renewal of the light rail arches Berlin (Germany)	4 x 8,800	1996-97
	High-speed line Hanover - Berlin. section, Zoo-Berlin Central Station (Germany)	4 x 8,000	1995-97
	Connection Halle/S – Gunthershausen, section Gotha Leinakanal (Germany)	2 x 1,490	1994
	Würzburg - Frankfurt/M., section Nantenbacher Kurve (Germany)	2 x 7,240	1993
BI-SM	Pedralba - Ourense (Spain)	14,000	2018-19
BM-SM	Various tunnel projects "Castellbisbal" (Spain)		
	Martorell Tunnel	4,584	2019-20
	Castellbisbal Tunnel	3,271	2019-21
	Costa Blanca Tunnel	1160	2019
	Paso Bajo la AP7	75	2019
	La Robla – Campomanes (Spain)	17,000	2018-19
GETRAC® A1 (asphalt-based slab track system)	Nuremberg Port (Germany)	366	2010
	Wengi – Frutigen (Switzerland)	700	2004
	Lossetalbahn / Kassel (Germany)	650	2003
	Las Palmas – Ourepesa (Spain)	2 x 435	2002
	Hanover – Berlin. section Berlin Westkreuz-Ruhleben (Germany)	2 x 3,515	1994-95

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System	Project	Length (m)	Year
GETRAC® A3 (asphalt-based slab track system)	Leverkusen (Germany)	1,750	2021
	Hohenturm – Peissen (Germany)	4,698	2016-17
	Lehmsief, Stolberg – Herzogenrath line (Germany)	280	2015-16
	New Schlüchtern Tunnel with trafficability (Germany)	4,080	2014-15
	Schlüchterner Tunnel / Frankfurt – Goettingen (Germany)	7,571	2008-10
	Alter-Mainzer-Tunnel (Germany)	2 x 900	2009
	Brandleite Tunnel / Erfurt – Würzburg (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
RHEDA CITY	Sidney (Australia)	18,607	2024-25
	Nordhausen (Germany)	669	2019-24
	Munich (Germany)	3,880	2008-24
	Heidelberg (Germany)	15,472	2004-24
	Nuremberg (Germany)	31,233	2002-24
	Hanover (Germany)	8,746	1999-24
	Dresden (Germany)	80,691	1998-24
	Bielefeld (Germany)	150	2023
	Görlitz (Germany)	58	2023
Cottbus (Germany)	306	2023	

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System	Project	Length (m)	Year
RHEDA CITY (Continuation)	Plauen (Germany)	143	2023
	Putbus (Germany)	439	2023
	Hemmingen (Germany)	1,986	2019-23
	Augsburg (Germany)	8,807	2012-23
	Radebeul (Germany)	5,341	2012-23
	Leipzig (Germany)	14,817	2008-23
	Bonn (Germany)	516	2007-23
	Karlsruhe (Germany)	16,356	2003-23
	Mannheim (Germany)	25,398	2002-23
	Ludwigshafen (Germany)	7,530	2002-23
	Berlin (Germany)	106,739	1998-23
	Brandenburg (Germany)	70	2022
	Parramatta (Australia)	810	2022
	Cagliari (Italy)	5,178	2021-22
	Magdeburg (Germany)	7,946	2004-22
	Czestochowa (Poland)	102	2021
	REM Montreal (Canada)	27,000	2021
	Castellbisbal (Spain)	1,232	2020-21
	Tampere (Finland)	6,480	2017-21
	Bergen (Norway)	731	2015-21
Chemnitz (Germany)	3,340	2015-20	
Ütrecht (Netherlands)	5,360	2012-20	

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System	Project	Length (m)	Year
RHEDA CITY (Continuation)	Radebeul (Germany)	3,401	2012-20
	Frankfurt (Germany)	2,693	2009-20
	Potsdam (Germany)	3,990	2008-20
	Warsaw (Poland)	34,086	2007-20
	Karlsruhe (Germany)	13,501	2003-20
	Strausberg (Germany)	12	2019
	Weinheim (Germany)	643	2018-19
	Berne (Switzerland)	388	2018-19
	Woltersdorf (Germany)	1,597	2010-19
	Cologne (Germany)	5,875	2003-19
	Poznan (Poland)	80	2018
	Gera (Germany)	225	2018
	Palembang (Indonesia)	23,400	2017-18
	Doha (Qatar)	16,959	2014-18
	Rüdersdorf/ Schöneiche (Germany)	1,059	2010-18
	Brunswick (Germany)	3,404	2000-18
	Ratingen (Germany)	653	2017
	Dessau (Germany)	1,671	2017
	Bad Dürkheim (Germany)	30	2017
	Mainz (Germany)	744	2014-17
Dublin (Ireland)	9,665	2009-17	
Schwerin (Germany)	1,109	2006-17	

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System	Project	Length (m)	Year
RHEDA CITY (Continuation)	Bochum (Germany)	205	2015
	Basel (Switzerland)	303	2014
	Birmingham (Great Britain)	427	2013-14
	Sosnowiec (Poland)	2,253	2013-14
	Champocologno (Switzerland)	113	2013
	Heilbronn (Germany)	2,819	2012-13
	Dublin Industrial Track (Ireland)	1,906	2011-13
	Edinburgh (Great Britain)	8,454	2008-13
	Stuttgart Industriegleis (Germany)	97	2012
	Pilsen (Czech Republic)	372	2011-12
	Kassel (Germany)	881	2007-12
	Schriesheim (Germany)	371	2003-12
	Samedan (Switzerland)	273	2011
	Tirano (Italy)	144	2011
	Prague (Czech Republic)	120	2011
	Würzburg (Germany)	135	2008-11
	Runkel industrial track (Germany)	517	2010
	Schöneiche (Germany)	105	2010
	Chur (Switzerland)	1,700	2005-10
	Arlesheim / Dornach (Switzerland)	150	2009
Neuss (Germany)	60	2009	
Reinach (Switzerland)	615	2009	

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System	Project	Length (m)	Year	
RHEDA CITY (Continuation)	Seville (Spain)	16,968	2009	
	Croydon (Great Britain)	142	2007-09	
	Bucharest (Romania)	12,480	2006-07	
	The Hague (Netherlands)	2,335	2006-07	
	Saarbrücken (Germany)	3,820	2005-07	
	Nantes (France)	1,440	2004-05	
	Aken (Germany), harbor track for inland port	610	2002-03	
	Düsseldorf (Germany)	1,454	2002	
	Essen (Germany)	235	2002	
	Bremen (Germany)	910	2001	
	RHEDA CITY "Green"	Munich (Germany)	547	2023-24
		Hanover (Germany)	4,632	2016-24
		Cottbus (Germany)	15	2023
Heidelberg (Germany)		6,046	2016-23	
Berlin (Germany)		58,848	2004-23	
Karlsruhe (Germany)		26,677	2003-23	
Dresden (Germany)		758	2020-22	
Utrecht (Netherlands)		2,976	2017-22	
Mannheim (Germany)		18,465	2005-22	
Cologne (Germany)		4,010	2001-22	
Tampere (Finland)		6,740	2017-21	
Stuttgart (Germany)		71	2017-21	

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System	Project	Length (m)	Year
RHEDA CITY "Green" (Continuation)	Darmstadt (Germany)	18	2020
	Faliron (Greece)	3,800	2020
	Augsburg (Germany)	3,625	2020
	Hemmingen (Germany)	641	2020
	Chemnitz (Germany)	200	2014-20
	Warsaw (Poland)	11,039	2011-20
	Nordhausen (Germany)	311 2019	2019
	Amsterdam (Netherlands)	3,700	2018-19
	Magdeburg (Germany)	1,919	2018
	Weinheim (Germany)	1,381	2018
	Ratingen (Germany)	49	2017
	Doha (Qatar)	1,076	2014-17
	Nuremberg (Germany)	145	2016
	Frankfurt (Germany)	512	2014
	Edinburgh (Great Britain)	10,588	2009-14
	Ludwigshafen (Germany)	536	2009
	Reinach (Switzerland)	840	2009
	The Hague (Netherlands)	1,135	2006-07

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Selected Ballasted Track Projects

System	Project	Piece	Year
B 07	Kassel – Fulda (Germany)	95,000	2022-23
	Fulda – Würzburg (Germany)	78,000	2021-22
	Göttingen – Kassel (Germany)	41,540	2020-21
	Mannheim – Stuttgart (Germany)	50,015	2020
	Hanover – Göttingen (Germany)	75,000	2018-19
	VDE 8,1, Nuremberg – Ebensfelde (Germany)	23,415	2014-16
	Mühlacker (Germany)	4,090	2015
AR 06	Jubail (Saudi Arabia)	8,000	2020-24
	LRT Orascom Egypt (Egypt)	8,050	2021-22
	Jubail – Dammam (Saudi Arabia)	2,600	2020-22
	CTW110 Saudi Bin Ladin Group (SBG) (Saudi Arabia)	164,000	2015-20
	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
	CTW400 Al Ayuni investment & contracting co (Saudi Arabia)	753,860	2011-12
CTW200 China Railway 18th Bureau (Saudi Arabia)	846,000	2008-11	
B 70	Nova Gorica (Slovenia)	10,800	2024
	Koper-Divaca (Slovenia)	3,900	2024

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System	Project	Piece	Year	
B 70 (Continuation)	Maribor – Celje (Slovenia)	3,900	2023-24	
	Karaman – Ulukisla (Turkey)	210,000	2023-24	
	Various projects (Germany)	> 23 mio,	1970-2024	
	District of 6th Regional Directorate for TCDD (Turkey)	65,000	2023	
	Sincan – Yenikent – Kazan Soda Railway (Turkey)	36,000	2023	
	Sincan West Railway and Superstructure Project for TCDD (Turkey)	15,000	2023	
	Karaman – Ulukışla (İntekar) (Turkey)	94,699	2017-19	
MM VE	Catalunya - Aragon (Spain)	6,000	2021-24	
AM	Llagosta (Spain)	11,000	2024-25	
	Can Tunis (Spain)	7,200	2022-24	
	Murcia – Almeria (Spain)	2,200	2019-24	
	Castelbisball – Martorell (Spain)	10,880	2019-24	
	Martorell (Spain)	3,650	2019-21	
	PR 01	Castellón – Vandellós (Spain)	31,250	2021-22
	Nudo de la Teja (Spain)	11,023	2021-22	
Brazatoras (Spain)	30,000	2021-22		
Crariñena (Spain)	65,685	2021		
La Sagreram – Barcelona (Spain)	2,915	2019-20		
Castuera (Spain)	31,730 + 28,555 units	2019-20		
PR VE	Montcada (Spain)	9,500	2024-25	
	Xativa – Ontinyent (Spain)	26,038	2024-25	

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System	Project	Piece	Year
PR VE (Continuation)	Marchamalo (Spain)	8,181	2024-25
	Buñol – Utiel (Spain)	42,500	2024-25
	Zaragoza (Spain)	26,070	2024-25
	Grisen (Spain)	3,450	2024
	Jaca / Can Franc (Spain)	27,350	2023-24
	Ayerbe / Caldearenas (Spain)	16,669	2023-24
	Vilanova (Spain)	23,626	2023-24
	Manresa (Spain)	2,578	2023-24
	Tarragona (Spain)	1,140	2023-24
	Puigcerda (Spain)	47,641	2022-24
	Can Tunis (Spain)	1,200	2022-24
	Castelbisball – Martorell (Spain)	4,152	2019-24
	Murcia (Spain)	3,000	2019-24
	El prat (Spain)	7,860	2022-23
	Gava (Spain)	20,500	2022-23
	Atotxa (Spain)	5,523	2022-23
	Callus - Barcelona (Spain)	197	2022-23
	Brazatortas (Spain)	29,934	2019-23
	Soria (Spain)	3,724	2022
	AI VE	Llagosta (Spain)	1,300
Lorca (Spain)		26,070	2024-25
Xativa (Spain)		31,096	2022-24
BPP-14	Monforte del Cid - Murcia (Spain)	40	2016-17

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System	Project	Piece	Year
LW	Mezőkeresztes (Hungary)	39,000	2024
	Biatorbágy-Szárliget (Hungary)	97,500	2023-24
	Budapest – Belgrád (Hungary)	585,000	2022-24
	Szeged – Rösztke (Hungary)	21,000	2021-22
	Békéscsaba – Lökösháza (Hungary)	40,000	2021-22
	Rákos – Gödöllő (Hungary)	58,450	2020
	Ebes – Debrecen (Hungary)	28,300	2018-19
	Kelenföld – Százhalombatta (Hungary)	47,500	2017-18
	Püspökladány – Ebes (Hungary)	104,160	2017-18
LW, LM-S	Dénygő (Hungary)	26,000	2024
	Püspökladány – Biharkeresztes (Hungary)	18,400	2020-21
	Százhalombatta – Pusztaszabolcs (Hungary)	66,800	2020
LM-S	Szeged – Hódmezővásárhely (Hungary)	33,400	2020
UP 15	Various projects (USA)	> 1 mio.	2014-19
TRAVIESA BMA SM	Martorell – Barcelona (Spain)	40	2020
BM SM	Murcia – Almeria (Spain)	9,131	2019-24