

# REFERENCES

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**Ballastless track systems of RHEDA type for Long-distance transport**

System	Project	Length [m]	Year
<b>RHEDA 2000®</b>	Tunnel Pforzheim (incl. mass-spring-system)	2,200	2017-18
	Sliding platform Hamburg port	250	2017
	Hanau – Nantenbach (Germany)	2 x 6,000	2016-17
	Tithorea - Domokos Transition Sleeper (Greece)	732	2016
	Kaiser Wilhelm Tunnel (Germany)	4,000	2015-16
	Old Bebenroth Tunnel (Germany)	1,000	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
	Berlin-Munich, Ebensfeld-Erfurt – Leipzig / Halle (VDE 8.1 und 8.2) (Germany)	44,800 lin. M.	2012-14
	Mekka-Medina, named Haramain-line (Saudi-Arabia)	2 x 80,000	2012-14
	Seoul – Mokpo, between Osong – Mokpo, named Honam-Linie (Southkorea)	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
	Bush Tunnel Aachen (Germany)	2 x 700	2011
	ESAP Metro Athens (Greece)	33,000	2009-11
	Leipzig City Tunnel (Germany)	2 x 4,000	2009-10
	Southampton Tunnel (Great Britain)	2 x 550	2009-10
	Railway Connection Eje Atlántico, different tunnel projects (Spain):		
Meirama Bregua	2 x 1,800	2009	
Cerceda Meirama	2 x 3,000	2009	
Several tunnel projects on the High Speed Line Madrid – Valencia (Spain):			
Hoyo de Roda	2 x 2,000	2009	
Umbria de los molinos	2 x 1,500	2009	
Villalgordo del Cabriel	2 x 3,300	2009	
Cabrera	2 x 7,200	2009	
Buñol	2 x 1,900	2009	
Torrent	2 x 3,000	2009	

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<b>RHEDA 2000® (continuation)</b>	Hampstead Heath Tunnel (Great Britain)	2 x 1,044	2008
	High Speed Line Seoul – Busan, 2 <sup>nd</sup> Section (Kyungbu-Line, 2 <sup>nd</sup> stage), 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
	Taipei - Kaohsiung (Taiwan)	88,000	2004-06
	North-South Link (Germany)	9,800	2004-05
	Nuremberg - Ingolstadt (Germany)	2 x 36,000	2004-05
	Esslingerberg Tunnel (Germany)	2 x 13	2004
	Railway Bridge Ul. Wielicka Krakow – Tarnow-Line (Poland)	2 x 18	2003
	Side Connection with the High Speed line Nuremberg – Ingolstadt, Section Fischbach/Feucht (Germany)	2 x 2,100	2003
	Hibel Road Tunnel (Great Britain)	2 x 350	2003
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	
New Line between Las Palmas – Ourepesa (Spain)	2 x 430	2002	
<b>RHEDA 2000®</b>	New Connection between Erfurt-Halle / Leipzig – Section Grosskugel (Germany)	2 x 3,000	2001

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System	Project	Length [m]	Year
<b>(continuation)</b>	New Line between Erfurt – Halle / Leipzig – Section Schkeudiz (Germany)	2 x 500	2000
<b>RHEDA-BERLIN</b>	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 13,000	1999-00
	Upgraded Railway Connection Leipzig – Erfurt, Section Leislingen – Naumburg (Germany)	2 x 1,260	1997
	High Speed Line Hanover – Berlin, Section Zoo-Berlin Main Station (Germany)	4 x 8,000	1995-97
<b>RHEDA-Rathenow</b>	High Speed Connection Berlin – Hanover, Section Rathenow (Germany)	2 x 800	1998

**Asphalt-based ballastless track systems for Long-distance transport**

System	Project	Length [m]	Year
<b>ATD</b>	New Line between Las Palmas – Ourepesa (Spain)	2 x 435	2002
	High Speed Connection Berlin – Hanover, Section Haemerten (Germany)	2 x 5,500	1996-97
	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>GETRAC® A1</b>	Nuremberg port	366	2010
	Railway Project Wengi – Frutigen (Switzerland)	700	2004
	Lossetalbahn / Kassel (Germany)	650	2003
	New Line between Las Palmas – Ourepesa (Spain)	2 x 435	2002
	Railway Connection Hanover – Berlin, Section Berlin-Westkreuz-Ruhleben (Germany)	2 x 3,515	1994-95
<b>GETRAC® A3</b>	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
	Railway Project Old Mainz Tunnels (Germany)	2 x 900	2009
	Railway Project Schluechterner Tunnel / Railway Line Frankfurt – Goettingen (Germany)	7,571	2008-10
	Railway Project Brandleite Tunnel / Railway Line Erfurt – Wuerzburg (Germany)	2 x 3,600	2005
	Railway Project Esslingerberg-Tunnel / Treuchtlingen (Germany)	2 x 700	2004
	Railway Project Heiligenberg Tunnel (Germany)	2 x 1,300	2001-02
	Railway Project Kehretunnel (Germany)	2 x 300	2001

**Ballastless track systems of RHEDA type for Urban transit**

System	Project	Length [m]	Year
<b>RHEDA CITY (installed flush with the street surface)</b>	Tampere (Finland)	1,400	2017
	Ratingen (Germany)	653	2017
	Dessau (Germany)	1,671	2017
	Bad Duerkheim (Germany)	30	2017
	Chemnitz (Germany)	2,278	2015-17
	Bergen (Norway)	619	2015
	Bochum (Germany)	205	2015
	Doha (Qatar)	16,209	2014-17
	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 (The Netherlands)	5,256	2012-17
	Augsburg (Germany)	3,523	2012-14
	Heilbronn (Germany)	2,819	2012-13
	Radebeul (Germany)	1,663	2012
	Stuttgart (Germany), industrial tracks	97	2012
	Dublin (Ireland), industrial tracks	1,906	2011-13
	Pilsen (Czech Republic)	372	2011-12
	Prague (Czech Republic)	120	2011
	Samedan (Switzerland)	273	2011
	Tirano (Italy)	144	2011
	Ruedersdorf/ Schoeneiche (Germany)	288	2010-13
	Woltersdorf (Germany)	922	2010-13
	Runkel (Germany), industrial tracks	517	2010
Schoeneiche (Germany)	105	2010	
Frankfurt (Germany)	2,408	2009-17	

**Ballastless track systems of RHEDA type for Urban transit**

System	Project	Length [m]	Year
<b>RHEDA CITY (installed flush with the street surface; continuation)</b>	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)	6,316	2008-18
	Edinburgh (Great Britain)	8,454	2008-13
	Potsdam (Germany)	3,709	2008-17
	Wuerzburg (Germany)	135	2008-11
	Munich (Germany)	3,130	2008-09
	Warsaw (Poland)	33,230	2007-15
	Kassel (Germany)	881	2007-12
	Croydon (Great Britain)	142	2007-09
	Bonn (Germany)	328	2007-08
	Schwerin (Germany)	1,109	2006-17
	Bucharest (Rumania)	12,480	2006-07
	The Hague (The Netherlands)	2,335	2006-07
	Chur (Switzerland)	1,700	2005-10
	Saarbruecken (Germany)	3,820	2005-07
	Heidelberg (Germany)	8,221	2004-17
	Magdeburg (Germany)	3,587	2004-13
Nantes (France)	1,440	2004-05	
Karlsruhe (Germany)	9,063	2003-17	
Cologne (Germany)	5,290	2003-17	
Schriesheim (Germany)	371	2003-12	
Ludwigshafen (Germany)	3,455	2002-17	
Mannheim (Germany)	21,316	2002-17	
Nuremberg (Germany)	21,761	2002-17	

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System	Project	Length [m]	Year	
<b>RHEDA CITY (installed flush with the street surface; continuation)</b>	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	
	Hanover (Germany)	5,050	1999-17	
	Berlin (Germany)	71,974	1998-17	
	Dresden (Germany)	68,832	1998-17	
<b>RHEDA CITY "Green"</b>	Stuttgart (Germany)	26	2017	
	Ratingen (Germany)	49	2017	
	Utrecht (The Netherlands)	2,930	2017	
	Nuremberg (Germany)	145	2016	
	Hanover (Germany)	959	2016-17	
	Heidelberg (Germany)	4,540	2016-17	
	Doha (Qatar)	1,076	2014-17	
	Frankfurt (Germany)	512	2014	
	Chemnitz (Germany)	153	2014-15	
	Warsaw (Poland)	10,107	2011-15	
	Edinburgh (Great Britain)	10,588	2009-14	
	Reinach (Schweizerland)	840	2009	
	Ludwigshafen (Germany)	536	2009	
	The Hague (The Netherlands)	1,135	2006-07	
	Mannheim (Germany)	12,944	2005-17	
	Berlin (Germany)	38,797	2004-17	
	Karlsruhe (Germany)	14,256	2003-17	
	Cologne (Germany)	4,010	2001-02	
	<b>RHEDA MRT</b>	Seoul, Extension of the Metro line 3 (Korea)	2 x 3,000	2008-09
		Madrid, Metro Line 7, Station San Blas – Simancas (Spain)	190	2005



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System	Project	Length [m]	Year
RHEDA RX	Project underground transit system Circle Line CCL (Singapore)	20,000	2004-08
	Project Franz-Mett-Strasse in Berlin (Germany)	120	2002
	Project Underground Berlin / Line 2 (Germany)	195	2001
	Renewal of Track on the Berlin City Railways (Germany)	4 x 8,800	1996-97
	Granada (Spain)	4,669	2013-14
	Berlin (Germany)	219	2013