

PRODUCT REFERENCE LIST

Vanguard

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Year	Country	Authority	No	Track	Axle	Speed	Curvature
1999	Czech Republic	Velim Test Track	162	Ballast			Tangent
2000	UK	London Underground	268	Slab	11 tonnes	70 kph	345 m
2000	UK	Network Rail	112	Ballast	17 tonnes	50 kph	
2001	Spain	Madrid Metro	100	Slab	12.5 tonnes	50 kph	250 m
2001	Spain	Madrid Metro	400	Slab	12.5 tonnes	100 kph	
2002	Hong Kong	MTRC	150	Slab	16 tonnes	60 kph	Tangent
2003	Hong Kong	MTRC	160	Ballast	16 tonnes		Tangent
2003	Italy	ATM, Milan	280	Slab			
2003	Italy	ATM, Milan	170	Slab			
2003	UK	CTRL	3500	Slab	22 tonnes	50 kph	
2003	USA	MBTA Boston	1700	Ballast	12 tonnes		
2004	China	GZM L1	700	Slab	16 tonnes	70 kph	300 m
2004	Hong Kong	MTRC	270	Slab	16 tonnes	40 kph	300 m
2004	Norway	Jernbaneverket	32	Ballast			
2004	Spain	Barcelona Metro	400	Ballast	12 tonnes	50 kph	
2004	USA	PATCO	80	Slab	11 tonnes		
2005	Australia	PTA	130	Slab	14 tonnes	50 kph	Tangent
2005	China	GZM L3	2442	Slab	16 tonnes	90 kph	300 m/min
2005	China	GZM L3	2820	Slab	16 tonnes	90 kph	
2005	China	GZM L4	990	Slab	15.5 tonnes	90 kph	
2005	UK	Network Rail	2000	Slab	17 tonnes		
2005	UK	Newcastle Metro	110	Slab			
2006	Australia	PTA	10000	Slab	14 tonnes	110 kph	140 m
2006	China	GZM L3	6010	Slab	16 tonnes	90 kph	
2006	UK	CTRL	4500	Slab	22 tonnes	50 kph	
2006	UK	CTRL	8000	Slab	22 tonnes	50 kph	
2007	China	Beijing Metro L5	25830	Slab	14 tonnes	80 kph	400 m Tangent
2007	China	GZM L5	1216	Slab	15.5 tonnes	90 kph	
2007	China	GZM L5	5134	Slab	15.5 tonnes	90 kph	
2007	UK	DLR-WAX	990	Slab	10 tonnes	80 kph	300 m
2008	China	Beijing Metro L5	7380	Slab			
2008	China	GZM L5	2538	Slab	15.5 tonnes	90 kph	
2008	China	GZM L5	4096	Slab	15.5 tonnes	90 kph	
2008	China	Shenyang Metro L1	5562	Slab	14 tonnes		

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2008	UK	DLR-LEX	4000	Slab	10 tonnes	80 kph	96 m
2008	UK	DLR 3 CAR	800	Slab	10 tonnes	90 kph	96 m
2009	Brazil	Sao Paulo L1	2000	Slab			
2009	China	Beijing Metro	1694	Slab	14 tonnes	80 kph	400 m
2009	China	Beijing Metro L15	1285	Slab	14 tonnes	100 kph	400 m
2009	China	Beijing Metro L5	1804	Slab			
2009	China	GZM L3 Extension	6328	Slab	16 tonnes	100 kph	
2009	China	GZM L5	8096	Slab	15.5 tonnes	90 kph	
2009	China	Nanjing Metro L1	836	Slab			
2009	China	Nanjing Metro L2	1476	Slab	14 tonnes	80 kph	300 m
2009	China	Nanjing Metro L2	1710	Slab	14 tonnes	80 kph	300 m
2009	China	Shanghai Metro L8	1350	Slab	16 tonnes	80 kph	300 m
2009	China	Shanghai Metro L8	650	Slab	16 tonnes	80 kph	300 m
2009	China	Shanghai Metro L8	2650	Slab	16 tonnes	80 kph	300 m
2009	China	Shenyang Metro L1	384	Slab	16 tonnes	80 kph	300 m
2009	Korea	KRTC	4200	Slab	17 tonnes	80 kph	
2009	USA	PATCO	7000	Slab	16 tonnes		
2010	Brazil	Sao Paulo L1	820	Slab	14 tonnes		
2010	Brazil	Sao Paulo L1	520	Slab	14 tonnes		
2010	China	Shanghai Metro L8	1460	Slab	16 tonnes	80 kph	300 m
2010	China	Shanghai Metro L8	5454	Slab	16 tonnes	80 kph	300 m
2010	China	Shanghai Metro L8	4300	Slab	16 tonnes	80 kph	300 m
2010	China	Shanghai Metro L9	850	Slab	16 tonnes	80 kph	300 m
2010	China	Shenyang Metro L1	144	Slab	16 tonnes	80 kph	300 m
2010	Serbia	Belgrade Central Station	3000	Slab	22 tonnes		
2010	Spain	Madrid Metro	1500	Slab			
2010	China	Shanghai Metro L1 - Egg	650	Slab	16 tonnes	80 kph	
2010	China	Shanghai Metro L9 - DTIII2	834	Slab	16 tonnes	80 kph	
2010	China	Shanghai Metro L2 - DTIII A	2520	Slab	16 tonnes	80 kph	
2010	China	Shanghai Metro L1 - Egg	3520	Slab	16 tonnes	80 kph	
2010	China	Shanghai Metro L2 - Egg	82	Slab	16 tonnes	80 kph	
2010	China	Shanghai Metro L4 - DTIII2	2080	Slab	16 tonnes	80 kph	
2010	China	Shanghai Metro L8 - DTIII2	788	Slab	16 tonnes	80 kph	
2010	China	Shenyang Metro L2	7897	Slab	16 tonnes	80 kph	
2010	China	Nanjing Metro L1	960	Slab	16 tonnes	80 kph	
2011	Spain	Madrid Metro Phase. 2	1500	Slab			
2011	UK	Network Rail	1800	Slab	17 tonnes		
2011	China	Shanghai Metro L10-Lord/GB	1020	Slab	16 tonnes	80 kph	
2011	China	Nanjing Metro L1	840	Slab	14 tonnes	80 kph	

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2011	China	Shanghai Metro L3- WJ-2	2200	Slab/Via duct	16 tonnes	80 kmh	
2011	China	Beijing Metro L15	485	Slab	16 tonnes	80 kph	
2011	China	Beijing Metro Daxing	928	Slab	16 tonnes	80 kph	
2011	China	Shenyang Metro L1	798	Slab	16 tonnes	80 kph	
2012	Norway	Oslo Metro	1600	Slab	16 tonnes		
2012	Russia	Moscow Metro	200	Slab	17 tonnes		
2012	UK	LUL Central Line	600	Slab	12 tonnes		
2012	Sweden	Stockholm Metro		Slab			
2012	China	Wuhan Metro L2	4200	Slab	16 tonnes	80 kph	
2012	China	Shanghai Metro L10 - Egg	1144	Slab	16 tonnes	80 kph	
2012	China	Nanjing Metro L2 - DT VI2	1150	Slab	14 tonnes	80 kph	
2012	China	Changsha Metro L2	6000	Slab	16 tonnes	80 kmh	
2012	Serbia	Belgrade Central Station Phase. 2	3000	Slab	22 tonnes		
2013	Hong Kong	Express Rail Link	10700	Slab	16 tonnes	70 kmh	
2013	Hong Kong	MTR	10700	Slab	15 tonnes	160 kph	
2013	Hong Kong	MTRC	1860	Slab			
2013	Hong Kong	MTRC	448	Slab			
2013	Hong Kong	MTRC	2680	Slab	17 tonnes	80 kph	300 m
2013	Italy	Rome Metro	1026	Slab	14 tonnes		Tangent
2013	Japan		320	Slab			
2013	Sweden	Trafikverket	718	Slab	25 tonnes	80 kph	Tangent
2014	UK	Network Rail	708	Slab	11 tonnes	80 kph	
2014	Turkey	Istanbul Metro	5834	Slab	15 tonnes	60 kph	Tangent
2014	UK	London Underground	600	Slab	11 tonnes	70 kph	
2015	Serbia	Belgrade Central Station Phase. 2	10600	Slab	22 tonnes		
2015	UK	London Underground	1600	Slab	11 tonnes	70 kph	UK