BROAD STANDARD DIAMOND DETAILED INSPECTION

Location:	**Turnout Number:**	**Equipment No.:**	**Kilometrage:**
Inspector Name:	**Date:**	**Work Order:**	**Track:**

OVERVIEW INSPECTION These tasks apply generically to all points and crossings assemblies

ELEMENT	MEASURE	COMMENT	CONDITION		RESPONSE
Component Damage			Any component loose, missing or broken.	A6	Increase monitoring, prioritise repair
Track geometry, Pumping in Critical Areas			5 – 20 mm	A6	Increase monitoring, prioritise repair
			20 mm or more	A6	Increase monitoring, prioritise repair
Track Geometry, Overall Condition			Visible deterioration	A6	Increase monitoring, prioritise repair
			Single Measured defect	-	ETS-05-00 5.4 table 5-15
			Multiple measured defects	-	ETS-05-00 5.4 table 5-15
Bearers and Fasteners, Ineffective in Critical Areas			1	A6	Increase monitoring, prioritise repair
			2 consecutive	A3	40 km/h TSR until repaired
			> 2 consecutive	A1	10 km/h TSR until repaired
Bearers and Fasteners, Overall Condition			< 20% loose clips, screws or spikes, timbers degraded	A6	Increase monitoring, prioritise repair
			Pads and insulators skewed some fasteners missing 1 in 4 timbers deteriorating	A6	Increase monitoring, prioritise repair
			> 50% loose clips, screws or spikes, 1 in 3 timbers degraded missing fasteners	A6	Increase monitoring, prioritise repair
Ballast, condition and profile			Fines on surface. Ballast shoulder reduced.	A6	Increase monitoring, prioritise repair
			Trapped moisture, mud and track pumping. Ballast low, ends of multiple bearers visible.	A6	Increase monitoring, prioritise repair
Ballast, Excess			Ballast < 25 mm from moving parts. Ballast loose on sleepers.	A6	Increase monitoring, prioritise repair
			Ballast touching moving parts or ballast obstructing inspection of fasteners. Ballast fallen into trough.	A6	Increase monitoring, prioritise repair

OVERVIEW INSPECTION These tasks apply generically to all points and crossings assemblies					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE**
Rail, Creep			Any of below Signs of rail movement V or K out of square. Movement of point or splice rails exposing gaps to wheels	 A6	 Increase monitoring, prioritise repair
Rail, Condition			Irregular contact band. Minor RCF, wheel burns or top / side wear. Evidence of bent rail. Severe RCF likely to interfere with Ultrasonic testing. Advanced wear. Corrugations. Other rail defects requiring a response.	A6 A6 A6	Increase monitoring, prioritise repair Increase monitoring, prioritise repair Increase monitoring, prioritise repair
Rail, Remaining Head Height			35mm to 26 mm 24 to 26 mm and without defect per Section 1 Rail Head height defect	A7 A6 -	Routine scheduled inspection Increase monitoring, prioritise repair Section 1 Rail

FIXED V CROSSING INPSECTION							
ELEMENT	**MEASURE**		**COMMENT**	**CONDITION**		**RESPONSE**	
Track gauge (at the crossing nose)	SG V1	SG V2		STANDARD	BROAD		
				≥ 1443 mm	≥ 1608 mm	A1	10 km/h TSR until repaired
				> 1440 mm to < 1443 mm	> 1605 mm to < 1608 mm	A4	60/65 km/h TSR until repaired
				> 1438 mm to 1440 mm	> 1603 mm to 1605 mm	A6	Increase monitoring. Prioritise repair
	BG V1	BG V2		> 1430 mm to 1438 mm	> 1595 mm to 1603 mm	A7	Routine scheduled inspection
				> 1427 mm to 1430 mm	> 1592 mm to 1595 mm	A6	Increase monitoring. Prioritise repair
				> 1425 mm to 1427 mm	> 1590 mm to 1592 mm	A4	60/65 km/h TSR until repaired
				1425 mm and less	1590 mm and less	A1	10 km/h TSR until repaired
Check Rail Effectiveness	SG V1	SG V2		STANDARD	BROAD		
				≥ 1400 mm	≥ 1565 mm	A1	10 km/h TSR until repaired
				1398 mm to < 1400 mm	1563 mm to < 1565 mm	A3	40 km/h TSR until repaired
				1396 mm to < 1398 mm	1561 mm to < 1563 mm	A4	60/65 km/h TSR until repaired
				1389 mm to < 1396 mm	1554 mm to < 1561 mm	A7	Routine scheduled inspection
	BG V1	BG V2		1386 mm to < 1389 mm	1551 mm to < 1554 mm	A6	Increase monitoring. Prioritise repair
				1384 mm to < 1386 mm	1549 mm to < 1551 mm	A4	60/65 km/h TSR until repaired
				1382 mm to < 1384 mm	1547 mm to < 1549 mm	A3	40 km/h TSR until repaired
				< 1382 mm	< 1547 mm	A1	10 km/h TSR until repaired
Check rail flangeway	SG V1	SG V2		>49 mm		A4	60/65 km/h TSR until repaired
				48 mm to 49 mm		A6	Increase monitoring. Prioritise repair
				40 mm to < 48 mm		A7	Routine scheduled inspection
	BG V1	BG V2		38 mm to < 40 mm		A6	Increase monitoring. Prioritise repair
				< 38 mm		A4	60/65 km/h TSR until repaired

FIXED V CROSSING INPSECTION								
ELEMENT		**MEASURE**		**COMMENT**	**CONDITION**		**RESPONSE**	
Check rail flare	V1	SG V1, V1 end	SG V1, V2 end		STANDARD	BROAD		
					1360 mm to < 1365 mm	1525 mm to < 1530 mm	A6	Increase monitoring. Prioritise repair
		BG V1, V1 end	BG V1, V2 end		1365 mm to < 1370 mm	1530 mm to < 1535 mm	A3	40 km/h TSR until repaired
					≥ 1370 mm	≥ 1535 mm	A1	10 km/h TSR until repaired
	V2	SG V2, V1 end	SG V2, V2 end		STANDARD	BROAD		
					1360 mm to < 1365 mm	1525 mm to < 1530 mm	A6	Increase monitoring. Prioritise repair
		BG V2, V1 end	BG V2, V2 end		1365 mm to < 1370 mm	1530 mm to < 1535 mm	A3	40 km/h TSR until repaired
					≥ 1370 mm	≥ 1535 mm	A1	10 km/h TSR until repaired
Check rail spacer blocks		V1	V2		Cracked		A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
					Broken but still effective		A3	40 km/h TSR until repaired
					Missing/Broken and ineffective		A1	10 km/h TSR until repaired
Check rail spacer blocks, bolts		V1	V2		Missing/ineffective ≤2		A4/A3	60/65 km/h TSR until repaired
					Missing/ineffective 3		A3	40 km/h TSR until repaired
					Missing/ineffective >3 or missing end bolt in check rail.		A1	10 km/h TSR until repaired
Crossing nose break width		V1	V2		15 mm to 20 mm width		A6	Increase monitoring. Prioritise repair
					20 mm to 25 mm width		A3	40 km/h TSR until repaired
					> 25 mm wide		A1	10 km/h TSR until repaired
Crossing nose condition, metal flow		V1	V2		1 mm or more flow		A6	Increase monitoring. Prioritise repair

FIXED V CROSSING INPSECTION						
ELEMENT	**MEASURE**		**COMMENT**	**CONDITION**	**RESPONSE**	
Crossing nose condition, batter/ hollow	V1	V2		2 mm or more hollow / severe	A6	Increase monitoring. Prioritise repair
Crossing nose condition, surface condition	V1	V2		Pieces 3mm or more across have fallen from surface	A6	Increase monitoring. Prioritise repair
Crossing Cracks	V1	V2		No cracks	A7	Routine scheduled inspection
				Noncritical	A6	Increase monitoring. Prioritise repair
				Critical	A6	Increase monitoring. Prioritise repair
				Fully (not affecting the running surface)	A4	60/65 km/h TSR until repaired
				Fully (affecting the running surface)	A1	10 km/h TSR until repaired
Crossing flangeway	SG V1	SG V2		Visible evidence of flange tips running in dirt.	A6	Increase monitoring. Prioritise repair
	BG V1	BG V2		Flangeway obstructed (with ballast etc) or evidence of flange tip running on steel work	A1	10 km/h TSR until repaired
Crossing spacer blocks	V1	V2		Cracked	A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
				Broken but still effective	A3	40 km/h TSR until repaired
				Missing/Broken and ineffective	A1	10 km/h TSR until repaired
Crossing spacer blocks, bolts	V1	V2		Single or multiple bolts loose yet effective	A6	Increase monitoring. Prioritise repair
				Missing/ineffective ≤2	A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
				Missing/ineffective 3	A3	40 km/h TSR until repaired
				Missing/ineffective >3	A1	10 km/h TSR until repaired

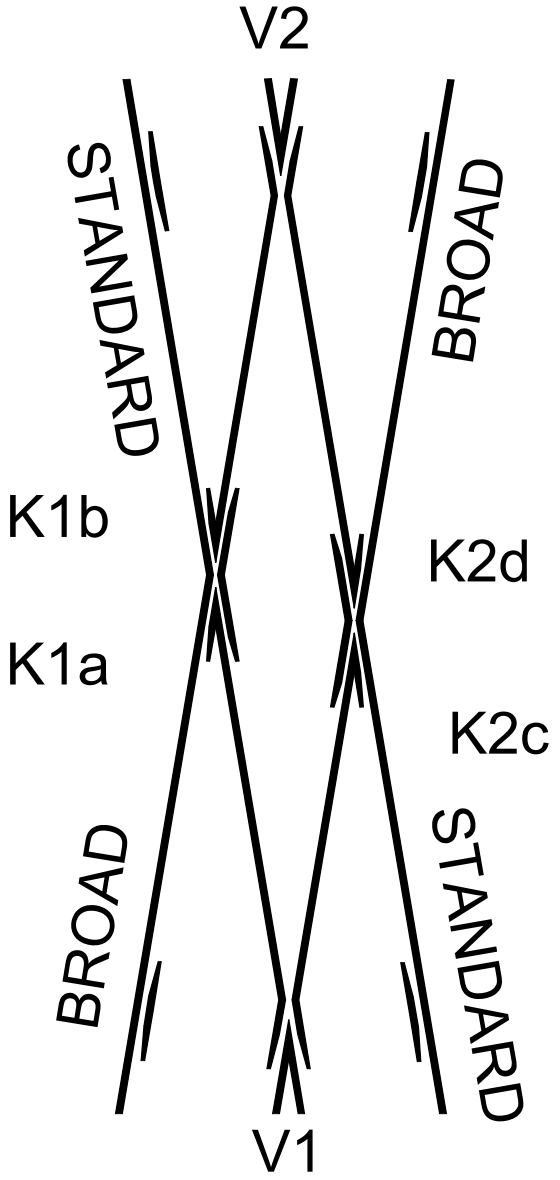
FIXED V CROSSING INPSECTION						
ELEMENT	**MEASURE**		**COMMENT**	**CONDITION**	**RESPONSE**	
Wing rail vertical wear	SG V1	SG V2		5 mm to 10 mm	A6	Increase monitoring. Prioritise repair
	BG V1	BG V2		>10 mm	A3	40 km/h TSR until repaired
Wing Rail Condition, metal flow	SG V1	SG V2		1 mm or more flow	A6	Increase monitoring. Prioritise repair
	BG V1	BG V2				
Wing Rail Condition, surface condition	SG V1	SG V2		Pieces 3mm or more across have fallen from surface	A6	Increase monitoring. Prioritise repair
	BG V1	BG V2				
Wing Rail flare	SG V1	SG V2		1360 mm to < 1365 mm	A6	Increase monitoring. Prioritise repair
				1365 mm to < 1370 mm	A3	40 km/h TSR until repaired
	BG V1	BG V2		≥ 1370 mm	A1	10 km/h TSR until repaired

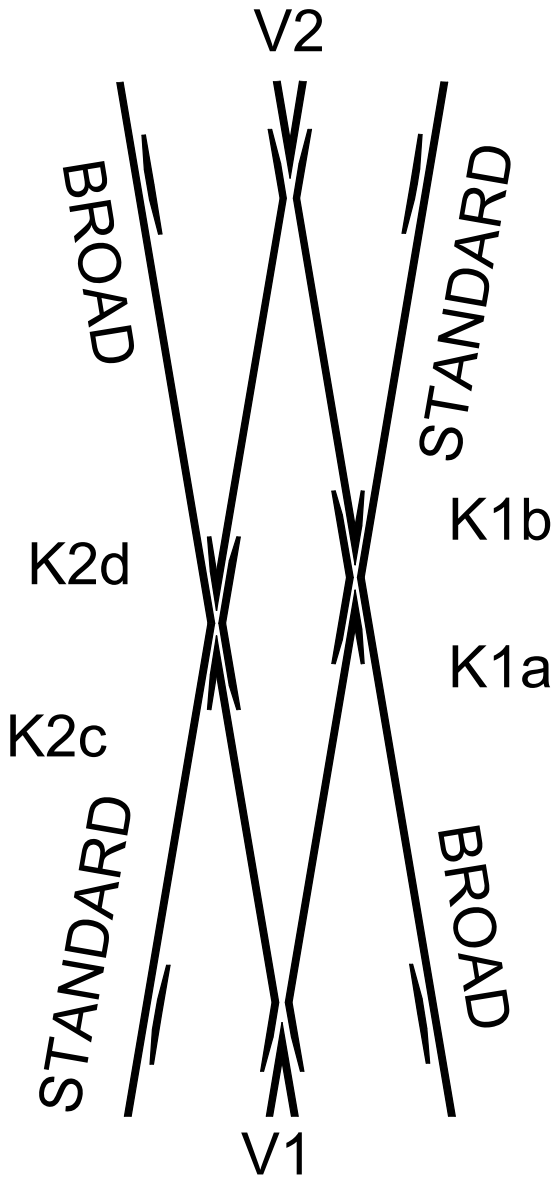
FIXED K CROSSING INPSECTION							
ELEMENT	**MEASURE**	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE**	
Track gauge (at the crossing nose)*	K1a SG	K1b BG		STANDARD	BROAD		
				≥ 1443 mm	≥ 1608 mm	A1	10 km/h TSR until repaired
				> 1440 mm to < 1443 mm	> 1605 mm to < 1608 mm	A4	60/65 km/h TSR until repaired
				> 1438 mm to 1440 mm	> 1603 mm to 1605 mm	A6	Increase monitoring. Prioritise repair
	K2c BG	K2d SG		> 1430 mm to 1438 mm	> 1595 mm to 1603 mm	A7	Routine scheduled inspection
				> 1427 mm to 1430 mm	> 1592 mm to 1595 mm	A6	Increase monitoring. Prioritise repair
				> 1425 mm to 1427 mm	> 1590 mm to 1592 mm	A4	60/65 km/h TSR until repaired
				1425 mm and less	1590 mm and less	A1	10 km/h TSR until repaired
Check Rail Effectiveness	K1a SG	K1b BG		STANDARD	BROAD		
				≥ 1400 mm	≥ 1565 mm	A1	10 km/h TSR until repaired
				1398 mm to < 1400 mm	1563 mm to < 1565 mm	A3	40 km/h TSR until repaired
				1396 mm to < 1398 mm	1561 mm to < 1563 mm	A4	60/65 km/h TSR until repaired
				1389 mm to < 1396 mm	1554 mm to < 1561 mm	A7	Routine scheduled inspection
	K2c BG	K2d SG		1386 mm to < 1389 mm	1551 mm to < 1554 mm	A6	Increase monitoring. Prioritise repair
				1384 mm to < 1386 mm	1549 mm to < 1551 mm	A4	60/65 km/h TSR until repaired
				1382 mm to < 1384 mm	1547 mm to < 1549 mm	A3	40 km/h TSR until repaired
				< 1382 mm	< 1547 mm	A1	10 km/h TSR until repaired
Check rail flangeway	K1a	K1b		>49 mm		A4	60/65 km/h TSR until repaired
				48 mm to 49 mm		A6	Increase monitoring. Prioritise repair
	K2c	K2d		40 mm to < 48 mm		A7	Routine scheduled inspection
				38 mm to < 40 mm		A6	Increase monitoring. Prioritise repair

FIXED K CROSSING INPSECTION							
ELEMENT	**MEASURE**	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE**	
Check rail flare	K1a SG	K1b BG		STANDARD	BROAD		
				1360 mm to < 1365 mm	1525 mm to < 1530 mm	A6	Increase monitoring. Prioritise repair
	K2c BG	K2d SG		1365 mm to < 1370 mm	1530 mm to < 1535 mm	A3	40 km/h TSR until repaired
				≥ 1370 mm	≥ 1535 mm	A1	10 km/h TSR until repaired
Check rail spacer blocks	K1	K2		Cracked		A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
				Broken but still effective		A3	40 km/h TSR until repaired
				Missing/Broken and ineffective		A1	10 km/h TSR until repaired
Check rail spacer blocks, bolts	K1	K2		Missing/ineffective ≤2		A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
				Missing/ineffective 3		A3	40 km/h TSR until repaired
				Missing/ineffective >3 or missing end bolt in check rail.		A1	10 km/h TSR until repaired
Crossing nose condition, metal flow	K1a	K1b		< 38 mm		A4	60/65 km/h TSR until repaired
	K2c	K2d					
Crossing nose condition, batter/ hollow	K1a	K1b		2 mm or more hollow / severe		A6	Increase monitoring. Prioritise repair
	K2c	K2d					
Crossing nose condition, surface condition	K1a	K1b		Pieces 3mm or more across have fallen from surface		A6	Increase monitoring. Prioritise repair
	K2c	K2d					
Crossing Cracks	K1a	K1b		No cracks		A7	Routine scheduled inspection
				Noncritical		A6	Increase monitoring. Prioritise repair
	K2c	K2d		Critical		A6	Increase monitoring. Prioritise repair
				Fully (not affecting the running surface)		A4	60/65 km/h TSR until repaired
				Fully (affecting the running surface)		A1	10 km/h TSR until repaired

FIXED K CROSSING INPSECTION							
ELEMENT	**MEASURE**	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE**	
Crossing flangeway	K1a	K1b		Visible evidence of flange tips running in dirt.		A6	Increase monitoring. Prioritise repair
	K2c	K2d		Flangeway obstructed (with ballast etc) or evidence of flange tip running on steel work		A1	10 km/h TSR until repaired
Crossing spacer blocks	K1	K2		Cracked		A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
				Broken but still effective		A3	40 km/h TSR until repaired
				Missing/Broken and ineffective		A1	10 km/h TSR until repaired
Crossing spacer blocks, bolts	K1	K2		Single or multiple bolts loose yet effective		A6	Increase monitoring. Prioritise repair
				Missing/ineffective ≤2		A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
				Missing/ineffective 3		A3	40 km/h TSR until repaired
				Missing/ineffective >3		A1	10 km/h TSR until repaired
Knuckle vertical wear	K1a	K1b		5 mm to 10 mm		A6	Increase monitoring. Prioritise repair
	K2c	K2d		>10 mm		A3	40 km/h TSR until repaired
Wing Rail Condition, metal flow	K1a	K1b		1 mm or more flow		A6	Increase monitoring. Prioritise repair
	K2c	K2d					
Wing Rail Condition, surface condition	K1a	K1b		Pieces 3mm or more across have fallen from surface		A6	Increase monitoring. Prioritise repair
	K2c	K2d					
Wing Rail flare	K1a BG	K1b SG		STANDARD	BROAD		
				1360 mm to < 1365 mm	1525 mm to < 1530 mm	A6	Increase monitoring. Prioritise repair
	K2c SG	K2d BG		1365 mm to < 1370 mm	1530 mm to < 1535 mm	A3	40 km/h TSR until repaired
				≥ 1370 mm	≥ 1535 mm	A1	10 km/h TSR until repaired

*Where diamonds are designed with 6mm tight gauge through K crossing area an A6 response for tight gauge may be reduced to A7.


V2
STANDARD
BROAD
K1b
K2d
K1a
K2c
BROAD
STANDARD
V1


V2
BROAD
STANDARD
K1b
K2d
K1a
K2c
STANDARD
BROAD
V1