

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 Misalignment at heel Signs of rail movement Blade up out of square. Greater than 15 mm clearance of moving drive locking and detection equipment from fixed parts. Anti creep device not correctly positioned for current rail temp	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 Increase monitoring, prioritise repair A6 Increase monitoring, prioritise repair A6 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 Routine scheduled inspection A6 Increase monitoring, prioritise repair - Section 1 Rail

FIXED V CROSSING INPSECTION						
ELEMENT	MEASURE		COMMENT	CONDITION	RESPONSE	
Track gauge (at the crossing nose)	LEFT V1	LEFT V2		≥ 1443 mm	A1	10 km/h TSR until repaired
	RIGHT V1	RIGHT V2		> 1440 mm to < 1443 mm	A4	60/65 km/h TSR until repaired
				> 1438 mm to 1440 mm	A6	Increase monitoring. Prioritise repair
				> 1430 mm to 1438 mm	A7	Routine scheduled inspection
				> 1427 mm to 1430 mm	A6	Increase monitoring. Prioritise repair
				> 1425 mm to 1427 mm	A4	60/65 km/h TSR until repaired
				1425 mm and less	A1	10 km/h TSR until repaired
Check Rail Effectiveness	LEFT V1	LEFT V2		≥ 1400 mm	A1	10 km/h TSR until repaired
	RIGHT V1	RIGHT V2		1398 mm to < 1400 mm	A3	40 km/h TSR until repaired
				1396 mm to < 1398 mm	A4	60/65 km/h TSR until repaired
				1389 mm to < 1396 mm	A7	Routine scheduled inspection
				1386 mm to < 1389 mm	A6	Increase monitoring. Prioritise repair
				1384 mm to < 1386 mm	A4	60/65 km/h TSR until repaired
				1382 mm to < 1384 mm	A3	40 km/h TSR until repaired
				< 1382 mm	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
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

FIXED V CROSSING INPSECTION						
ELEMENT	MEASURE		COMMENT	CONDITION	RESPONSE	
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	LEFT V1	LEFT V2		Visible evidence of flange tips running in dirt.	A6	Increase monitoring. Prioritise repair
	RIGHT V1	RIGHT 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
Wing rail vertical wear	LEFT V1	LEFT V2		5 mm to 10 mm	A6	Increase monitoring. Prioritise repair
	RIGHT V1	RIGHT V2		>10 mm	A3	40 km/h TSR until repaired
Wing Rail Condition, metal flow	LEFT V1	LEFT V2		1 mm or more flow	A6	Increase monitoring. Prioritise repair
	RIGHT V1	RIGHT V2				
Wing Rail Condition, surface condition	LEFT V1	LEFT V2		Pieces 3mm or more across have fallen from surface	A6	Increase monitoring. Prioritise repair
	RIGHT V1	RIGHT V2				

FIXED V CROSSING INPSECTION						
ELEMENT	MEASURE		COMMENT	CONDITION	RESPONSE	
Wing Rail flare	LEFT V1	LEFT V2		1360 mm to < 1365 mm	A6	Increase monitoring. Prioritise repair
				1365 mm to < 1370 mm	A3	40 km/h TSR until repaired
	RIGHT V1	RIGHT V2		≥ 1370 mm	A1	10 km/h TSR until repaired
Check rail flangeway	LEFT V1	LEFT V2		>49 mm	A4	60/65 km/h TSR until repaired
				48 mm to 49 mm	A6	Increase monitoring. Prioritise repair
	RIGHT V1	RIGHT V2		40 mm to < 48 mm	A7	Routine scheduled inspection
				38 mm to < 40 mm	A6	Increase monitoring. Prioritise repair
		< 38 mm	A4	60/65 km/h TSR until repaired		
Check rail flare	LEFT V1	LEFT V2		1360 mm to < 1365 mm	A6	Increase monitoring. Prioritise repair
				1365 mm to < 1370 mm	A3	40 km/h TSR until repaired
	RIGHT V1	RIGHT V2		≥ 1370 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 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

FIXED K CROSSING INPSECTION						
ELEMENT	MEASURE	MEASURE	COMMENT	CONDITION	RESPONSE	
Track gauge (at the crossing nose)	K1a	K1b		≥ 1443 mm	A1	10 km/h TSR until repaired
	K2c	K2d		> 1440 mm to < 1443 mm	A4	60/65 km/h TSR until repaired
Check Rail Effectiveness	K1a	K1b		> 1438 mm to 1440 mm	A6	Increase monitoring. Prioritise repair
	K2c	K2d		> 1430 mm to 1438 mm	A7	Routine scheduled inspection
Crossing nose break width	K1a	K1b		> 1427 mm to 1430 mm	A6	Increase monitoring. Prioritise repair
	K2c	K2d		> 1425 mm to 1427 mm	A4	60/65 km/h TSR until repaired
Crossing nose condition, metal flow	K1a	K1b		1425 mm and less	A1	10 km/h TSR until repaired
	K2c	K2d		≥ 1400 mm	A1	10 km/h TSR until repaired
Crossing nose condition, metal flow	K1a	K1b		1398 mm to < 1400 mm	A3	40 km/h TSR until repaired
	K2c	K2d		1396 mm to < 1398 mm	A4	60/65 km/h TSR until repaired
Crossing nose condition, metal flow	K1a	K1b		1389 mm to < 1396 mm	A7	Routine scheduled inspection
	K2c	K2d		1386 mm to < 1389 mm	A6	Increase monitoring. Prioritise repair
Crossing nose condition, metal flow	K1a	K1b		1384 mm to < 1386 mm	A4	60/65 km/h TSR until repaired
	K2c	K2d		1382 mm to < 1384 mm	A3	40 km/h TSR until repaired
Crossing nose condition, metal flow	K1a	K1b		< 1382 mm	A1	10 km/h TSR until repaired
	K2c	K2d		15 mm to 20 mm width	A6	Increase monitoring. Prioritise repair
Crossing nose condition, metal flow	K1a	K1b		20 mm to 25 mm width	A3	40 km/h TSR until repaired
	K2c	K2d		> 25 mm wide	A1	10 km/h TSR until repaired
Crossing nose condition, metal flow	K1a	K1b		1 mm or more flow	A6	Increase monitoring. Prioritise repair
	K2c	K2d				

FIXED K CROSSING INPSECTION						
ELEMENT	MEASURE	MEASURE	COMMENT	CONDITION	RESPONSE	
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	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
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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
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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
Nuckle 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

FIXED K CROSSING INPSECTION						
ELEMENT	MEASURE	MEASURE	COMMENT	CONDITION	RESPONSE	
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	K1b		1360 mm to < 1365 mm	A6	Increase monitoring. Prioritise repair
	K2c	K2d		1365 mm to < 1370 mm	A3	40 km/h TSR until repaired
				≥ 1370 mm	A1	10 km/h TSR until repaired
Check rail flangeway	K1a	K1b		>49 mm	A4	60/65 km/h TSR until repaired
	K2c	K2d		48 mm to 49 mm	A6	Increase monitoring. Prioritise repair
				40 mm to < 48 mm	A7	Routine scheduled inspection
			38 mm to < 40 mm	A6	Increase monitoring. Prioritise repair	
			< 38 mm	A4	60/65 km/h TSR until repaired	
Check rail flare	K1a	K1b		1360 mm to < 1365 mm	A6	Increase monitoring. Prioritise repair
	K2c	K2d		1365 mm to < 1370 mm	A3	40 km/h TSR until repaired
				≥ 1370 mm	A1	10 km/h TSR until repaired
Check rail spacer blocks	K1	K2		Cracked	A4/A3	60/65 km/h TSR until repaired
				Broken but still effective	A3	Heavy Haul 40 km/h TSR until repaired
				Missing/Broken and ineffective	A1	40 km/h TSR until repaired
Check rail spacer blocks, bolts	K1	K2		Missing/ineffective ≤2	A4/A3	60/65 km/h TSR until repaired
				Missing/ineffective 3	A3	Heavy Haul 40 km/h TSR until repaired
				Missing/ineffective >3 or missing end bolt in check rail.	A1	40 km/h TSR until repaired
					A1	10 km/h TSR until repaired