



Bridge Detailed Examination Report

ELR: LJT	2	Contract Mileage: 024 m	0649	yds :	29.50 ch	s Struc.	Ref	113
Examination	n Type:	Bridge Detailed	NR ID): 120	15187	Exam Date:	13-	Feb-2014
Area:	Central	West	BRS:	0		OS Ref:	SH70	304480
Structure N	ame:	BR113		Type:	во	Exam	ID 5	026679
Route:		Blaneau Ffestiniog Branch		Complete Examination:			No	

Section A: To Be Completed By The Examining Organisation

	DDEN PARTS NOT EXAMINED EXCLUDING FOUNDATIONS)	Part					F	Reaso	n
ITEM	DESCRIPTION	LOCATION	Est. Cost £ +/- 20%	Priority Within	Quantity	Severity	Probability	Risk Score	Works Category
1	Prior to considering recommenation items below, review long term plan for this structure and consider replacement.	Structure r		1yr	1 unit				Other
2	Carry out HCE examination to confirr condition of main girders hidden by jack arches and tie bar ends (JAS, Band CUFPO).	bars	2000.00	1yr	1 unit	4	2	E8	Other
3	Carry out site investigation to determine remaining thickness to bottom flange of main girders with an ultrasonic meter and update level 0 assessment to determine current capacity.	Main girders	2000.00	1yr	1 unit	4	2	E8	Other
4	Remove defective paintwork throughout structure, clean exposed steel to sound surface, repair as necessary and apply an approved coating system.	Main girders and tie bars.	10000.00	1yr	1 unit	2	3	E6	Painting
5	Rake out to sound material and re- point isolated areas of deep open joints. Replace isolates missing stones to abutment.	Abutments, wingwalls and parapets	6000.00	4yrs	40 m2	2	3	M6	Hand Pointing
6	Replace parapet plates	Both elevations	5000.00	6mths	1 unit	5	2	M10	Steelwork Repairs
7	Remove fallen tree	Trawsfynydd end of bridge	750.00	1yr	1 unit	5	2	M10	Vegetation
8	Replace and make good missing stonework.	Upside high mileage wingwall/embankm ent	750.00	3yrs	0.15 m3	2	3	S6	Brickwork/Stone Repairs
9	Consider rewaterproofing the structure as part of programmed maintenance work.	Deck	10000.00	4yrs	1 unit	2	3	E6	Other

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.R: LJT2	Contract	Mileage	e: 02	4 m	064	9 <i>yd</i> :	s 29.	50 chs	Stru	Struc. Ref 113			
History of Live Significant Defects													
Description	Location	Exam Date	Access Gained	Exam Type	Rec Raised			Deter - ioration	Repaired	Flagged for Closure	Engineer Comments		
Severely corroded and holed parapet screens	Parapets	28/11/12	Y	V	Y	6	N	Baseline	N	N	The corroded parapet panels could easily be damaged by farm vehicles and offer very little protection in thier current condition.		
Severely corroded and holed parapet screens	Parapets	13/02/14	Y	D	Y	10	N	Z	Ν	N	The corroded parapet panels could easily be damaged by farm vehicles and offer very little protection in thier current condition.		
Fallen tree	Trawsfynydd end of bridge	13/02/14	Υ	D	Υ	10	N	Baseline	N/A	N	Remove		
Void in stonework	Upside high mileage wingwall	13/02/14	Y	D	Y	6	N	Baseline	N/A	N	1.2m long x 0.4m wide x 0.3m deep at base of wall adjacent to embankment.		
	Description Severely corroded and holed parapet screens Severely corroded and holed parapet screens Fallen tree	Description Severely corroded and holed parapet screens Severely corroded and holed parapet screens Parapets Fallen tree Trawsfynydd end of bridge Void in stonework Vpside high	Description Location Severely corroded and holed parapet screens Severely corroded and holed parapet screens Parapets 13/02/14 Fallen tree Trawsfynydd end of bridge Void in stonework Void in stonework Vosephic and Date Exam Date Exam Date 13/02/14 13/02/14 13/02/14	Description Location Exam Date Access Gained Severely corroded and holed parapet screens Severely corroded and holed parapet screens Parapets 13/02/14 Y Fallen tree Trawsfynydd end of bridge Void in stonework Upside high 13/02/14 Y	Description Location Exam Date Severely corroded and holed parapet screens Severely corroded and holed parapet screens Severely corroded and holed parapet screens Trawsfynydd end of bridge Void in stonework Void in stonework Location Exam Access Exam Type 28/11/12 Y U V D V D Location Exam Date Access Exam Type 13/02/14 Y D V D V D V D D D D D D D	Description Location Exam Gained Severely corroded and holed parapet screens Parapets 13/02/14 Fallen tree Trawsfynydd end of bridge Void in stonework Date Exam Gained Access Gained Type Rec Type Raised Access Gained Type Raised Type Type Nover Raised Type Type Raised Type T	Description Location Exam Date Gained Type Rec Raised Score Severely corroded and holed parapet screens Parapets 13/02/14 Y D Y 10 Fallen tree Trawsfynydd end of bridge Typide	Description Location Exam Date Access Gained Type Rec Raised Risk Score Req'd Severely corroded and holed parapet screens Parapets 13/02/14 Y D Y 10 N Fallen tree Trawsfynydd end of bridge Tawsfynydd	Description	Description Location Exam Date Access Gained Type Raised Risk Score Req'd Indication Repaired	Description Location Exam Date Date		

Engineers Notes

Signed	Name	Date	24-Apr-2014
For Employer			

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ELR: LJT2 Struc. Ref Contract Mileage: 024 m 0649 yds 29.50 chs 113

NR ID 12015187 Exam ID 5026679 6410 Structure Type BO **Rpt ID**

SH70304480 OS Ref: Contract Mileage: 024 m 0649 yds 29.50 chs

Primary Material: Not Recorded Secondary Material: Not Recorded

Blaneau Ffestiniog Branch

Name: **BR113** **Exam Date**

13/2/2014

Last Detailed 14/10/2007 Last Visual 28/11/2012

Site Sketch / Elevation Photograph



Location Plan







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ELR: LJT2 Contract Mileage: 29.50 chs Struc. Ref 024 m 0649 yds 113 N/E = Not Examined N/A = Not Applicable Name of Part Main Girders Fair **Examiner's General Comments** Cross Girders Structure in fair condition at time of examination, but in need of Rail Bearers repointing and painting. Jack Arch Floor Fair Rivets & Bolts Arch Ring Spandrels Abutments Fair Wing & retaining Walls Fair Fair Parapets & Pilasters Columns & Cylinders Trestles & Crossheads Fair Bedstones & Cills Bearings Ballast Plates/Boards Longitudinal Timbers Waterproofing Fair Has all the structure been viewed? No Drainage _ Gutters & Downpipes Underside of main girders only examined - remainder hidden by Handrails jack arches Painting Poor Track & Road Condition Poor Revetment Walls YES Vegetation Debris NO Visibility of Signs Has the structure been viewed under load? Yes Rubbish NO Tie Bars Poor No road vehicles using bridge at time of examination -Insert 'X' for Change of Construction Closed Line Χ **SIGNED** C.W.R. Rail Joints **EXAMINERS NAME** 25T Axle/Abnormal Rd Loads Weight Restriction Plates Χ **DATE** 23-Apr-2014 Inaccessible Parts Х Tell Tales/Avonguards Plumbing Points

Network Rail

NETWORK RAIL



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024 m

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STATUS OF PREVIOUSLY RECORDED SIGNIFICANT DEFECTS and STATUS OF RECOMMENDATIONS MADE AT PREVIOUS EXAMINATION

DEFECT No: 1, Renew corroding tie bars beween maingirders., located at struture, STATUS: has not been actioned.

The Recommendation to Consideration should be given to the careful removal of the fallen tree., 1unit, located at Trackside (Disused), has not been actioned.

The last detailed examination report was incomplete and the unexamined parts are identified below Underside of main girders only examined - remainder hidden by jack arches

I confirm that the last visual and detailed examination reports have been reviewed and the dates of the said report are given in this report.

GENERAL DESCRIPTION

This structure carries an occupation road leading to a farm on the upside, over a disused branch line. It is constructed of four steel main girders with three brick jack arches in between on stone abutments and wing walls the parapets on the span are of mild steel panels.

The examination was tactile and carried out utilising ladders, prodders and hammers.

DIMENSIONS

Running edge of down rail to downside parapet – 1m.

Running edge of up rail to upside parapet – 1m.

Height - 4.5m

Length of abutment - 4m

Span - 4.1m

MAIN GIRDERS 305mm high x 130mm wide

Both outer main girders – severe corrosion with knife edging throughout outer edge of top flange Photo 6, Both outer and both inner main girders – extensive moderate/severe corrosion sores throughout bottom face of bottom flange. Photo 7,

JACK ARCHES

All 3no brick jack arches in generally good condition, apart from water seepage - see Waterproofing item.

ABUTMENTS

Both abutments – similar, 1mm wide vertical, stepped bed joint fractures, from ground level to top, at centre of abutments – as last detailed examination. Photos 8,9

Open joints/missing stones to 150mm deep, generally throughout both abutments – 20m.sq total. Photos 10,11 Occasional, isolated missing stones, to 150mm sq., generally throughout upside abutment. Photo 11

WING WALLS

Upside, Blaenau end wing wall – area of void, 1.2m. long x 400mm wide x 300mm deep, at connection between base of wall and embankment – suspect washout to embankment, beneath the base of the wall, of longstanding. Photo 12

Occasional, isolated open joints, to 100mm deep, generally throughout all 4no wing walls – 8m.sq total. Photo 13

PARAPETS 10mm thick steel plate panels on 75mm.sq. angle stiffeners, over branch, line both sides. Masonry walls on approaches.

All 3no plate panels on each parapet severely corroded, with numerous holes, to 50mm diameter, and knife edging around, mainly at connection with angle stiffeners. Photos 14,15

Occasional, isolated open joints, to 100mm deep, generally throughout all 4no parapet approach walls – 8.sq total. Photo 16

POINTING





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See open joints at abutments, wing walls and parapet approach walls - 40m sq total.

PAD STONES

All pad stones carrying main inner and outer girders in generally good condition, apart from water staining – see Waterproofing item

WATER PROOFING

Areas of moderate/heavy water seepage, generally throughout all 3no jack arches, mainly at connection with main girders, and down inner face of both abutments and all 8no pad stones Photos 17, 18, 19

PAINTING

Paint cover generally broken down, and now largely non-existent - allowing extensive corrosion throughout superstructure. Photo 20.

TRACK/ROAD OVER

Tarmac surfaced road over, leading to farm on upside – in generally satisfactory condition, although with grass verges on each side, growing against steel parapets.

Note- this (freight only) line has not carried rail traffic for approximately 20 years, with the line in the vicinity of this structure now heavily overgrown with brambles, saplings etc., with a fallen tree partially blocking the branch line, 10m towards the Trawsfynydd end Photos 21, 22

VEGETATION

Bushes/saplings growing in embankment within 2m of all 4no wing walls. Photo 23

TIE BARS 1no. at centre of each jack arch

All 3no. tie bars severely corroded at connection with jack arches, wasted to 10mm out of original 35mm. Photo 24

WEIGHT RESTRICTION PLATES

10 Ton weight restriction plates on both approaches to span – clear and visible with no evidence of non-compliance. Photo 25

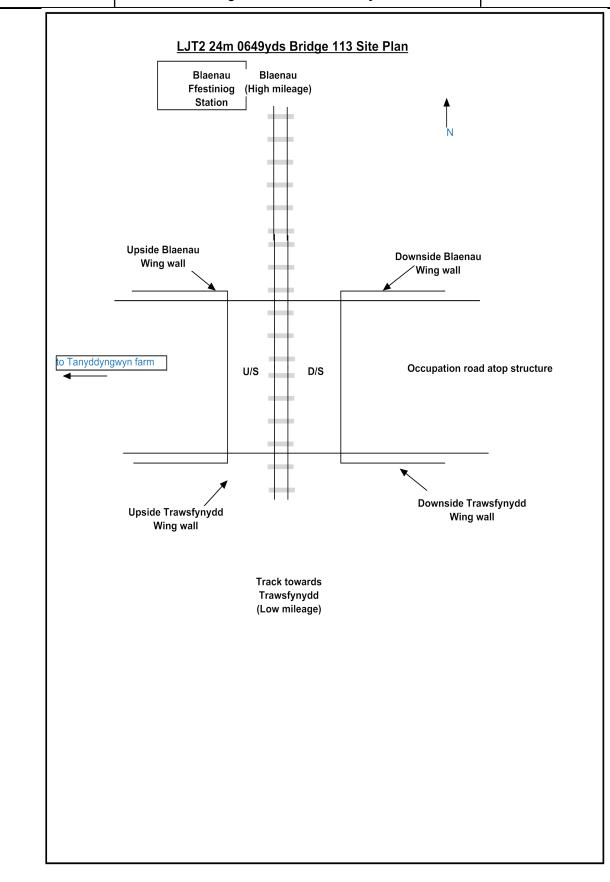
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Photo 1 Trawsfynydd end elevation 13/02/2014



Photo 2 Blaenau end elevation 13/02/2014





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Photo 3 road over looking towards upside 13/02/2014



Photo 4 road over looking towards downside 13/02/2014





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Photo 5 general view of soffit 13/02/2014



Photo 6 typical corrosion to outer main girders 13/02/2014





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Photo 7 typical corrosion to inner main girders 13/02/2014



Photo 8 fracture at downside abutment 13/02/2014





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Photo 9 fracture at upside abutment 13/02/2014



Photo 10 open joints at downside abutment 13/02/2014





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Photo 11 open joints at upside abutment 13/02/2014



Photo 12 void at upside Blaenau end wing wall 13/02/2014





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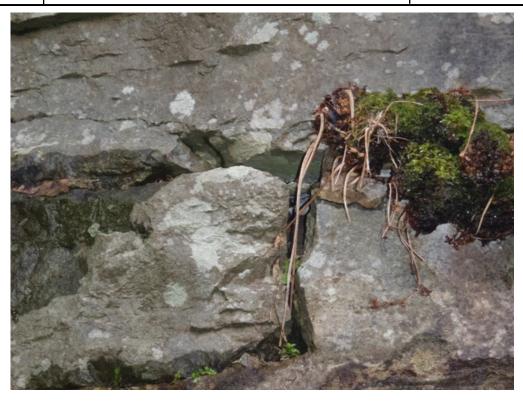


Photo 13 typical open joint at wing walls 13/02/2014



Photo 14 corrosion to Blaenau end parapet 13/02/2014





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Photo 15 corrosion to Trawsfynydd end parapet 13/02/2014



Photo 16 typical open joints at parapets 13/02/2014



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Photo 17 typical water staining at jack arches 13/02/2014



Photo 18 typical water staining at abutments 13/02/2014





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Photo 19 typical water staining at pad stones 13/02/2014



Photo 20 typical paint break down at parapets 13/02/2014





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Photo 21 track view looking towards Blaenau 13/02/2014



Photo 22 track view looking towards Trawsfynydd 13/02/2014





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Photo 23 vegetation at wing walls 13/02/2014



Photo 24 corroded tie bar 13/02/2014





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Photo 25 signage 13/02/2014

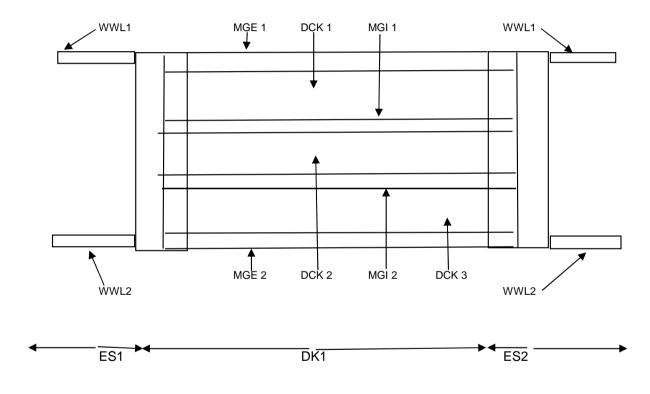
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Territory	ELR	Structure No	Start Mileage	Group	Туре	RAR ID	Structure Name	Exam Date	Task Year	Exam Type	Examiners Name	Weather
TWES	LJT2	113	24.0649	BB	BBO		NEADD DDU	13/02/2014	13_14	D		FAIR

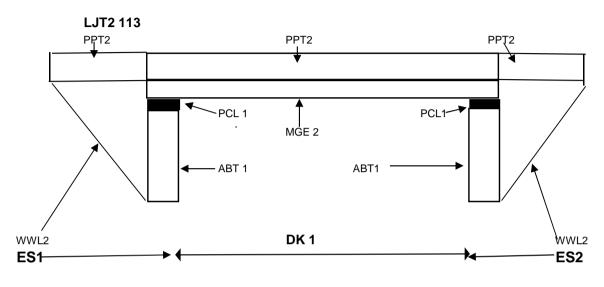
Major El	ement	Mi	nor Eler	ment	Metal / N	•	Coated Cracked		Comments
Code	No	Code	No	Material	S/Ex 1	S/Ex 2	S/Ex 1	S/Ex 2	Note: This free text area of the report should be used extensively and can be enlarged as necessary.
ES	1	WWL	1	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout.
ES	1	WWL	2	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout.
ES	1	ABT	1	В	Ex3	C3	J7	A1	Occasional isolated missing stones, open joints to 150mm deep. Areas of heavy water staining throughout. 1No vertical bed joint fracture of longstanding.
ES	1	PCL	1	В	B5	A1	A1	A1	✓ Moderate water staining throughout inner face of pad stones
ES	2	WWL	1	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 50mm deep. Areas of slight water staining throughout.
ES	2	WWL	2	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout.
ES	2	ABT	1	В	Ex3	C3	J7	A1	Occasional isolated missing stones, open joints to 150mm deep. Areas of heavy water staining throughout. 1No vertical bed joint fracture of longstanding.
ES	2	PCL	1	В	B5	A1	A1	A1	Moderate water staining throughout inner face.
DK	1	PPT	1	М	F4	D6	L6	A1	✓ Holed, knife edging. Extensive surface corrosion throughout parapet panels. Paint cover broken down.
DK	1	PPT	2	М	F4	D6	L6	A1	Holed, knife edging. Extensive surface corrosion throughout parapet panels. Paint cover broken down.
ES	1	PPT	1	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout
ES	1	PPT	2	В	C3	В3	A1	A1	Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout
ES	2	PPT	1	В	C3	В3	A1	A1	Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout
ES	2	PPT	2	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout
DK	1	MGE	1	М	F3	D5	L6	A1	Extensive corrosion with loss of section throughout outer edges. Moderate corrosion sores throughout bottom flange. Paint cover broken down.
DK	1	DCK	1	В	B5	A1	A1	A1	Moderate water staining throughout jack arch
DK	1	MGI	1	М	D5	C5	L6	A1	Extensive moderate surface corrosion sores throughout bottom flange. Paint cover broken down.
DK	1	DCK	2	В	B5	A1	A1	A1	Moderate water staining throughout jack arch
DK	1	MGI	2	М	D5	C5	L6	A1	Extensive moderate surface corrosion sores throughout bottom flange. Paint cover broken down.
DK	1	DCK	3	В	B5	A1	A1	A1	Moderate water staining throughout jack arch
DK	1	MGE	2	М	F3	D5	L6	A1	Extensive corrosion with loss of section throughout outer edges. Moderate corrosion sores throughout bottom flange. Paint cover broken down.
DK	1	BRG	1	М	E5	D5	L6	K5	Extensive section loss, only 10mm remaining in places, no paint cover.
DK	1	BRG	2	М	E5	D5	L6	K5	Extensive section loss, only 10mm remaining in places, no paint cover.
DK	1	BRG	3	М	E5	D5	L6	K5	Extensive section loss, only 10mm remaining in places, no paint cover.

	Major Element													
Code	No	Material	Span No	٧										
ES	1	В	1	✓										
DK	1	М	1	✓										
ES	2	В	1	✓										

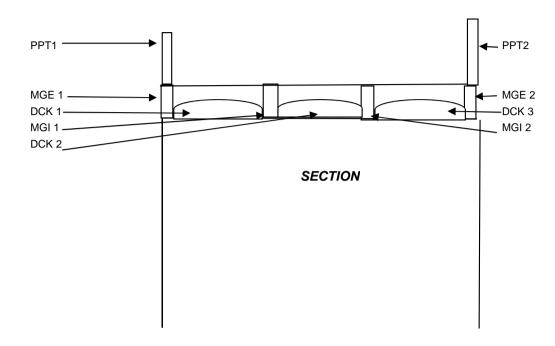
PLAN



LOW MILEAGE



LOW MILEAGE ELEVATION



Territory	ELR	Structure No	Start Mileage	Group	Туре	RAR ID	Structure Name	Exam Date	Task Year	Exam Type	Examiners Name	Weather
TWES	LJT2	113	24.0649	BB	BBO		NEADD DDU	13/02/2014	13_14	D		FAIR

					Metal / N	lasonry /	Coated	Metal /	Comments	S	core	s
Major El Code	lement No	M Code	inor Eler No	ment Material	Concrete S/Ex 1	S/Ex 2	Cracked S/Ex 1		V Note: This free text area of the report should be used extensively and can be enlarged as necessary.		Maj El BCMI	BCMI
DK	1	BRG	1	М	E5	D5	L6	K5	Extensive section loss, only 10mm remaining in places, no paint cover.	15	40	64
DK	1	BRG	2	М	E5	D5	L6	K5	Extensive section loss, only 10mm remaining in places, no paint cover.	15		
DK	1	BRG	3	М	E5	D5	L6	K5	Extensive section loss, only 10mm remaining in places, no paint cover.	15		
DK	1	DCK	1	В	B5	A1	A1	A1	Moderate water staining throughout jack arch	85		
DK	1	DCK	2	В	B5	A1	A1	A1	Moderate water staining throughout jack arch	85		
DK	1	DCK	3	В	B5	A1	A1	A1	Moderate water staining throughout jack arch	85		
DK	1	MGE	1	М	F3	D5	L6	A1	Extensive corrosion with loss of section throughout outer edges. Moderate corrosion sores throughout bottom flange. Paint cover broken down.	30		
DK	1	MGE	2	М	F3	D5	L6	A1	Extensive corrosion with loss of section throughout outer edges. Moderate corrosion sores throughout bottom flange. Paint cover broken down.	30		
DK	1	MGI	1	М	D5	C5	L6	A1	Extensive moderate surface corrosion sores throughout bottom flange. Paint cover broken down.	35		
DK	1	MGI	2	М	D5	C5	L6	A1	Extensive moderate surface corrosion sores throughout bottom flange. Paint cover broken down.	35		
DK	1	PPT	1	М	F4	D6	L6	A1	Holed, knife edging. Extensive surface corrosion throughout parapet panels. Paint cover broken down.	10		
DK	1	PPT	2	М	F4	D6	L6	A1	Holed, knife edging. Extensive surface corrosion throughout parapet panels. Paint cover broken down.	10		
ES	1	ABT	1	В	Ex3	C3	J7	A1	Occasional isolated missing stones, open joints to 150mm deep. Areas of heavy water staining throughout. 1No vertical bed joint fracture of long	60	77	
ES	1	PCL	1	В	B5	A1	A1	A1	Moderate water staining throughout inner face of pad stones	85		
ES	1	PPT	1	В	C3	В3	A1	A1	Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout	85		
ES	1	PPT	2	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout	85		
ES	1	WWL	1	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout.	85		
ES	1	WWL	2	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout.	85		
ES	2	ABT	1	В	Ex3	СЗ	J7	A1	Occasional isolated missing stones, open joints to 150mm deep. Areas of heavy water staining throughout. 1No vertical bed joint fracture of long	60	77	
ES	2	PCL	1	В	B5	A1	A1	A1	Moderate water staining throughout inner face.	85		
ES	2	PPT	1	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout	85		
ES	2	PPT	2	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout	85		
ES	2	WWL	1	В	C3	В3	A1	A1	Occasional isolated open joints to 50mm deep. Areas of slight water staining throughout.	85		
ES	2	WWL	2	В	C3	В3	A1	A1	✓ Occasional isolated open joints to 100mm deep. Areas of slight water staining throughout.	85		<u> </u>
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