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Reporting Inspector	Ian Patterson ICorr level 3	Visit Date(s)	24-07-2019
Authorised By	Ian Patterson ICorr level 3	# of Visits	1
Report Authorised	07-08-2019	Description	Original Document
Project Details			
Project Name	Newport Transporter Bridge	Historical Information	No
Asset Name (Number)	Newport Transporter Bridge	Previous Painting Programme	No
Site Address	Newport, Wales	Existing Paint Info	No
			
Environment Classification			
Atmospheric Corrosivity		C4 - High	
Appendices			
A01 - Lead, Chromium and Cadmium sample results - 07-08-2019			

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Section	Contents
1	Survey Details
2	Appraisal
3	Dry Film Coating Thickness Gauge Tests
4	Adhesion Tests
5	Coating Identification
6	Evaluation of Degradation of Coatings
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1: Survey Details

Details

Survey Shift: Day Time
Access: Good - 0%

Notes

Paint Inspection Ltd (PIL) had been contracted by Curtins to undercoat paint sample testing and carry out a general assessment of the current coating system to the Newport Transporter Bridge.

As part of the inspection, a series of adhesion and paint thickness testing was carried out along with assessment of the paint layers.

Paint samples were collected from 13No locations as required by the client. The testing was to identify if the current coating system contains Lead, Cadmium or Chromium. This report details the locations and results (see section 5), also attached is the Laboratory test results (Appendices 01).

For simplicity, the discussion within the Appraisal and Summary has been broken into 5 locations as follows:

1. Gondola Topside and Underside
2. Eastern Approach Topside and Underside
3. Motor House
4. Main Boom General
5. Pylons

Access was gained from the main walkways.

For reference, the adhesion pass value has been set at 725psi (5Mpa). This is generally what is required by the paint manufacturers for overcoating etc, although it is a value that should be used as a guide only; due to other factors which affect the durability of a coating system.

As this was a one day survey visit, not all the coated steelwork could be fully inspected, so the corrosion % values stated within this report are to be used as a guide only.

Equipment Used

Name	Manufacturer	Model	Serial #
DFT F1 Probe 456T new (135)	Elcometer	F1 Probe	PH06532
Defelsko AT-A (TB) Adhesion (194)	Defelsko	AT-A Adhesion Tester	AT12123

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2: Appraisal

Overall Condition of the Current Coating System

C: Moderate

- Moderate corrosion at area of coating breakdown
- Light corrosion scale is observed but is tightly adhered to substrate
- Small blisters & some light pitting

Appraisal Notes

Gondola Topside and Underside:

Assessment of the coating system and corrosion levels to the topside steel elements, revealed approx 20% moderate corrosion levels and general delamination and flaking. A series of paint film thickness readings were taken, with average readings from two batches of 322 and 579 microns. Paint layer assessment revealed up to 5 layers from the sample taken and analysed. The adhesion values were good with two tests carried out giving pressure values of 932psi and 1414psi, with intercoat breaks.

The above deck paint sample analysed provide a Lead result of 3.3%.

The below deck has approx up to 30% moderate corrosion. No adhesion test was carried out, as our recommendation for the steelwork would be fully blast clean back to bare steel and repaint. For reference, up to 19No paint layers were identified with average paint thickness of 1364microns. The majority of the readings were above the gauge capabilities of 1600microns.

Eastern Approach Topside and Underside

The topside lattice steelwork has approx up to 25% corrosion, mainly moderate although heavy in places. The paint film thickness revealed an average of 424microns and up to 5 paint layers were identified in the sample taken and analysed. The adhesion values were good with pressure values of 772psi and 769psi.

The underside primary steelwork is suffering of heavy corrosion up to 50%. No adhesion testing was carried out as our recommendation would be to fully blast clean back to bare steel and repaint. For reference, the paint thickness average is 742microns and up to 5 paint layers were identified in the sample taken and analysed.

The primary steelwork analysed provide a lead result of 7%.

Motor House:

The primary/supporting steelwork has moderate corrosion levels up to 10%. The corrosion/breakdown is mainly to edges, corners, fixings etc. A paint film thickness testing reveal average thickness of 394microns and up to 4 paint layers identified in the sample taken and analysed. One adhesion test was carried out which gave good adhesion pressure value of 1261psi.

Main Boom General

Overall the assessment on corrosion levels to the Main Boom is up to 5% moderate corrosion. The corrosion and breakdown was mainly to edges, corners, fixings. Two paint thickness batches were taken, with average readings of 1143 and 1106microns and upto 5 paint layers identified in the samples taken and analysed. Two adhesion tests were carried out with one on the vertical member given a failure of 40psi and the second test giving a pressure reading of 543psi.

The paint sample taken from the Internal Bracing cable, provide a Lead result of 2.6%.

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Pylons:

The west pylon was inspected and tested. Overall there is approx 5% moderate corrosion which once again is mainly on the edges, in corners, fixings. It was noted on the west pylon that there is widespread delamination/flaking paint, from the location of inspection it would seem that the top layer(s) is delaminating from the undercoats. The likely cause of failure is from the previous painting programme, where either the surface was not sufficiently cleaned/abraded, paint applied out of specification, or the overcoating times were not adhered to.

The paint thickness testing revealed an average of 671microns and up to 11 paint layers identified from the sample taken and analysed. The adhesion test gave a pressure reading of 1028psi.

To summarize all test data:

Apart from the one test, the adhesion testing revealed good adhesion of the coating system. The paint thickness and layers ranged, and so from this data we can only assume maintenance painting was carried out a different times to the various sections i.e. priority to an area showing sign of corrosion and general coating breakdown. The critical areas of corrosion is to the underside of the Eastern Approach and Gondola, although there is concern over the failed adhesion test to the main boom vertical.

The actual test data can be found in the following sections: Paint film thickness Section 3, Adhesion test data Section 4, Coating layers and Sample results 5 and Evaluation of Degradation Section 6.

Of the 13 paint samples analysed for Lead, Cadmium, Chromium, only 3 samples provided a positive Lead results above 1%.

Summary and Recommendations Section 7

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3: Dry Film Coating Thickness Gauge Tests

Date	Test Area	Standard	Equipment Serial#	# of Readings	Lowest	Highest	Mean/Average
24-07-2019	T2 Gondola Above Deck Primary Steelwork	ISO 2808	DFT F1 Probe 456T new (135)	88	212 µm	1173 µm	579 µm
Notes: Tested by: Ian Patterson ICorr level 3							
24-07-2019	T2b Gondola Above Deck Primary Steelwork	ISO 2808	DFT F1 Probe 456T new (135)	122	73 µm	1149 µm	322 µm
Notes: Tested by: Ian Patterson ICorr level 3							
24-07-2019	T5 Eastern Approach Lattice Parapet topside	ISO 2808	DFT F1 Probe 456T new (135)	160	168 µm	1155 µm	424 µm
Notes: Tested by: Ian Patterson ICorr level 3							
24-07-2019	T5b Eastern Approach Underside steelwork	ISO 2808	DFT F1 Probe 456T new (135)	112	145 µm	1263 µm	747 µm
Notes: Tested by: Ian Patterson ICorr level 3							
24-07-2019	T4 Motor house steelwork	ISO 2808	DFT F1 Probe 456T new (135)	116	159 µm	659 µm	394 µm
Notes: Tested by: Ian Patterson ICorr level 3							
24-07-2019	T6 Gondola Underside steelwork	ISO 2808	DFT F1 Probe 456T new (135)	44	567 µm	1597 µm	1364 µm
Notes: There were approx 120 readings taken with the majority not recorded as the thickness was above the probe capabilities of 1600microns. Tested by: Ian Patterson ICorr level 3							
24-07-2019	T10 Main boom vertical steelwork	ISO 2808	DFT F1 Probe 456T new (135)	106	421 µm	1598 µm	1143 µm
Notes: Tested by: Ian Patterson ICorr level 3							
24-07-2019	T11 Main boom primary steelwork	ISO 2808	DFT F1 Probe 456T new (135)	68	262 µm	1545 µm	1106 µm
Notes: Tested by: Ian Patterson ICorr level 3							

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24-07-2019	T13 West Pylon	ISO 2808	DFT F1 Probe 456T new (135)	134	312 µm	1339 µm	671 µm
Notes: <i>Tested by: Ian Patterson ICorr level 3</i>							

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4: Adhesion Tests

4: Pull Off Adhesion Tests

Date	24-07-2019
Type	Hydraulic Pull Off
Equipment	Defelsko AT-A (TB) Adhesion (194)
Dolly Size	20mm
Adhesive Type	Turbo fuse/Cyanoacrylate

Date	Test Area	Standard	Result	Fracture Strength
24-07-2019	T2 Gondola Above Deck	ISO 16276-1	Pass	1414 PSI
Adhesion Failure	m/n - adhesive failure between mth coat and nth coat of a multicoat system			100%
Cohesion Failure				0%
Glue Failure				0%

Notes:

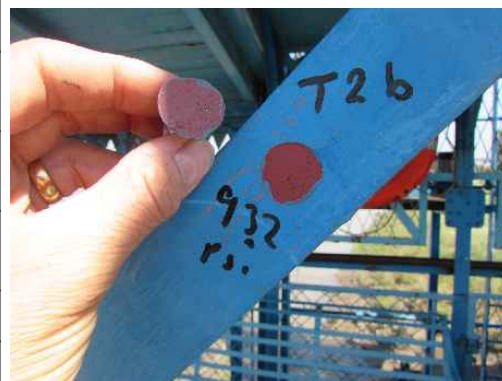
Tested by: Ian Patterson ICorr level 3



Date	Test Area	Standard	Result	Fracture Strength
24-07-2019	T2b Gondola Above Deck	ISO 16276-1	Pass	932 PSI
Adhesion Failure	B/C - adhesive failure between 1st and 2nd coat			100%
Cohesion Failure				0%
Glue Failure				0%

Notes:

Tested by: Ian Patterson ICorr level 3

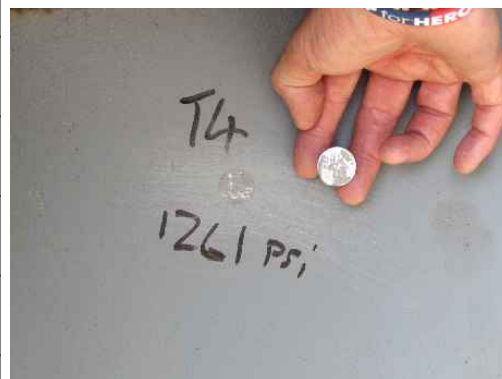


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Date	Test Area	Standard	Result	Fracture Strength
24-07-2019	T4 Motor house	ISO 16276-1	Pass	1261 PSI
Adhesion Failure	m/n - adhesive failure between mth coat and nth coat of a multicoat system			50%
Cohesion Failure				0%
Glue Failure	Y/Z adhesive failure between adhesive and dolly			50%

Notes:

Tested by: Ian Patterson ICorr level 3



Date	Test Area	Standard	Result	Fracture Strength
24-07-2019	T5 Eastern Approach lattice topside	ISO 16276-1	Pass	772 PSI
Adhesion Failure	C/m - adhesive failure between 2nd coat and mth coat of a multicoat system			100%
Cohesion Failure				0%
Glue Failure				0%

Notes:

Tested by: Ian Patterson ICorr level 3



Date	Test Area	Standard	Result	Fracture Strength
24-07-2019	T5b Eastern Approach lattice steelwork	ISO 16276-1	Pass	769 PSI
Adhesion Failure	m/n - adhesive failure between mth coat and nth coat of a multicoat system			100%
Cohesion Failure				0%
Glue Failure				0%

Notes:

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Date	Test Area	Standard	Result	Fracture Strength
24-07-2019	T10 Main boom vertical steelwork	ISO 16276-1	Fail	40 PSI
Adhesion Failure	m/n - adhesive failure between mth coat and nth coat of a multicoat system			100%
Cohesion Failure				0%
Glue Failure				0%

Notes:

Tested by: Ian Patterson ICorr level 3



Date	Test Area	Standard	Result	Fracture Strength
24-07-2019	T10 Main boom vertical steelwork	ISO 16276-1	Fail	543 PSI
Adhesion Failure	B/C - adhesive failure between 1st and 2nd coat			100%
Cohesion Failure				0%
Glue Failure				0%

Notes:

Tested by: Ian Patterson ICorr level 3



Date	Test Area	Standard	Result	Fracture Strength
24-07-2019	T13 Pylon (west)	ISO 16276-1	Pass	1028 PSI
Adhesion Failure				0%
Cohesion Failure	B - cohesive failure of 1st coat			100%
Glue Failure				0%

Notes:

Tested by: Ian Patterson ICorr level 3



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5: Coating Identification

Test Area	# of Coats	Identified		Solvent Testing		Type	
		Metal Spray	Hazardous Material	Using Xylene	Using White Spirit	Coating Polymer	Coating
T1 Gondola suspension cables	5	No	No	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T2 Gondola Above Deck Primary steelwork	5	No	No	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T3 Anchor cables	2	No	No	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T4 Motor House primary steelwork	4	No	No	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T5 Eastern Approach primary steelwork	5	No	Yes - Lead 7%	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T6 Gondola Below deck primary steelwork	19	No	Yes - Lead 3.3%	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T7 Saddle primary steelwork	4	No	No	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T8 Stay cables	1	No	No	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T9 Traveller primary steelwork	5	No	No	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T10 Main boom vertical primary steelwork	5	No	No	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T11 Main boom plan primary steelwork	5	No	No	No Reaction	No Reaction	Convertible	Unknown
	Notes:						

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Test Area	# of Coats	Identified		Solvent Testing		Type	
		Metal Spray	Hazardous Material	Using Xylene	Using White Spirit	Coating Polymer	Coating
T12 Main boom internal bracing cables	3	No	Yes - Lead 2.6%	No Reaction	No Reaction	Convertible	Unknown
	Notes:						
T13 Pylons primary steelwork	11	No	No	No Reaction	No Reaction	Non-Convertible	Unknown
	Notes:						

Convertible: The coatings cure principally by one of several types of polymerization, although evaporation may also be involved. The resins used in convertible coatings undergo a chemical change when the coating cures. So the dry film is not resoluble when solvent is applied. During a solvent sensitivity test the coating system would not react.

Non-Convertible: These coatings cure solely by the evaporation of a solvent. The resins used in non-convertible coatings do not change chemically when the coatings harden, and such these coatings are resoluble when a solvent is applied. During a solvent sensitivity test these type of coatings would react.

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6: Evaluation of Degradation of Coatings

T2 Gondola Above deck primary steelwork	Standard	Severity	Size
Assessment of Degree of Blistering	ISO 4628-2	No Blistering	No Blistering
Assessment of Degree of Rusting	ISO 4628-3	Moderate	15%
Assessment of Degree of Cracking	ISO 4628-4	No Cracks	No Preferential Direction
Assessment of Degree of Flaking/Delamination	ISO 4628-5	0%	No Flaking/Delamination
Assessment of Degree of Chalking	ISO 4628-6	No Chalking	0%

T4 Motor house primary steelwork	Standard	Severity	Size
Assessment of Degree of Blistering	ISO 4628-2	No Blistering	No Blistering
Assessment of Degree of Rusting	ISO 4628-3	Moderate	10%
Assessment of Degree of Cracking	ISO 4628-4	No Cracks	No Preferential Direction
Assessment of Degree of Flaking/Delamination	ISO 4628-5	0%	No Flaking/Delamination
Assessment of Degree of Chalking	ISO 4628-6	No Chalking	0%

T5 Eastern approach topside lattice steelwork	Standard	Severity	Size
Assessment of Degree of Blistering	ISO 4628-2	No Blistering	No Blistering
Assessment of Degree of Rusting	ISO 4628-3	Heavy	25%
Assessment of Degree of Cracking	ISO 4628-4	No Cracks	No Preferential Direction
Assessment of Degree of Flaking/Delamination	ISO 4628-5	0%	No Flaking/Delamination
Assessment of Degree of Chalking	ISO 4628-6	No Chalking	0%

T5b Eastern approach underside steelwork	Standard	Severity	Size
Assessment of Degree of Blistering	ISO 4628-2	No Blistering	No Blistering
Assessment of Degree of Rusting	ISO 4628-3	Heavy	50%
Assessment of Degree of Cracking	ISO 4628-4	No Cracks	No Preferential Direction
Assessment of Degree of Flaking/Delamination	ISO 4628-5	0%	No Flaking/Delamination
Assessment of Degree of Chalking	ISO 4628-6	No Chalking	0%

T6 Gondola Below deck primary steelwork	Standard	Severity	Size
Assessment of Degree of Blistering	ISO 4628-2	No Blistering	No Blistering
Assessment of Degree of Rusting	ISO 4628-3	Heavy	30%
Assessment of Degree of Cracking	ISO 4628-4	No Cracks	No Preferential Direction
Assessment of Degree of Flaking/Delamination	ISO 4628-5	0%	No Flaking/Delamination
Assessment of Degree of Chalking	ISO 4628-6	No Chalking	0%

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T9 Traveller primary steelwork	Standard	Severity	Size
Assessment of Degree of Blistering	ISO 4628-2	No Blistering	No Blistering
Assessment of Degree of Rusting	ISO 4628-3	Moderate	5%
Assessment of Degree of Cracking	ISO 4628-4	No Cracks	No Preferential Direction
Assessment of Degree of Flaking/Delamination	ISO 4628-5	0%	No Flaking/Delamination
Assessment of Degree of Chalking	ISO 4628-6	No Chalking	0%

T10 Main boom vertical primary steelwork	Standard	Severity	Size
Assessment of Degree of Blistering	ISO 4628-2	No Blistering	No Blistering
Assessment of Degree of Rusting	ISO 4628-3	Moderate	5%
Assessment of Degree of Cracking	ISO 4628-4	No Cracks	No Preferential Direction
Assessment of Degree of Flaking/Delamination	ISO 4628-5	0%	No Flaking/Delamination
Assessment of Degree of Chalking	ISO 4628-6	No Chalking	0%

T11 Main boom plan primary steelwork	Standard	Severity	Size
Assessment of Degree of Blistering	ISO 4628-2	No Blistering	No Blistering
Assessment of Degree of Rusting	ISO 4628-3	Moderate	5%
Assessment of Degree of Cracking	ISO 4628-4	No Cracks	No Preferential Direction
Assessment of Degree of Flaking/Delamination	ISO 4628-5	0%	No Flaking/Delamination
Assessment of Degree of Chalking	ISO 4628-6	No Chalking	0%

T13 Pylon primer steelwork (stair access on the west)	Standard	Severity	Size
Assessment of Degree of Blistering	ISO 4628-2	No Blistering	No Blistering
Assessment of Degree of Rusting	ISO 4628-3	Moderate	5%
Assessment of Degree of Cracking	ISO 4628-4	No Cracks	No Preferential Direction
Assessment of Degree of Flaking/Delamination	ISO 4628-5	15%	Larger than 30mm
Assessment of Degree of Chalking	ISO 4628-6	No Chalking	0%

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Gondola Topside
Heavy corrosion and breakdown.



Gondola Topside
Corrosion to framework members.



Gondola Topside
Covered seating, deck plate showing coating delamination and flaking.



Gondola Topside
General overview of Gondola drivers cabin.

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Motor House

Corrosion to edges and fixings.



Motor House

Photo showing corrosion on the edges and joints, along with crevice corrosion.



Motor House

Overview photo, corrosion is consistent on edges, joints along with crevice corrosion.



Motor House

General view of underside showing corrosion to edges and joints.

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Eastern Approach Topside Lattice

Photo showing corrosion on cross members.



Eastern Approach Topside Lattice

Photo showing heavy corrosion at interface with cross members and upright.



Eastern Approach Underside

Overview of steelwork underside, heavy corrosion on members.



Eastern Approach Underside

Heavy corrosion and breakdown on underside members.

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Eastern Approach Underside

Underside, bottom flange, heavy corrosion and total breakdown of the coating system.



Gondola Underside

General view of the steelwork showing corrosion on members.



Gondola Underside

Photo showing corrosion to supporting members.



Gondola Underside

Photo showing corrosion to all supporting members.

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Main Boom Traveller Steelwork
General overview of the Main boom steelwork.



Main Boom Traveller Steelwork
Overview of corrosion.



Main Boom Vertical Steelwork
Corrosion and breakdown.



Main Boom Vertical Steelwork

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Main Boom Primary Steelwork
Corrosion at interface between steel members.



Main Boom Primary Steelwork



Main Boom Primary Steelwork
Heavy Corrosion on main boom steelwork.



West Pylon
Overview of underside, corrosion on edges, joints and fixings.

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West Pylon

Corrosion on edges of cross member.



West Pylon

Photo shows the extent of the delamination of the top coats.

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7: Summary

Gondola Topside and Underside:

The coated steelwork topside, has good adhesion and average paint thickness. Whilst there is approx 20% corrosion, the coating can be repaired and overcoated. Some corrosion locations are heavy and will either require replacement of the steel members, or further assessment on treatment to provide ongoing durability.

The coating system underside will require to be removed (preferable by blast cleaning) back to the bare steelwork and a major repainting programme put into place to reinstate the coating to provide long term durability and protection from corrosion. We do not recommend carrying out patch repair.

Eastern Approach Topside and Underside:

Due to the corrosion levels, the coated steelwork topside and underside will require major maintenance, by fully blast cleaning and application of a coating system to provide long term durability and corrosion protection.

We do not recommend patch repair.

Motor House:

Overall the coating system to the primary steelwork is in a repairable condition. The adhesion values are good and the current coating system is not overly thick. Areas of breakdown and corrosion were mainly noted on the edges, corners, fixings etc, so these areas will require attention to ensure good preparation and coating thickness to provide long term durability.

Main Boom General:

the client confirmed that they have a major maintenance repainting programme over the next 2 years. The plan is to fully blast clean and application of a new coating system to all Main Boom members. From the data collected i.e poor adhesion and multi paint layers etc, our recommendation would be inline with the clients current scope.

Pylons:

The coating system to the pylons is in a repairable condition, but the amount of delamination of the top coats will require a high level of preparation to remove all the loose and flaking paint back to sound coating. The flaking topcoats were only observed on the west (staircase) pylon so further assessment will be required on the other pylons to provide a detailed scope of work.

General notes:

Of the 13 paint samples analysed for Lead, Cadmium, Chromium, only 3 samples provided a positive Lead results above 1%.

We recommend that all surface preparation works are carried out and completed in accordance with ISO8501-1 : Blast cleaning to SA2.5 and mechanical preparation to st3. Robust quality control procedures should be put into place along with regular if not full time Inspection and Testing to ensure the works are completed in accordance with the Specification and Paint Manufacturers guidelines.

Long term durability will only be achieved with good workmanship and onsite quality control.

Note: The Work Required below, states Complete removal of the whole system, this only relates to areas stated above. For patch repair we have provide percentages in the Chart for Treatment Areas. These percentage should only be used as a guide. To understand more accurately the levels of corrosion, a more thorough detailed survey will be required along with steel measurements which would then relate to percentage breakdown.

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Work Required

Complete removal of the whole system back to either metal coating or substrate.

The paint flake samples incorporating all paint layers were analysed for total lead, chromium and cadmium content.

Lead: There is no specific limit for lead in paint but for guidance the HSE control of lead at work regulations 2002, section 65, classes lead content of less than 1% as being in a category where work with lead is not liable to result in a significant hazard when exposed. Lead levels over this value will be treated as per the lead regulations and an appropriate risk assessment should be carried out prior to works commencing.

Chromium: There is no specific limit for chromium in paint but for guidance refer to the HSE control of chromium at work regulations 2002, which classes chromium content of less than 0.33% as being in a category where work with chromium is not liable to result in a significant hazard when exposed. Chromium levels over this value will be treated as per the lead regulations and an appropriate risk assessment should be carried out prior to works commencing.

Cadmium: There is no specific limit for cadmium in paint but for guidance refer to the HSE control of cadmium at work regulations 2002, which classes cadmium content of less than 0.2% as being in a category where work with cadmium is not liable to result in a significant hazard when Working within Exposure Limit of 8 hours (MAX). Cadmium levels over this value will be treated as per the lead regulations and an appropriate risk assessment should be carried out prior to works commencing.

Chart for Treatment to Areas

Description	Blistering	Cracking	Flaking / Delamination	Corrosion	Operation A	Operation B
T2 Gondola Above deck primary steelwork	0%	0%	0%	15%	20%	80%
T4 Motor house primary steelwork	0%	0%	0%	10%	15%	85%
T5 Eastern approach topside lattice steelwork	0%	0%	0%	25%	100%	0%
T5b Eastern approach underside steelwork	0%	0%	0%	50%	100%	0%
T6 Gondola Below deck primary steelwork	0%	0%	0%	30%	100%	0%
T9 Traveller primary steelwork	0%	0%	0%	5%	100%	0%
T10 Main boom vertical primary steelwork	0%	0%	0%	5%	100%	0%
T11 Main boom plan primary steelwork	0%	0%	0%	5%	100%	0%
T13 Pylon primer steelwork (stair access on the west)	0%	0%	20%	5%	10%	90%

***Operation A** to areas which require treatment back to the substrate

***Operation B** to areas which require treatment to the top coat and intermediate coat

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8: General Photos



Main Boom General view
Photo taken: 24-07-2019



Main Boom General view
Photo taken: 24-07-2019

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Main Boom General view
Photo taken: 24-07-2019



Motor House General view
Photo taken: 24-07-2019

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Gondola Topside General view
Photo taken: 24-07-2019



Gondola Underside General view
Photo taken: 24-07-2019

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West Pylon General view
Photo taken: 24-07-2019



West Pylon
Photo taken: 24-07-2019

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Eastern Approach Underside
Photo taken: 24-07-2019



Eastern Approach looking West
Photo taken: 24-07-2019

Errors & Omissions

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Authorised By

Reporting Inspector

Page 28 of 31 pages.





Report created using IRIS





Our Ref: 19-16874
Your Ref:

ENVIROCH

Analytical Laboratories

12 The Gardens
Broadcut, Fareham
Hampshire
PO16 8SS

Appendix1

- // Appendix01 - Lead, Chromium and Cadmium
sample results



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Paint Analysis Report

Client: Paint Inspection Ltd
61 High Street
Fareham
Hampshire
PO16 7BG

Sample Details: 13 paint samples

Date report issued: 7 August 2019

Number of pages (including this header): 3

Accreditation

All analytes marked **M** have been analysed under the scope of our MCERTS accreditation

All analytes marked **U** have been analysed under the scope of our UKAS accreditation

All analytes marked **m** have been subcontracted and analysed under the scope of their MCERTS accreditation

All analytes marked **u** have been subcontracted and analysed under the scope of their UKAS accreditation

All results labelled with an asterisk (*) are non-conforming due to incorrect sample storage or handling. The result may be invalid.

All comments are beyond the scope of our accreditation.

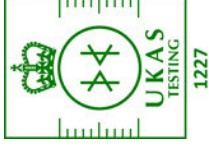
The results shown in this test report specifically refer to the sample(s) tested as received unless otherwise stated

This report shall not be reproduced except in full, without the written approval of Envirochem.

Dr Enamul Hoque

Authorised Signatory

Signed on behalf of Envirochem by an authorised signatory



Paint Analysis Report

Client: Paint Inspection Ltd
Site: Newport Transporter Bridge
Date Received: 5 August 2019
Date Completed: 7 August 2019
Sampled By: Client
Envirochem Job No. 19-16874
Date Issued: 7 August 2019

Sample		Results									
Lab Sample No.	Sampled Date + Time	Sample Details	Sample Type	Method Detection Limit Units Analysis	5.17 - sample contam. with substrate ?	5.17, 6.08 32 mg/kg lead	5.17, 6.08 0.003 % lead %	5.17, 6.08 1 mg/kg cadmium	5.17, 6.08 0.001 % cadmium %	5.17, 6.08 10 mg/kg chromium	5.17, 6.08 0.001 % chromium %
45266	29/07/2019	1. Gondola Suspension Cables	Paint		No	1160 U	0.1158	< 1.0	< 0.0010	< 10.0 U	< 0.0010
45267	29/07/2019	2. Gondola Above Deck Primary Steelwork	Paint		No	539 U	0.0539	< 1.0	< 0.0010	140 U	0.0140
45268	29/07/2019	3. Anchor Cables	Paint		Yes	50.0 U	0.0050	< 1.0	< 0.0010	< 10.0 U	< 0.0010
The paint could not be completely separated from the substrate, therefore the results could be affected.											
45269	29/07/2019	4. Motor House Primary Steelwork]	Paint		No	3030 U	0.3034	12.3	0.0012	37.3 U	0.0037
45270	29/07/2019	5. Eastern Approach Primary Steelwork	Paint		No	70400 U	7.044	3.6	< 0.0010	63.8 U	0.0064
45271	29/07/2019	6. Gondola Below Deck Primary Steelwork	Paint		No	33300 U	3.333	34.4	0.0034	1210 U	0.121
45272	29/07/2019	7. Saddle Primary Steelwork	Paint		No	361 U	0.0361	< 1.0	< 0.0010	197 U	0.0197
45273	29/07/2019	8. Stay Cables	Paint		No	8590 U	0.8586	129	0.0129	226 U	0.0226
45274	29/07/2019	9. Traveller Primary Steelwork	Paint		No	550 U	0.0549	< 1.0	< 0.0010	23.3 U	0.0023



Paint Analysis Report

Client: Paint Inspection Ltd
Site: Newport Transporter Bridge
Date Received: 5 August 2019
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Sample		Results									
Lab Sample No.	Sampled Date + Time	Sample Details	Method Detection Limit Units Analysis	Sample Type	5.17 - sample contam. with substrate ?	5.17, 6.08 32 mg/kg lead	5.17, 6.08 0.003 % lead %	5.17, 6.08 1 mg/kg cadmium	5.17, 6.08 0.001 % cadmium %	5.17, 6.08 10 mg/kg chromium	5.17, 6.08 0.001 % chromium %
45275	29/07/2019	10. Main Boom Vertical Primary Steelwork		Paint	No	479 U	0.0479	< 1.0	< 0.0010	44.3 U	0.0044
45276	29/07/2019	11. Main Boom Plan Primary Steelwork		Paint	No	284 U	0.0284	< 1.0	< 0.0010	28.3 U	0.0028
45277	29/07/2019	12. Main Boom Internal Bracing Cables		Paint	No	26700 U	2.668	< 1.0	< 0.0010	32.6 U	0.0033
45278	29/07/2019	13. Pylon (west) Primary Steelwork		Paint	No	110 U	0.0110	< 1.0	< 0.0010	87.3 U	0.0087

- // Appendix01 - Lead, Chromium and Cadmium
sample results