

Issue

Manchester Central
Gable End Structures Repainting
Technical Specification for
Repainting

Paint Spec 01

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Contents

		Page
1	Scope of Specification	1
2	Scope of Work	1
3	Existing Paints	2
3.1	Lead containing paints	2
3.2	Other paints	2
4	Surface Preparation	3
4.1	Existing finish paint	3
4.2	Existing intermediate paints	3
4.3	Degraded intermediate coats not exposing the substrate	3
4.4	Degraded and broken down paint exposing the substrate and corroded steel	3
4.5	Back to Back members	4
5	Paint materials	4
5.1	Primer	4
5.2	Intermediate coats	4
5.3	Finish coats	5
6	Paint Application	5
6.1	General	5
6.2	Interface with existing paints	5
7	Quality Management	6
7.1	General	6
7.2	Project specific	6
8	Compatibility Trials	6
9	Submissions	7
10	References	7

1 Scope of Specification

This specification gives the technical requirements for the re-painting of the steel and wrought iron surfaces of the gable end structures at Manchester Central. The specification provides technical requirements for:

- Surface preparation of steel and wrought iron surfaces with existing paints in various conditions of degradation.
- Requirements for paints type for use in the re-painting works.
- Requirements for tests and paint trials prior to commencement of the works
- Requirements for Quality Management and Quality control of surface preparation and painting of the gable end structures.

The specification shall be read and used in conjunction with all contract documents, drawings and other information relevant to the contract. The Gable End structures are part of a Grade II listed building and the Contractor shall comply with any conservation or heritage requirements for the structure.

The Contractor is responsible the design, specification and provision of safe working access to the structure.

The Contractor is responsible for ensuring compliance with all relevant Health and Safety legislation and all Environmental legislation relating to surface preparation, paint application and disposal of waste arising from the works.

In preparing this specification we have not assessed the condition of the structure by detailed inspection nor assessed the structural integrity of the structure. The Contractor is responsible for assessment of the condition and integrity of the structure in relation to the provision of access and work required by this specification.

2 Scope of Work

The scope of work is the surface preparation and painting of the existing steel and wrought iron gable ends structures at Manchester Central. The Gable End structures are located on the South West and North East facing elevations of the building.

All external surfaces of the existing gable end structures shall be painted in accordance with this specification.

The existing paint to the gable end structures varies in both the type of paint and numbers of coats of paints. The condition of the existing paints varies over the surfaces. Broadly the conditions are:

- Flaking, detached and missing finish
- Degraded intermediate coats

- Complete breakdown of all paints to the substrate steel
- Corrosion of the substrate steel
- Combinations of the above

The contractor shall undertake an inspection of the structure prior to commencing work to evaluate the extent of the various conditions.

The specification intent is to remove and replace the existing finish over all the surfaces, to repair, or reinstate, intermediate coats and to renew all paint in locations where corrosion of the substrate is present.

3 Existing Paints

3.1 Lead containing paints

The Contractor shall assume that existing paints to the steel and wrought iron may contain lead. The Contractor is responsible for and shall undertake sufficient tests to evaluate the risks arising from lead containing paints on the structures. The Contractor shall take appropriate measures to mitigate risk arising for lead containing paints.

The contractor shall comply with all Health and Safety and Environmental legislation relevant to working with, removing and disposing of lead containing paints and lead contaminated waste arising from paint removal. Waste includes all liquids and solids.

3.2 Other paints

The Contractor is responsible for identification of paint types and where appropriate the number of coats of paints on the structure. The Contractor shall undertake any tests necessary to identify the types of paint present on the structure and satisfy themselves the proposed new paints are compatible with the existing paints, refer to Section 8 of this specification.

Where existing paints are removed from the surface the Contractor is responsible for compliance with all relevant Health and Safety requirements for the removal of the paint. The Contractor shall comply with all Health and Safety and Environmental legislation and requirements for the removal and disposal of liquid and/or solid waste arising from the paint removal.

4 Surface Preparation

4.1 Existing finish paint

The Contractor shall remove all existing finish paint from the structure.

The Contractor shall select an appropriate method to remove the existing finish.

4.2 Existing intermediate paints

The existing intermediate paints include those already exposed by loss of the finish paint and those exposed by the removal of existing finish paint by the Contractor.

The Contractor shall determine with the paint supplier any requirements for surface preparation of the existing finishes to ensure satisfactory adhesion of the new finish paint. The requirements shall include both existing exposed intermediate coats and intermediate coats exposed by the Contractor.

If the paint supplier requires testing to identify existing paints or to demonstrate satisfactory adhesion of the proposed finish paint the Contractor is responsible for that testing.

4.3 Degraded intermediate coats not exposing the substrate

Degraded intermediate coats include, but are not limited to, cracked/crazed paints, debonded, peeling or detached paint coats.

Areas of existing intermediate paint coats showing visible signs of degradation/breakdown shall be removed down to sound underlying coats or the steel substrate. The preparation shall continue into sound coating for a minimum of 50mm from the edge of the area of breakdown. If sound paint is not encountered at 50mm the preparation shall continue until sound paint is found.

The edge of sound paint shall be feathered or tapered at an angle of 45 Degrees to provide a smooth transition for the new paint.

The Contractor shall select an appropriate method to remove the existing degraded paints.

4.4 Degraded and broken down paint exposing the substrate and corroded steel

For small areas of degraded and broken down paint of intermediate coat exposing the substrate the quality of surface preparation shall be St 3 of BS EN ISO 8501-1 by hand or power tool cleaning. The definition of small area is 75 x 75mm or equivalent area.

For areas greater than 75 x 75mm or equivalent the quality of surface preparation shall be Sa 2 ½ of BS EN ISO 8501-1.

The Contractor shall choose the method of preparation to achieve the required quality, the method may include wet or dry processes or both. If water jetting is a chosen method it shall be in accordance with Clause 7.3.3 of Network Rail “*Specification for the use of protective coatings systems*” (NR/L3/CIV/040).

On completion of either quality of preparation the surface roughness of the steel substrate shall be within the limits given by the manufacturer on the product data sheet.

The preparation shall continue at least 50mm into the existing paint beyond the edge and for the full perimeter of the cleaned area. If sound paint is not encountered at 50mm the preparation shall continue until sound paint is found.

The edge of sound paint shall be feathered or tapered at an angle of 45 Degrees to provide a smooth transition for the new paint.

4.5 Back to Back members

The structure has back to back members in various conditions that may include unsealed and fully open gaps, sealed gaps or gaps packed with steel spacers.

For open gaps the contractor shall prepare and paint in accordance with Sections 4.1 to 4.4 of this specification.

For sealed gaps the Contractor shall assess the condition of the sealant. Where the sealant is partially detached and/or brittle or with poor bond the sealant shall be removed. After removal of the sealant the surfaces shall be treated in accordance with Sections 4.1 to 4.4 of this specification.

Where sealant is in good condition in may be left in place and overcoated with the finish. The Contractor and paint supplier shall check for compatibility of paints with the existing sealant.

5 Paint materials

5.1 Primer

Primer shall be applied to all areas of steel exposed by break down of the existing paints or by the preparation in accordance with Section 4.

The primer shall be a high solids surface tolerant epoxy applied to a nominal dry film thickness of 125 microns. The chosen product shall be registered as Highways England Item Number 115 or Network Rail Item Number 7.1.5.

5.2 Intermediate coats

The intermediate coat shall be applied to areas with:

- A new primer as per clause 5.1 of this specification
- Prepared in accordance with Clauses 4.3 and 4.4

The intermediate coat or coats shall be a high solids surface tolerant epoxy applied to a nominal dry film thickness of 125 microns per coat. The number of coats of new intermediate shall be sufficient to match the thickness of the existing sound coating.

The chosen product shall be registered as Highways England Item Number 115 or Network Rail Item Number 7.1.5.

5.3 Finish coats

The finish coat shall be applied over all surfaces of the steel or wrought iron after preparation in accordance with clauses 4.1 to 4.4 of this specification.

The finish shall be an acrylic urethane, Network Rail Item Number 7.3.1. The nominal dry film thickness shall be 75 microns.

The finish colour shall match the existing finish colour and gloss level and shall comply with any heritage requirements for colour and gloss level.

The Contractor and the paint supplier shall test and confirm the compatibility of the specified finish with the existing paints retained on the structure. If there are concerns regarding compatibility the Contractor and paint supplier shall propose a suitable alternative.

6 Paint Application

6.1 General

All paints shall be applied after preparation in accordance with this specification. The required quality of preparation shall be present on the surface at the time of application of the first coat of paint. If the required preparation is not present the surface shall be re-prepared to the required standard.

Paint application shall be in accordance with the paint supplier's specifications as given on the product data sheets and application guide. The data sheet and/or guide shall include appropriate surface preparation requirements, application methods, over coating time and environmental conditions during application and curing.

6.2 Interface with existing paints

Where new paints are applied to existing paints after preparation in accordance with Section 4.0 of this specification the new applied paints shall have a smooth transition over the feathered edge of the existing paint. The new paint shall

continue onto the existing for a minimum of 50mm beyond the upper edge of the feathered edge.

7 Quality Management

7.1 General

The Contractor shall, as a minimum, operate a registered ISO 9001 quality management system and hold a current valid certificate. The Contractor shall be certified to the National Highway Sector Scheme 19A “Corrosion protection of ferrous materials by industrial coatings”

7.2 Project specific

The Contractor shall prepare a quality plan specific for the Gable End repainting. The plan shall include as an Inspection and Test Plan (ITP) for the works. The plan shall include:

- The type and frequency of testing
- The acceptance criteria for each test
- Identify those responsible for undertaking the tests
- Identify those responsible for accepting/ rejecting the test results
- The proposed qualifications for inspector undertaking and evaluating the tests
- Hold points for inspection
- Rectification of rejected items

Inspection reports shall be supplied to the Client on an agreed schedule.

8 Compatibility Trials

The Contractor shall allow for a site trial and compatibility test prior to commencing the main works. The site trial and compatibility test shall be undertaken in conjunction with the chosen paint supplier.

The trial shall be undertaken on an area, or areas, representing the different conditions encountered on the structure including:

- Compatibility of proposed finish with existing intermediate coats following appropriate preparation
- Compatibility of new intermediate coats with existing intermediate coats after appropriate preparation

- Compatibility of new primer and intermediate coats with feathered/tapered edges of existing paints after appropriate preparation

The Contractor and Paint Supplier shall provide a method statement for the trials that includes the methods of surface preparation, methods of application of paint. The method statement shall also detail the methods of tests and acceptance criteria to evaluate compatibility. The method statement shall be supplied and agreed with the client prior to work commencing.

On completion of the trial the paint supplier shall confirm in writing the specified paint specification is compatible with the existing paints on the structure. If the paint supplier identifies incompatibility the paint supplier shall propose alternative paint or paint types to ensure compatibility. If the supplier proposes alternative paint or paints by these shall be subject to a further trial.

9 Submissions

The Contractor shall provide the following information as part of the tender, section references are to the relevant section of this specification.

Section 2.0 Survey report estimating the extent of various paints conditions on the structure.

Section 3.0 Details of test type and frequency to identify the lead containing paints and type of existing paints on the structure

Section 4.0 Details of the proposed methods of surface preparation and method statements for each type of preparation.

Sections 5 Certification demonstrating compliance of the proposed paint with Highways England or Network Rail Item Numbers.

Section 6 Product data sheets and application guides for proposed paints. Method statements for the application of paint.

Section 7.1 current certification for ISO 9001 and NHSS 19A registration

Section 7.2 Project specific Inspection and Test Plan

Section 8.0 Method statement for the site compatibility trials and reporting.

10 References

BS EN ISO 8501-1:2007. *Preparation of steel substrates before application of paints and related products. Visual assessment of surface cleanliness. Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings*

Network Rail *Specification for the use of protective coatings systems*
(NR/L3/CIV/040)

ISO 9001:2015 Quality management systems — Requirements

National Highway Sector Scheme 19A *Corrosion protection of ferrous materials
by industrial coatings*