

## 6781 HOT DIP GALVANIZING

*Masterspec sections must be customised to suit the project being specified, by removing irrelevant information and adding project-specific information and selections.*

### 1. GENERAL

This section relates to hot dip galvanizing of structural steel framing, general steel articles and fabricated steel assemblies.

*Modify or extend the above description to suit the project being specified.*

#### Related work

### 1.1 RELATED SECTIONS

Refer to STRUCTURAL STEELWORK for fabrication of structural steelwork.

Refer to STEEL METALWORK for non structural steelwork.

*Include cross references to other sections where these contain related work.*

*Refer to PROTECTIVE COATINGS - STEELWORK for specialist paint finishes to structural steelwork.*

*Refer to METAL SPRAY CORROSION PROTECTION for zinc and aluminium/zinc spray finishes.*

*For standard finishes refer to PAINTING and PROTECTIVE COATINGS - STEELWORK.*

#### Documents

### 1.2 DOCUMENTS REFERRED TO

Documents referred to in this section are:

AS/NZS 2312	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings
AS/NZS 4680	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
AS 1627.1	Metal finishing - Preparation and pretreatment of surfaces - Method selection guide - Removal of oil, grease and related contamination
AS 1627.2	Metal finishing - Preparation and pretreatment of surfaces - Method selection guide - Power tool cleaning
AS 1627.4	Metal finishing - Preparation and pretreatment of surfaces - Method selection guide - Abrasive blast cleaning
AS 1627.9	Metal finishing - Preparation and pretreatment of surfaces - Method selection guide - Pictorial surface preparation standards for painting steel surfaces
AS 1897	Electroplated coatings on threaded components (metric coarse series)
AS/NZS ISO 9001	Quality management systems - Requirements
OSH	Guidelines for the provision of facilities and general safety in the construction industry

*Delete from the DOCUMENTS clause any document not cited. List any additional cited documents.*

#### RELATED DOCUMENTS

*Refer to the following related documents when preparing this section:*

*AS/NZS 4791 Hot-dip galvanized (zinc) coatings on ferrous open surfaces - applied by an in-line process*

*AS/NZS 4792 Hot-dip galvanized (zinc) coatings on ferrous hollow sections  
Galvanizing Association of New Zealand - After-Fabrication Hot Dip Galvanizing. A practical reference for designers, specifiers, engineers, consultants, manufacturers and users*

### 1.3 MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:

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Copies of the above literature are available from ~

Web: ~

Email: ~

Telephone: ~

Facsimile: ~

*It is important to ensure that all personnel on site have access to accurate, up to date technical information on the many products, materials and equipment used on a project. In most cases individual products are not used in isolation, but form part of a building process. Also a particular manufacturer's and/or supplier's requirements for handling, storage, preparation, installation, finishing and protection of their product can vary from what might be considered the norm. Access to technical information can help overcome this potential problem.*

## Requirements

- 1.4 QUALIFICATIONS  
Galvanizers to be experienced, competent workers, qualified and familiar with the materials and techniques specified. Provide evidence of qualifications on request.
- 1.5 VENT HOLES  
Galvanizer to provide appropriate vent holes and drains if required, to hollow sections and enclosed elements, to AS/NZS 4680.
- 1.6 AGREE VENT HOLE LOCATIONS  
Galvanizer to provide layout, for approval, of appropriate vent holes and drains to exposed, hollow sections and enclosed elements. Do not make vent holes until approved. Refer to SELECTIONS for elements requiring approval.  
*For exposed elements where appearance is important. As vent holes are a serious safety issue always take the advice of the Galvaniser.  
Delete this clause if vent hole locations are not an issue.*
- 1.7 TEMPORARY MEMBERS  
If necessary to minimise distortion during galvanizing, galvanizer to provide appropriate temporary support members.

## Performance

- 1.8 QUALITY ASSURANCE  
Maintain quality assurance programmes to AS/NZS ISO 9001 for both galvanizing and other specialist coatings as necessary to assure that work is performed in accordance with this specification and the qualifying requirements of the contract documents.

## 2. PRODUCTS

### Materials

- 2.1 GALVANIZED COATING  
Zinc coating by the hot-dip process to the requirements of AS/NZS 4680.
- 2.2 BOLTS, NUTS AND WASHERS  
Hot-dip galvanize to AS/NZS 4680, bolts, nuts and washers forming a permanent part of a structure subject to a protective coating.
- 2.3 BOLTS, NUTS AND WASHERS - DRY INTERNAL USE  
Electrogalvanize to AS 1897 or hot-dip galvanize to AS/NZS 4680.

## 3. EXECUTION

### Conditions

- 3.1 GENERALLY  
The galvanized coating on all steel articles shall conform to the requirements of AS/NZS 4680 and as specified.
- 3.2 DEFECTS  
Discard any material or fabricated items showing defects affecting its structural integrity.
- 3.3 SURFACE PREPARATION  
Grind off burrs, welding slag and sharp arrises and all other defects that could affect appearance.  
*Take care to avoid fabrication techniques that could cause distortion or embrittlement of the steel. Holes and/or lifting lugs to facilitate handling, venting and draining during the galvanizing process shall be provided at positions as agreed between engineer and galvanizer. Unsuitable marking paints to be avoided.  
Architectural exposed steelwork may warrant more stringent specification.*

## Galvanizing

### 3.4 STEELWORK BEING GALVANIZED

Clean sections thoroughly and apply zinc coating by the hot-dip process to the requirements of AS/NZS 4680. Zinc coating thickness to be not less than the following:

<u>Structural steelwork</u>	<u>Average coating</u>	<u>Minimum coating</u>
≤ 1.5mm	45 microns	35 microns
> 1.5mm - ≤ 3mm	55 microns	45 microns
> 3mm - ≤ 6mm	70 microns	55 microns
> 6mm	85 microns	70 microns

<u>Bolts and washers</u>		
< 8mm	35 microns	25 microns
≥ 8mm	55 microns	40 microns

Ensure that tolerances in screw cutting have made allowance for galvanizing.

Degrease and sweep abrasive blast using a non metallic media galvanized steelwork to be painted to NZS 4680, Appendix I, Information on the use of sweep (brush) blast cleaning of galvanized steel prior to painting

### 3.5 INSPECTION

Integrity of the coating to be determined by visual inspection and coating thickness measurement, to AS/NZS 4680.

For critical locations, with exposed or painted finish, all spikes to be removed and all edges free from lumps and runs.

## Repairs

### 3.6 REPAIR METHODS

All repairs to AS/NZS 4680, Appendix E:

Small repairs : Colour matched zinc rich paint.

Large repairs: With approval colour matched zinc rich paint or other agreed option.

*If the repairs are major, investigate other options including replacement.*

## Priming

### 3.7 PREPARATION, PRIMING AND PAINT SYSTEM

Refer to PAINTING sections for preparation, primer and paint system.

*Amend this clause to suit which section the primer and paint system are specified in.*

## Completion

### 3.8 ENSURE

Ensure all elements are free of marks or blemishes.

### 3.9 REPLACE

Replace damaged, cracked or marked elements.

### 3.10 LEAVE

Leave work to the standard required by following procedures.

## 4. SELECTIONS

### 4.1 VENT HOLE LOCATION APPROVAL

Items that need approval for vent hole locations.

Items: ~  
*Delete if not required.*

### 4.2 STEELWORK BEING GALVANIZED

Items: ~  
*List items*