

## 4320 TILE ROOFING

*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 the supply and installation of tile roof, complete with all roof underlays and accessories to create a watertight roof.

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

*Refer to CARPENTRY for plywood sarking and for insulation products. Add project-specific clauses when insulation products are to be supplied and/or laid with the roofing. Alternately provide references to WALL CLADDING, WRAPS, UNDERLAYS & DPC or CARPENTRY.*

*Add project-specific clauses when roofing-type products are used as external sheathing on fascias, parapets and walls.*

*Add project-specific clauses when rainwater goods (spoutings, downpipes, gutters) are to be supplied and/or laid with the roofing, or alternately provide cross references to RAINWATER SYSTEMS.*

### 1.1 DOCUMENTS

Documents referred to in this section are:

NZBC E2/AS1	External moisture
AS 1397	Steel sheet and strip - hot-dipped, zinc-coated, or aluminium/zinc-coated
NZS 3403	Specification for hot-dipped galvanized corrugated steel sheet for building purposes
NZS 3602	Timber and wood-base products for use in building
NZS 3604	Timber framed buildings
NZS 4206	Concrete interlocking roofing tiles
NZS 4217	Pressed metal tile roofs
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire

*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:*

NZBC E2/VM1	External moisture
BRANZ BU 465	Domestic flashing installation
BRANZ BU 466	Timber-frame parapets, balustrades and columns
BRANZ BU 467	Principles of flashing design

### 1.2 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.*

### 1.3 QUALIFICATIONS

Carry out roofing work using experienced, competent roofers familiar with the materials and techniques specified.

### 1.4 WIND AND EARTHQUAKE LOADINGS

Use fixings and methods capable of sustaining the loads appropriate to the area as set out in NZS 3604, section 5.

*Modify this clause to provide information on actual site conditions.*

- 1.5 CO-ORDINATE  
Co-ordinate to ensure substrate and preparatory work is complete and other work programmed in the order required for access and completion of the roof.
- 1.6 PERFORMANCE  
Accept responsibility for the weather-tight performance of the completed roofing system, including all penetrations through the roof and junctions with walls and parapets.  
*Refer to later EXECUTION clause on co-operating with others on the installation of elements which penetrate or adjoin the roofing system; including walls and parapets, skylights, sundry elements fixed through the roofing surface, service pipework, etc.*
- 1.7 WARRANTY  
Warrant this work under normal environmental and use conditions against failure.  
Warranty period - materials: 5 years  
Warranty period - execution: 5 years
- Refer to the general section for the required form of WARRANTY AGREEMENT and details of when completed warranty must be submitted.  
*Check general section WARRANTIES for the date of commencement of warranties; which is normally practical completion of the contract. Refer to the chosen conditions of contract as it may also contain information on warranties/guarantees.*

## 2. PRODUCTS

- 2.1 TILE BATTENS  
Douglas fir, or No 1 framing radiata pine to NZS 3602, table 1E, Requirements for wood-based building components to achieve a 50-year durability performance. Size to NZS 3604, section 10: Roof framing.  
*Amend this clause when specifically requiring either Douglas fir or radiata pine.*
- 2.2 WIRE NETTING  
Galvanized hexagonal 75mm mesh from 1mm steel wire to AS/NZS 4534.  
*Use this clause only if specifying a non-self supporting paper.*
- 2.3 UNDERLAY  
Breather type kraft paper laminates.  
*Specify underlay here if not included in INSULATION or WRAPS, UNDERLAYS & DPC.*  
*Modify or add to this clause for flame proof or reinforced building paper, foil-backed insulation, or a vapour barrier to suit the project brief. Modify or add the EXECUTION clauses similarly.*
- 2.4 METAL ROOFING TILES  
Pressed steel sheet galvanized to NZS 3403, aluminium/zinc coated to AS 1397. Finish as specified. Accessories, cappings, flashings, and fixings to match and to the roofing manufacturer's requirements.  
*Amend this clause to suit; and to suit alternative selections such as copper. Note that special care is needed when using aluminium/zinc coated products, to ensure compatibility with flashings, spoutings, downpipes and external sheathing.*
- 2.5 CONCRETE ROOFING TILES  
To NZS 4206. Finish as specified. Accessories, capping, flashings, fixings and mortar pointing to match and to the roofing manufacturer's requirements.  
*A flexible pointing compound (Flexipoint) is available. Refer to BRANZ Appraisal Certificate 335. Amend this clause to suit clay tiles.*
- 2.6 NAILS, SCREWS AND FASTENINGS  
Metal, size and pattern, to roofing manufacturer's requirements and complying with the relevant aspects of NZS 3604, section 4: Durability.

## 3. EXECUTION

- 3.1 STORAGE  
Stack roofing and accessories on clean, level areas of the site and protect from damage and from weather until ready to fix in place. Avoid overloading roof structure when roofing materials are placed on the roof area prior to installation.
- 3.2 SET-OUT  
Set out the planned layout before fixing commences, to ensure true lines and the correct relationship to module, grid and roof features.  
*Refer to drawings or give design parameters where layout is particularly critical to appearance.*
- 3.3 LAY ROOF UNDERLAY  
Lay and fix to NZBC E2/AS1: 8.1.5 Underlays, NZS 3604, section 11.2.2, Roof cladding underlays and the roofing manufacturer's requirements.  
*Amend this clause to suit actual requirements for underlays, depending on roof type and location.*
- 3.4 LAY ROOFING, GENERALLY  
To NZBC AS/1: 8.0 Roof claddings. Take care to avoid damaging pre-finished roofing both during and after fixing. Wear only soft-soled shoes on the finished surface.
- 3.5 INSTALL TILE BATTENS  
Install the tile battens to the roofing manufacturer's requirements and with all joints fully supported and staggered.  
*Purlins are usually supplied and fixed under CARPENTRY, or occasionally under STRUCTURAL STEELWORK. Prepare a further project-specific clause where nailer plates/purlins are supplied as part of the roofing work.*
- 3.6 CUT METAL TILES  
Cut with tools specified by the roofing manufacturer. Fold ends and seal cut edges of tiles and accessories without damaging their integrity or finish, all to the roofing manufacturer's requirements.
- 3.7 INSTALL METAL TILES  
Lap metal tiles and fix complete with matching accessories, flashed to roof features and penetrations; all to the roofing manufacturer's requirements and NZS 4217 and to NZBC AS/1: 8.3 Pressed metal tiles.  
*Refer more specifically to standard roofing manufacturer's details where applicable.*
- 3.8 INSTALL CONCRETE TILES  
Install concrete tiles and fix with metal ties every third tile and to perimeter tiles. Incorporate matching accessories, flash to roof features and penetrations, with anti-ponding boards and under-cloaks where required, to the roofing manufacturer's requirements and NZS 4206 and to NZBC AS/1: 8.2 Masonry tiles.  
*Refer more specifically to standard roofing manufacturer's details where applicable.*
- 3.9 FIXINGS  
Refer to the roofing manufacturer's literature for fixing details and to NZS 3604 for fixings durability requirements.
- 3.10 INSTALL COVERS AND FLASHINGS  
Install and fix as detailed and to the roofing manufacturer's details and to comply with NZBC E2/AS1: 4.0 Flashings, 5.0 Roof/wall junctions and 6.0 Parapets.  
*Refer to manufacturers' or included details where applicable.*
- 3.11 PENETRATIONS  
Flash and overflash all penetrations through the roof.  
*Expand this very general clause to better describe the various types and forms of penetrations needing to be flashed.*
- 3.12 PENETRATIONS AND JUNCTIONS  
Check that adjoining walls and parapets are prepared ready for the installation of the roofing. Confirm that openings have been prepared ready for the installation of skylights and other penetrations through the roof. Required work includes the following:  
- underlay turned up at wall and parapet lines

- underlay finished and dressed off to all openings, ready for the installation of skylights and other penetrations
- roofing installation neatly finished to all sides of openings and to all wall and parapet junctions
- installation of flashings (those required to be installed prior to installation of penetrating elements and/or wall linings).

3.13 USE OF SEALANTS

Select and use sealants only as recommended by the roofing manufacturer.

*Using sealants as a primary weatherseal is not advisable. Where used as a secondary barrier, take special care to confirm that substrates and sealants are compatible and include the roofing manufacturer's details where available. Note also that silicone sealants tend to attract and hold dust and debris.*

3.14 COMPLETE

Ensure the work is complete with all flashings, undercloaks, valleys, ridges and hips properly installed so the finished roof is completely weathertight.

*Provide cross references to RAINWATER SYSTEMS where applicable.*

3.15 REMOVE FILINGS

Remove metal filings from roofing surfaces at least daily.

3.16 CLEAR

Clear trade rubbish and unused materials from the roof and surrounds regularly during the work and at completion. Sweep down the completed roof and flush out spoutings, gutters and rainwater pipes, ensuring that metal filings, metal scraps and loose fixings are removed.

*Non-removal of metal filings and unused fixings is a continual problem and source of unsightly surface marking. Consider adding in a special inspection clause on periodic and final cleaning.*

3.17 REPLACE

Replace damaged or marked elements. Remove unused materials from the site.

4. SELECTIONS

**Materials**

4.1 ROOFING UNDERLAYS

Underlay: ~

Safety mesh: ~

*Amend to suit the required form and type of underlay and support required. Refer to WRAPS, UNDERLAYS & DPC.*

4.2 METAL ROOFING TILES

Brand/type: ~

Coating: ~

Flashings: ~

*Amend this clause to suit; and to suit alternative selections such as copper. Note that special care is needed when using aluminium/zinc coated products, to ensure compatibility with flashings, spoutings, downpipes and external sheathing.*

4.3 CONCRETE ROOFING TILES

Brand/type: ~

Flashings: ~

Pointing material: ~

*A flexible pointing compound (Flexipoint) is available. Refer to BRANZ Appraisal Certificate 335. Amend this clause to suit clay tiles.*

4.4 METAL FLASHINGS

Location	Material/thickness	Base metal thickness	Finish
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4.5 METAL COVERS AND TRIMS

Location	Material/thickness	Base metal thickness	Finish

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**Components**

4.6

**NAILS, SCREWS AND FASTENINGS**

<b>Roofing</b>	<b>Fixing/fastening (metal/finish)</b>	<b>Fixing/fastening (type, gauge and length)</b>	<b>Centres (general and edge)</b>
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