Architectural Roofing
ArcTray™

1. GENERAL

This section deals with the supply and fixing of Architectural Roofing ArcTray™ overlap rigid sheet metal profiled roofing and/or cladding complete with accessories.

Documents

1.1 DOCUMENTS REFERRED TO

Documents referred to in this sections are:

AS/NZS 1170.2	Structural design actions – Wind actions
NZS 3604	Timber framed buildings
NZS 4203	General structural design and design loadings for buildings
AS 1397	Steel sheet and strip – hot dipped, zinc-coated or aluminium/zinc-coated
EN988	Specification for zinc alloy sheet and strip
NZMRM	NZ Metal Roof and Cladding Code of Practice

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

1.2 MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:
Architectural Roofing Technical Literature

Copies of the above literature are available from Architectural Roofing

Web:	www.trayroofing.co.nz
Email:	info@trayroofing.co.nz
Telephone:	0800 50 2004
Facsimile:	03 347 3086

1.3 ABBREVIATIONS

The following abbreviations are used throughout this part of the specification:

BMT	Base metal thickness
NZMRM	New Zealand Metal Roofing Manufacturers Inc.

Requirements

1.4 QUALIFICATIONS

Roofers to be Architectural Roofing Approved Installers.

Web:	www.trayroofing.co.nz
Telephone:	0800 50 2004

Guarantees

1.5 WARRANTY

Warrant this work under normal environmental and use conditions against failure of weather proofing and materials.

Perforate:	
Coatings:	
Workmanship:	10 years
From:	Date of practical completion

Performance

1.6 FIXINGS,WIND
Design and use the fixings appropriate for the wind zone (R) and topographical classification (T) of this site and building height; as required by NZS 3604 and the wind loads on various wall areas as given by NZS 4203 or AS/NZS 1170.2. Allow for specific loadings at corners and the periphery of the roof, where localised pressure factors apply.

1.7 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.

1.8 PERFORMANCE
Accept responsibility for the weather-tight performance of the completed cladding system, including all penetrations and junctions with walls and parapets.

2. PRODUCTS

Materials

2.1 PLYWOOD SUBSTRATE
Plywood thickness 15mm, H3 treated, CPD grade.

2.2 UNDERLAY
Breather type Kraft paper laminates. Refer SELECTIONS for details.

2.3 PRE-FINISHED HOT DIPPED ALUMINIUM/ZINC COATED STEEL
Formability G300 steel sheet coated to AS 1397.

2.4 STAINLESS STEEL
Strip grade MM45 finish 2B with strippable protective film.

2.5 ARCITECUTRAL TRAY PROFILES
Standard tray rib centres is 555mm for Batten Cap and 515mm for Standing Seam.

2.6 FLASHING GENERALLY
Formable grade flashings, material to match selected cladding, to the same standards as the profiled sheets, notched where across profile. Refer SELECTIONS for details.

2.7 FLASHINGS TO EXTERNAL/INTERNAL CORNERS AND SIDE FLASHINGS ADJOINING OTHER MATERIALS
Supplied by the cladding manufacturer to match or to suit the cladding profiles and materials.

Components

2.8 FASTENERS GENERALLY
Durability of all fasteners not less than the cladding material being fixed.

2.9 FIXING CLIPS
Clips shall comply with NZBC E2/AS1: 8.4.9 Fixings: trough profile. Clips to suit the material and profile of the Architectural Tray sheet to be installed prior to installation of the trays.

Fix clips at no more than 600mm spacing through plywood into purlins with selected fixing screws.

2.10 FIXING SCREWS

Each clip will be fixed with a 10 gauge by 25mm counter sunk screw (minimum). Screws to be manufactured from material appropriate to the cladding material and the supporting structure as required by Architectural Roofing and with durability no less than the material fixed.

2.11 RIVETS

Minimum diameter 4.0mm sealed rivets. For Aluminium/Zinc coated steel cladding materials, use aluminium rivets.

Accessories

2.12 SEALANT

Neutral curing silicone or polymer sealant.

3. EXECUTION

Conditions

3.1 INSPECTION

Inspect the roof framing and supporting structure to ensure that it is complete and fully braced ready for plywood substrate and cladding.

3.2 PLYWOOD SUBSTRATE

Plywood to be a minimum of 12.5mm thick and complying with AS/NZS 2269, minimum CPD grade with the sanded side upwards. Treated H3 with waterborne CCA treatment and kiln dried after treatment. Lay with the face grain at right angles to the supports, staggered joints (brick bond) with all edges of the sheets fully supported. Fix with 10 gauge x 50mm stainless steel countersunk head screws, with a 3mm gap between all sheets. Fix at 150mm centres on edges and 200mm in the body of the sheets.

3.3 STORAGE

Take delivery of and accept packs of cladding dry and undamaged on delivery. Reject all damaged material. Store on a level firm base with packs well ventilated and completely protected from weather and damage. Do not allow moisture to build up between sheets.

3.4 HANDLING

Avoid distortion and contact with damaging substances including cement. Do not drag sheets across each other and other materials. Protect edges and surface finishes from damage. Use soft, flat sole shoes when fixing and for all other work on the roof.

3.5 SEPARATION

Isolate dissimilar materials in close proximity as necessary by painting the surfaces or fitting separator strips of compatible materials. Place isolators between metals and treated timber and cement based materials. Do not use lead sheet in contact with or allow water run-off onto galvanized or aluminium/zinc coated steel.

Application

3.6 SET-OUT

Carefully set out with side laps away from the prevailing wind with the widths of end sheets the same, all sheets square an over sailing the gutter true to line. Check during fixing to eliminate creep or spread and string lines along purlin centres to keep fastenings in line.

3.7 FORMING

Form stop-ends and downturns to the cladding manufacturer's details and techniques using the required tools.

3.8 SEAL CUT EDGES

In very severe marine environments see Architectural Roofing for recommendations.

3.9 THERMAL MOVEMENT

Cladding fixing and jointing to conform with Architectural Roofing requirements for thermal movement. NZBC E2/AS1:8.4.10 allowance for expansion notes specific design is required for lengths exceeding 18 metres.

Sliding clips to be used where cladding material exceeds 4 metres in length.

3.10 FIXING GENERALLY

Install and fix in accordance with the NZMRM NZ Metal Roof and Wall Cladding Code of Practice recommendations and to the cladding manufacturer's required fixing patterns and details for each area of the building cladding. Use only screws as required by the cladding manufacturer. Paint colour matched fixings and accessories before installation.

3.11 FIX UNDERLAY

Fit and lap cladding underlay over the cladding plywood substrate with 20mm over sail into gutter to the underlay manufacturer's requirements.

3.12 MARKING AND CUTTING

Cut only by shearing tools. Do not use black lead pencils for marking aluminium/zinc coated products.

3.13 FIX SHEETS

Fix sheets in place using the clips as previously set out. For Batten Cap and Batten Seam, fit cap flashings once sheets have been fitted.

3.14 FLASH

Flash cladding to parapets, wall and penetrations to detail to the NZMRM NZ Metal Roof and Wall Cladding Code of Practice recommendations and the cladding manufacturer's requirements. Cut accurately and fix using sealant and rivets to detail and to the cladding manufacturer's to form a weather-proof cover.

3.15 FIX RIDGES AND HIPS

Cut accurately and fix using primary fasteners to the purlins. Join using sealant and rivets to detail and to the NZMRM NZ Metal Roof and Wall Cladding Code of Practice. All laps 150mm minimum.

3.16 FIX VERGE AND CAP FLASHINGS

Cut accurately and fix using primary fasteners to the purlins. Join using sealant and rivets to detail and to the NZMRM NZ Metal Roof and Wall Cladding Code of Practice. All laps 150mm minimum.

3.17 PENETRATIONS

Flash and overflash all penetrations through the roof.

3.18 PENETRATIONS AND JUNCTIONS

Check that adjoining walls and parapets are prepared ready for the installation of the cladding. 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
- Cladding 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)

Completion

3.19 REPLACE

Replace damaged or marked elements.

3.20 LEAVE

Leave this work complete with all necessary flashings, undercloaks, valleys, ridges and hips all properly installed as the work proceeds so the finished roof is completely weather tight.

3.21 REMOVE

Remove trade rubbish and unused materials from the roof and surrounds daily during the work. Sweep down at the end of each day and clean out spoutings, gutters and rainwater pipes on completion of the roof. Remove debris, unused materials and elements from the site.

4. SELECTIONS

4.1 PLYWOOD SUBSTRATE

Type:	H3 treated / CPD grade
Thickness:	15mm

4.2 CLADDING UNDERLAY
Brand:
Type:

4.3 PREPAINTED ALUMINIUM/ZINC COATED STEEL ZR8/COPPER/ZINC ARCHITECTURAL TRAY
Profile:
Thickness:
Colour:

4.4 METAL FIXING CLIP
Profile/Spacings/Fixings: Refer to manufacturer's guidelines

4.5 METAL FLASHINGS
Location: Refer to drawings
Material/Thickness:
Colour: