Roof materials

A wide range of roofing materials and finishes are available – some much more common than others. This fact sheet describes current and historical roof cladding options in New Zealand.

CURRENT NEW ZEALAND roof cladding options for both residential and commercial roofs include profiled long-run metals; membranes; tiles, shingles or similar overlapping materials; translucent materials; special-application roofing; and other less common materials.

Profiled long-run metals

Common options include:

- aluminium/zinc (AZ) alloy-coated steel in corrugate, trapezoid, trough and tray sections
- factory-finished (acrylic, modified polyester, PVf_2) profiled aluminium/zinc (AZ) alloy-coated steel in corrugate, trapezoid, trough and tray sections
- profiled galvanised (Z) steel in corrugate, trapezoid, trough and tray sections
- profiled aluminium in corrugate, trapezoid, trough and tray sections
- factory-finished (acrylic, modified polyester, PVf_2) profiled aluminium in corrugate, trapezoid, trough and tray sections
- copper – tray or standing seam
- zinc – tray or standing seam
- stainless steel – tray or profiled sheet.

Other less common options are:

- factory-finished profiled galvanised (Z) steel in corrugate, trapezoid, trough and tray sections – still common on existing buildings
- aluminium/zinc/magnesium (AM) alloy-coated steel, zinc/aluminium/magnesium (ZM) alloy-coated steel and zinc/aluminium/magnesium (ZA) alloy-coated steel, all of which may be factory coated.

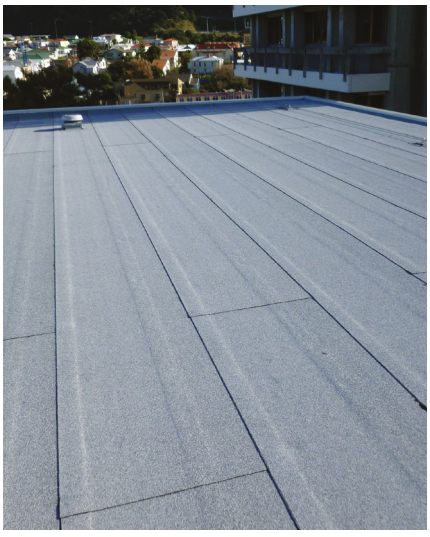
Timber shingles.

Note that the level of applied corrosion protection (the coating mass of Z or AZ) is typically less when the steel is factory coated.

Membranes

The most commonly specified membranes include:

- butyl – a synthetic rubber supplied as a roll or sheet with vulcanised joints
- EPDM (ethylene propylene diene monomer) – an elastomeric rubber supplied as a roll or sheet with vulcanised joints
- PVC (polyvinyl chloride) – supplied as a roll
- TPO (thermoplastic polyolefin) – supplied as a roll



Multi-layer membrane roofing.

- TPE (thermoplastic polyolefin elastomer) – supplied as a roll
- polymer (APP) modified bitumen with a mineral/ceramic chip, metal foil or acrylic coating – supplied as a torch-on or self-adhesive roll material
- polymer (SBS) modified bitumen with a mineral/ceramic chip, metal foil or acrylic coating – supplied as a torch-on or self-adhesive roll material
- multi-coat polymer gel – a liquid membrane
- acrylic paste – a liquid membrane
- aliphatic polyurethane – a liquid membrane
- polyurethane hybrids – liquid membranes.

Other less common options are:

- polymer (APAO) modified bitumen with a mineral/ceramic chip, metal foil or acrylic coating – supplied as a torch-on or self-adhesive roll material
- polymer (TPO) modified bitumen with a mineral/ceramic chip, metal foil or acrylic coating – supplied as a torch-on or self-adhesive roll material
- VET (vinyl ethylene terpolymer with a copolymer of PVC and EVA) – supplied as a roll
- KEE – a PVC modified with ketone ethylene ester resins supplied as a roll
- mastic asphalt – a limestone powder and aggregate bound with bitumen
- mineral fibre-reinforced bitumen sheets (no longer available but may still be in use on existing buildings)
- synthetic rubber – a liquid membrane.

Tiles, shingles or similar overlapping materials

These include:

- pressed steel in tile and shake profiles
- concrete – profiles include Types I, II and III
- asphalt shingles
- clay tiles – profiles include Types I (double pan), II (single pan) and III (flat profile)
- slate – manufactured or natural stone
- pressed copper tiles
- timber shingles of cedar (treated or untreated), heart macrocarpa or CCA-treated pine – shingles are traditionally sawn
- timber shakes of cedar (treated or untreated) – shakes are traditionally made by splitting timber
- butyl shingles.

Translucent materials

These include:

- polycarbonate sheets to match roofing profiles
- PVC sheets to match roofing profiles
- GRP sheets to match roofing profiles
- acrylic roof tiles to match clay or concrete tiles
- glass roof tiles to match clay or concrete tiles
- glass panels (e.g. for conservatories).

Special-application roofing

This includes:

- SIPS (metal-faced) panels
- proprietary roof glazing systems.

Other less common or historical roofing options

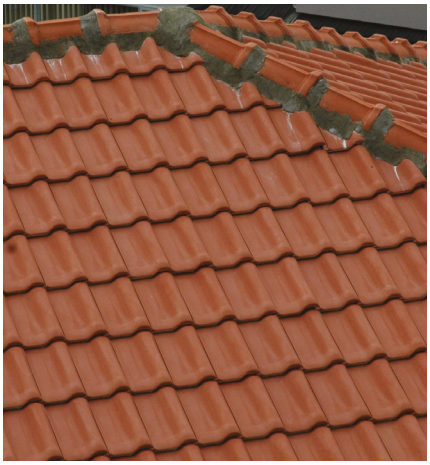
These include:

- lead – flat sheet with a batten roll or welted seam joint
- RWB (reconstituted wood product) large-profile corrugate
- thatch – made from straw or reeds, seldom used in New Zealand
- solar tiles – building-integrated photovoltaic (BIPV) materials that have solar cells built into them to generate electricity
- tensile fabric
- recycled tyre shingles
- high-strength (25 MPa) concrete
- PVC solid colour (not currently available in New Zealand) supplied as profiled sheets
- Malthoid (bitumen-based) sheet (no longer available but commonly used in the 1930s)
- fibre-cement slates (available in Europe)
- sodded roofs
- fibre-cement shingles (no longer available)
- fibre-cement shakes (no longer available)
- asbestos-cement shingles (no longer available)
- asbestos-cement large-profile corrugate (no longer available)
- organic asphalt shingles (no longer available, and most are likely to have been replaced).

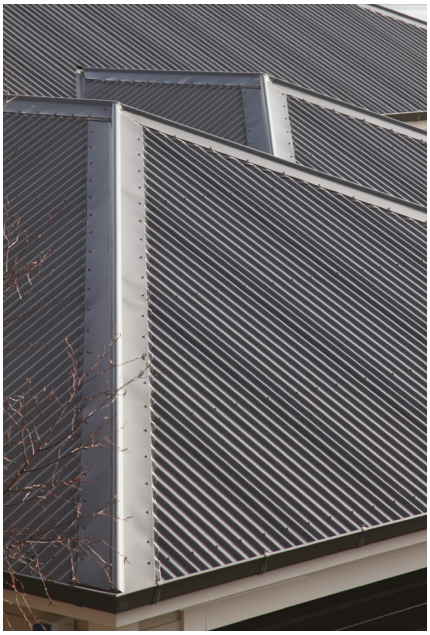
Bizarre roofing includes:

- CDs or vinyl records
- flattened plastic water bottles
- sod tiles
- tyres
- upturned boat
- jandal or flip flop soles
- number plates or licence plates
- sea shells
- tin can lids
- beer can shingles
- half tin cans (Spanish tile style).

You can find more information about roof materials in the BRANZ Good Repair Guides *Clay and Concrete Roof Tiles* and *Profiled Metal Roofing*.



Clay tiles.



Profiled metal.

ISSN 2463-672X