



Technical Information



Product:

Owens Corning Asphalt Roofing Shingles are a glass-fibre reinforced asphalt shingles surfaced with a ceramic coated mineral chip to provide protection from UV rays. The shingles, flashings and accessories form a weather tight roofing system when installed over a plywood substrate and roofing underlay.

They are available in four laminated profiles/types:
Owens Corning Oakridge® Pro 30 Asphalt Shingles
Owens Corning Oakridge® Pro 30 Super Asphalt Shingles
Owens Corning Duration® Premium Asphalt Shingles
Owens Corning Berkshire® Asphalt Shingles

Scope:

Owens Corning Laminated Asphalt Shingles can be used as a roof cladding for buildings within the following scope:

- The scope limitations of NZBC Acceptable Solution E2/AS1 Paragraph 1.1, with regard to floor plan area and building height
- and constructed with timber roof framing and plywood/sarking complying with the NZBC
- and where the roof pitch is 9.5 deg or greater
- and is located in NZS 3604 Wind Zones up to and including Very High, or Extra High for Duration Premium shingles only.

The system must be installed in accordance with the technical information by a SPS Building trained and approved installer.

Building Regulations: New Zealand Building Code (NZBC)

This Technical Information document has been produced to support the NZBC requirement for alternative solutions. Owens Corning Asphalt Shingles if designed, specified, installed and maintained in accordance with the information contained in this document, the Owens Corning Laminated Shingles Installation and SPS Building Product Specification documents will meet the following provisions of the NZBC.

B1 Structure: Performance B1.3.1, B1.3.2 and B1.3.4 Owens Corning Asphalt Shingles meet the requirements for loads arising from self-weight, gravity loads, temperature, snow, wind, impact and creep. Complies with B1.3.3 Ref: Sect; Structure

B2 Durability: Performance B2.3.1 (b) and B2.3.2 (a) 50 years. Owens Corning Asphalt Shingles meet this requirement. Ref: Sect; Durability

E2 External Moisture: Performance E2.3.1, E2.3.2 and E2.3.7 (c) Owens Corning Asphalt Shingles meet these requirements. Ref: Sect; External Moisture

F2 Hazardous Building Materials: Performance F2.3.1 Owens Corning Asphalt Shingles meet this requirement and will not present a health hazard to people.

G12 Water Supplies: Performance G12 and AS/NZS 4020 Owens Corning Asphalt Shingles meet this requirement. Ref: Sect; Water Run Off

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A full SPS Building Owens Corning Product Specification and Owens Corning Laminated Shingles Installation are available to download from the following website: www.spsbuilding.co.nz

Shingles: Owens Corning Asphalt Shingles are based on a range of profiles and have varied applications. The product and wind warranty properties shown in Table 1 should be considered when selecting which product to use. Individual product brochures are available to download from the following website: www.spsbuilding.co.nz

Table 1:

	Warranty Length	Wind Warranty	Wind Length	Non-Tropical Algae
Duration® Premium	50 YRS	130 MPH*/209 Km/h	10 YRS	10 YRS
Oakridge® Pro 30 Super	30 YRS	110 MPH/ 180 Km/h	15 YRS	10 YRS
Oakridge® Pro 30	30 YRS	110 MPH/ 180 Km/h	5 YRS	N/A
Berkshire®	40YRS	110 MPH/ 180 Km/h	10 YRS	15 YRS

Oakridge Pro 30, Oakridge Pro 30 Super and Duration Premium Laminated Asphalt shingles are double layered and manufactured by laminating two single layer sheets together with asphaltic cement. The top sheet is cut to a profile which gives it a random tab pattern when overlaying the lower sheet. (Fig 1) The **Berkshire** Laminated Asphalt shingle is also double layered and manufactured by laminating two single layer sheets together with asphaltic cement. The top sheet is cut to a profile which gives a four tab slate pattern when overlaying the lower sheet. (Fig 2)

Fig 1



Fig 2



Accessories:

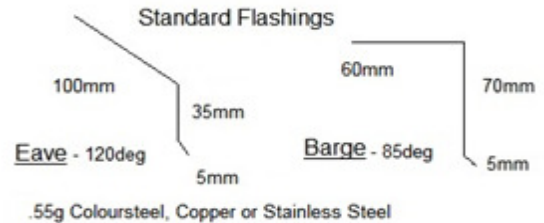
Hip & Ridge Capping: Owens Corning “Hip and Ridge with sealant” perforated 4 Tab shingle in 250mm x 337mm size or Owens Corning “Supreme” 3 Tab shingle is cut into 305mm x 337mm sizes of like colour for use on hips and ridges. Berkshire Hip and Ridge shingle in 305mm x 305mm of like colour for use with Berkshire Shingles

Roof Substrate:

- CHH Ecoply T&G 15mm & 17mm (F11 Stress Graded) DD grade or better treated in accordance with the requirements of NZS 3602:2003. Available in 2.4m or 2.7m x 1.2m wide sheets
- Juken “Superstrand Sarking” 16.25mm H3.1 Treated. (Check with manufacturer for sheet sizes) BRANZ Appraisal #703 must be current for this product to comply

“Eave” drip edge flashing and “Barge” Fascia flashing.

In accordance with AS 1397 and NZBC E2/AS1, 4.0 Flashings folded pre-painted steel .55g cut to an overall girth of 135mm and 3.0m or 3.6m lengths. Eave drip edge flashings folded at 100mm at an angle of 120 deg on the back face and then folded again 5mm up the opposite direction from the remaining 35mm to form the drip edge. Barge fascia flashings folded at 60mm at an angle of 86 deg on the back face and then folded again 5mm up in the opposite direction from the remaining 75mm to form a drip edge. For Extra High Wind Zone Barge fascia flashings must extend a minimum of 90mm to form drip edge over fascia.



Note: Use stainless steel or Marine grade coil in coastal zones D and E as outlined in NZS 3604 Sect 4 Durability.

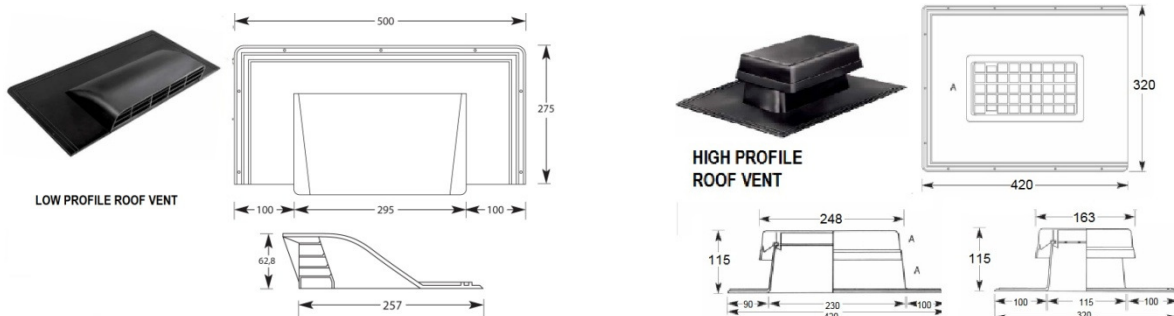
Self Adhesive “Peel & Stick” Underlay: Self adhesive underlay to meet ASTM D1970. Used to cover the plywood substrate for roof pitches above 9.5 deg and under 12 deg. Where snow and ice build-up is possible apply products to the plywood at the eaves to the plumb line of the exterior wall framing or soffit area. Follow manufacturer’s instructions when installing. The following products have been assessed and meet the requirements. “Weatherlock” by Owens Corning, “Armourgard” by IKO Industries, “Stormshield” by IKO Industries “Eave guard” by Henry Company.

Shingle Starter Strip: 168mm wide Pre cut starter strip to eaves to prevent exposure at joins of first row of shingles. Products approved for use include Owens Corning “Starter Strip”, IKO “Leading Edge” or Self Adhesive “Peel and Stick” underlay can be used as a starter if installed at eave wider than 168 mm

Ragfelt Underlay/ Synthetic Underlay: Synthetic underlay or #15 or 30 lb Bitumen impregnated Standard or Plain Felt Underlay to ASTM: D-226 or ASTM: D4869, horizontally lapped, 100mm across the roof and completely cover hips, ridges (except where ridge vents are used), and valleys are approved for use under the shingles and stapled or nailed tightly down to the plywood substrate in accordance with the manufacturers specifications. The following products have been assessed and meet the requirements. “IKO Stormtite” Synthetic, IKO AM #15 Plain or Standard Felt, IKO 30 lb, Interwrap “RhinoRoof U20” Synthetic.

SPS Ridge Vents: Manufactured from 3 layers or 4mm Black pack flute creating a 2.0m long x 10mm flexible vent installed continuously across the ridges and fixed down with the ridge capping to create a vented roof space. Sizes available 180mm, 230mm & 280mm wide and provide 0.02m² of Net Free Vent Area per metre. The following products have been assessed and meet the requirements. SPS Building “Ridge Vent Strip”, VentSure® Rigid Roll Ridge Vent.

Low profile and High profile vents: Used in areas where there are no ridges to vent the roof space. A hole is required to be cut into the plywood and the vents are to be fitted into the shingle rows to create a weather tight finish around them. High profile vents to be used where roof pitch is 17 deg or lower and provides 0.025m² Net Free Vent Area. Low profile vents to be used where roof pitch is over 17 deg and provides 0.018m² of Net Free Vent Area.



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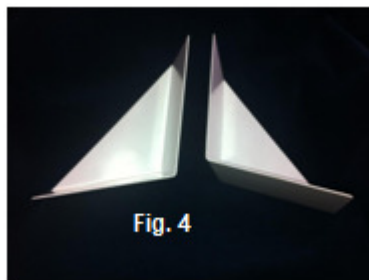
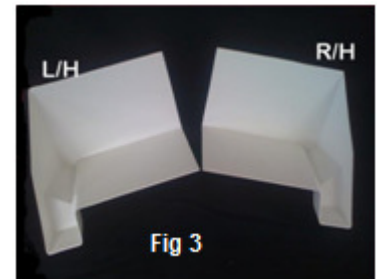


Shingle Nails: Stainless Steel Coiled gun nails, large flat headed, ring shank or annular grooved. 25mm & 32mm x 3.05mm nail for use on Owens Corning Asphalt shingles in accordance with manufacturers recommendations. 45mm x 3.05mm nails for use on ventilated Hip & Ridge capping. Hot-dip Galvanised nails meeting the above sizes and meeting the requirements of AS/NZS:4680: 1999 may be used in non-coastal regions.

Bitumen Adhesive & Sealants: Shell "Tixophalte", Holdfast "Shark Seal", SPS Brand or other bitumen based adhesive sealants that are declared by the manufacturers as being compatible and suitable for use with Asphalt Shingle roofing materials and complying with NZBC:B2 Durability B2.3.1(b). Use to provide additional cohesion for areas around valleys, penetrations, chimneys & barge flashings.

Stepped wall flashings: Butyl rubber membrane or EPDM complying with E2AS1 flashings 250mm & 300mm rolls x 1mm thick to be cut to suit and used where shingle abuts to raking chimney walls & dormers. Product selected must be UV resistant, suitable for exterior applications and must be glued where necessary with the manufacturers approved adhesive and comply with NZBC:B2 Durability B2.3.1(b) 15 years.

PVC Kickout flashings: Designed to be used where roof & wall meet and the Kickout flashing is a one piece stop end flashing that diverts water into the guttering at wall and roof junctions. The Kickout flashing creates a downward and outward water-flow off the roof and away from the wall, preventing water intrusion at roof to wall intersections. The flashing is manufactured from UV stable PVC and is available for left hand and right hand applications. (Fig. 3)



Wall Stop-End flashings: Designed to be used where Lean to roof & wall meet and the Wall Stop-end flashing is a one piece stop end flashing that diverts water away from the cavity at the top of roof where the roof stops and the wall continues. The Wall Stop-end flashing creates a downward and outward water-flow off the roof and away from the wall, preventing water intrusion at roof to wall intersections. The flashing is manufactured from UV stable PVC and is available for 15 to 40 deg roof applications. (Fig. 4)

Pipe penetration flashing: Either EPDM or Butyl Rubber flashing to be cut to size and used to flash around pipe penetrations through the asphalt shingles in accordance with the manufacturers Installation Instructions & Technical Detail Drawings current at the time of installation.

Structure

Timber framing and substrate must be in accordance with NZS3604 or AS/NZS 1170 and treated in accordance with NZBC Acceptable Solution B2/AS1 and NZS 3602 for the building design. Substrate must be of suitable composition to meet the requirements of "Light Roof" framing in accordance with NZS3604: 2011.

Total asphalt shingle and substrate mass not to exceed 20kgs/m² under this standard. A "Heavy Roof" is defined as a mass of more than 20kgs/m² but not exceeding 60kgs/m². Substrate must also comply with the requirements of AS/NZS 2269:2012 (Table 2)

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Table 2: Approx Roof Mass (plywood example)

Shingle Type	Shingle weight (per m2)	15mm plywood (per m2) 6.9 kgs	17mm plywood (per m2) 7.9 kgs
Duration® Premium	12.6 kgs	19.5kgs	20.5 kgs
Oakridge® Pro 30 Super	11.3 kgs	18.2 kgs	19.2 kgs
Oakridge® Pro 30	10.7 kgs	17.6 kgs	18.6 kgs
Berkshire®	17.8 kgs	24.7 kgs	25.7 kgs

Juken NZ Ltd “Superstrand Sarking” has a mass of 11 kgs/m2 and may exceed the parameters of “Light Roof” when used with the above Owens Corning Asphalt Shingle products.

Installation of all substrates must be carried out in accordance with the manufacturer’s specifications.

Snow

Owens Corning Asphalt Roofing Shingles are suitable for areas where buildings are designed for 1 kPa snow loading. Refer to SPS Building Owens Corning Laminated Shingles Installation document Sect: 2a & 7 for more information.

Wind Zones

When fixed in accordance with the manufacturers and suppliers requirements Owens Corning Asphalt Roofing Shingles are suitable for use in all NZS 3064 Building Wind zones, up to and including Very High, or Extra High for Duration Premium shingles only.

Substrates

Rafters or Trusses must be at a maximum 900 mm centres for 15mm and 17mm thick substrate. When using Plywood the T & G edge must be butt jointed with no gaps between the edges of the sheets. Square edges must have a 2-3mm gap between the sheets. Fixing must be in accordance with the substrate manufacturer’s requirements.

Plywood grain face must be laid at right angles to supports. The sheets must be laid with staggered joints to form a brick lock pattern.

Note: Plywood or “Superstrand” manufacturer’s technical specification must be referred to for confirmation of maximum thickness and grades relative to the roof pitch and framing centres.

Durability

Owens Corning Asphalt Roofing Shingles are expected to have a serviceable life of at least 15 Years providing maintenance is carried out in accordance with the information provided in this document and also contained in the “Asphalt Shingle Maintenance” document available to download from the following website:
www.spsbuilding.co.nz

Owens Corning Asphalt Roofing Shingles may lose some of the surface granules over a period of time. On aging some surface cracking may appear however these cracks will not affect the weather tightness of the roof covering within 15 years.

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Maintenance

Clean Debris

All roofs over a period of time collect debris, such as leaves or air-born rubbish. This debris can collect in between or behind other objects that project from your roof, like your chimney, an HVAC unit or vent pipes. It's important that debris be removed from your roof on a regular basis (at least three times or more a year), so water on your roof won't contribute to deterioration of the asphalt shingle.

Inspect for Moss and Algae

Moss and algae formations on your roof can contribute to the deterioration of asphalt shingles. If you discover that you have algae or moss growing on your roof, you should remove them. You can use zinc or lead control strips, for example, to inhibit growth of formations.

Check Shingles

Examine your roof for any shingle tabs that might have come loose. If you do find loose shingles, repair them with bituminous type roofing sealant/adhesive. A small amount of the sealant/adhesive applied to the underside of the shingle will secure it. If you find shingles that have been damaged or are missing, contact an approved Roofing Contractor.

Check the Gutters

In order for water to flow properly off your roof and into rain gutters, you will need to examine the gutters. Check both the downpipes and the gutter to make sure debris hasn't collected in them which could interfere with the proper functioning of your gutters.

Check for Overgrown Tree Branches

Inspect your roof for tree branches that have grown onto the roof and may be creating wear as they are blown by the wind. If branches are scraping on your roof, you should trim them to prevent leaves and branches from collecting

Cleaning your Asphalt Shingle Roof

- 1) Mix a solution of 1 part chlorine bleach with 3 parts of water.
- 2) Apply this solution (using a low pressure hand held sprayer) over the asphalt shingles.
- 3) Do not scrub the tiles, as this may remove the mineral chip, damaging the shingle.
- 4) After 15 minutes, rinse the bleach solution from the roof by gently spraying with clean water.

In order to prevent the return of algae, a copper or zinc coated metal strip can be installed under the top row of shingles on either side of the ridge. With approximately 60mm exposed, rain water will run down the roof carrying traces of the metal, killing off any algae growth.

Chlorine bleach (such as Janola) is available from most hardware stores or supermarkets.

N.B If potable water is being collected from the roof, disconnect all down pipes prior to applying the chlorine solution.

**SPS Building does not recommend the use of any other alternative form of treatment.
For more information please phone our office on 0800 573 301 or 09 573 3017**

Prevention of Fire

Protection or separation must be provided to Owens Corning Asphalt Roofing Shingles from heat sources such as fire places, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 –C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat source.

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External Moisture

When fixed in accordance with the manufacturers and suppliers requirements and as outlined in this Technical Information document Owens Corning Asphalt Roofing Shingles will shed precipitated moisture and therefore meet the requirements of NZBC Clause E2.3.1. They will also prevent the penetration of water that could cause undue dampness, or damage to building elements therefore meeting the performance requirements of NZBC Clause E2.3.2.

Roofs clad with Owens Corning Asphalt Roofing Shingles, if ventilated in accordance with the Technical Information provided by the manufacturers and suppliers, allow excess moisture present at the completion of the construction to be dissipated without permanent damage to building elements and therefore meet the requirements of NZBC Clause E2.3.6. This is achieved by ensuring the construction moisture levels are no higher than 18% when the shingles are laid and before the ceiling is closed in, as well as providing an appropriate level of ceiling cavity ventilation.

Water Run Off

Owens Corning Asphalt Roofing Shingles do not contaminate water and comply with AS/NZS 4020. Collection of water from any roof surface made of any material should be deemed non-potable due to possible contamination from other sources. Although complying with AS/NZS 4020 any water collected off Owens Corning Asphalt Roofing Shingles should only be considered potable once it has passed through a suitable filtration and sterilisation system.

Note: A “first flush” diverter system must be installed to allow the first 25mm of each rainfall to bypass to waste before drinking water collection begins.

Filtration and sterilisation system experts will be able to offer advice which system is best for your region however the inclusion of a “Loose Carbon” media tank filter† within the system is necessary to provide a much higher water quality and ensure water colour clarity.

‡ (Requires other filters and annual maintenance) Ask the suppliers for more information.

Internal Moisture

Adequate roof space ventilation is necessary to ensure roof space internal moisture levels and temperatures are controlled. Roof space ventilation requirements are outlined in the Installation and Specification documents available to download from the following website: www.spsbuilding.co.nz

Air should be allowed to flow from the bottom of the eave to the top of the ridge. In Skillion type roofs, a clear, uninterrupted ventilated air gap of at least 55mm mm must be present for plywood substrates and 100mm for Superstrand. Plywood with T&G edges should be used on Skillion type roofs to minimise restrictions caused by timber blocking. If required by the roof design or occupancy, a perforated soffit lining, soffit and ridge vents should be used to minimise the quantity of moisture and heat accumulating in the roof space.

For unusual roof designs or further advice on achieving adequate roof ventilation contact a technical consultant at SPS Building.

Installation Qualification

Installation of Owens Corning Asphalt Roofing Shingles and accessories supplied by SPS Building must only be carried out by trained installers who have been trained and approved by SPS Building. Installation of Asphalt Roofing Shingles is classed as Restricted Building Work and installation must be completed by or under the control of a Licensed Building Practitioner with the relevant licence class in accordance with the manufacturers/suppliers technical information, specification and installation instructions.

Installation of any products supplied by the building contractor must be completed by or under the control of a Licensed Building Practitioner with the relevant licence class in accordance with the manufacturers/suppliers technical information, specification and installation instructions

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Sources of Reference.

AS/NZS 1170: 2002 Structural design actions
AS/NZS 2269: 2012 Plywood – Structural
AS/NZS 4680: 1999 Hot-Dip galvanised (zinc) coatings on fabricated ferrous articles
AS/NZS 4020: 2005 Testing of products for use in contact with drinking water.
NZS 3602: 2003 Timber and Wood based products for use in building.
NZS 3603: 1993 Timber structures standard
NZS 3604: 2011 Timber framed buildings
Acceptable Solutions and Verification Methods for New Zealand Building Code External Moisture Clause E2,
Department of Building and Housing, Third Edition July 2005 (Amendment 6, 14 February 2014)
Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and
Handbooks
The Building Regulations 1992

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