Vulcan Charred

Overview

Vulcan Charred is created from thermally modified New Zealand plantation timber with natural stability and durability. The timber is factory charred in the style of Japanese shou sugiban or 'yaki sugi' with 'heavy alligator' finish. The boards are then coated with Abodo's Char Oil to create a unique high durability black finish for exterior or interior use.

Wood species:	Thermally Modified Radiata Pine (Pinus Radiata).

Standard profiles:

Cladding

WB10S 135x20.5
(115mm cover) Vertical/Horizontal

Screening

AW91 69x20

AW92 90x20

Machine Gauge 140x20
Vertical

Rhombus Clip

RHBC1 90 x 26

RHBC1 68 x 26

Lengths:	Mixed length – Supplied as packets with 1.8m and longer, or fixed lengths at Abodo's option. Product supplied as standard in mixed length.

Product specifications

Name:	Abodo Vulcan Charred.
Quality:	Select Grade/Front face and edges virtually free of any defects but with one edge knot and one small face defect allowed per piece in 20% of boards only. Back side with some defects allowed.
Finish:	Factory Charred – Heavy Alligator, front face and edges only. Random variation in surface appearance including colour, texture and pattern are expected features of the charred finish. Cracks and splits may occur during the charring process – these are considered an acceptable part of the finish provided they are superficial. As timber is a natural product up to 5% must be allowed for out of grade accounting for human error. Defecting on site may be required to meet visual standards – for this reason it is recommended to allow for minimum 15% wastage when ordering.

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Product specifications

Durability:	Thermally modified TM230 degrees Celsius schedule. No chemical preservatives used. Field tested at SCION, Rotorua. Suitable for uses described in NZS3602:2003 Table 2A 'Requirements for wood-based building to achieve a 15 year durability performance Members exposed to exterior weather conditions and dampness'. Durability Class 2 above ground (AS5604). Durability Class 1 (EN350-1). Available optionally treated for termite-prone areas.
Insect attack:	Thermally modified pine is resistant to most wood boring insects but is not always resistant to termites. Additional treatment is required for termite zones.
Intended use:	Above ground applications for residential and light commercial buildings – wall cladding, screening, soffits, interior linings.
Serviceable life:	30 years or more when maintained according to manufacturer's recommendations.
Warranty:	15 years against fungal decay (timber substrate only – subject to terms and conditions). The factory charred finish is sold without warranty.
Moisture content:	Approx. 7% MC (+/-2%) at time of dispatch.
Construction:	Solid timber.
Expected dimensional change in structure:	Width expansion approx 2.5%, length expansion approx 0.25%, thickness expansion approx 2% (from 7%MC to fibre saturation -variation will occur between boards).
Density:	420-450 kg/m3.
Fire (interior):	Group 3.
Hardness:	Low (2.5kN Janka).
Weight:	~11 kg/m2 ('light weight cladding' NZS3604).
Thermal properties:	~0.099 W/(mK) (Thermal conductivity is reduced by 20-25% compared with radiata pine).
pH (indicative):	3.9.
Compatibility:	Vulcan has little or no corrosiveness on most metals and can be placed in contact with most building materials. Care should be taken to separate timber from zinc. Normal PVA, PU, MUF glues and RF resins can be used.
Coating:	Vulcan Charred is generally supplied factory prefinished with at least one coat of Char oil to front face, back and edges. Ends of boards must be sealed during installation. Up-take of coating is generally higher due to porosity of the char layer.
Certification:	FSC®-certified mixed, No.: SGS-COC-004944.
Living Building Challenge:	Red List Free.

Product handling

- Weatherboards and accessories must be kept clean dry, under cover and out of the weather prior to installation.
- Timber must be stored horizontally on bearers at least 100mm off the ground.
- Allow boards to acclimatise on site prior to installation.
- Inspect boards carefully prior to install. **Do not install if moisture content is greater than 16% or if there is visible damage. Installation will be taken as acceptance of product quality**.
- The charred finish is delicate and can be subject to damage with rough handling. Extra care must be taken during transport, storage and installation so as not to damage the factory finish of the boards.
- Wear dust mask, eye protection when cutting timber.
- Timber off cuts may be repurposed, disposed of in landfill or burnt.
- Minor damage to the char finish may be touched up with Abodo Char Oil Ebony.

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General design considerations

- The factory charred finish is relatively delicate and susceptible to impact damage, so should be placed away from high traffic areas or areas where it may get knocked easily. For these areas consider another finish such as stain or paint.
- Although Vulcan charred is a relatively low maintenance finish, it still does require some care for long term aesthetics and performance.
- The char layer is created in the Japanese 'yaki sugi' style and is designed to erode over time. It is inevitable and expected that there will be a change in colour over time as timber substrate is exposed, with some areas changing quicker than others. This natural weathering process is known by the Japanese as 'wabi sabi'.

  "Wabi-sabi is the understanding and appreciation of finding beauty in every aspect of imperfection in nature. To see and enjoy the aesthetic of nature, and know that she is imperfect, impermanent, and incomplete."
- Abodo provides a warranty for the timber substrate, however no warranty is given or implied for the charred finish – it is no different from stain finish in this regard.
- In exterior applications regular re-coating with Abodo Char Oil will extend the life of the finish over time by slowing down the erosion of the char layer. If you choose not to re-coat premature wearing of the char finish must be expected.

Fixing overview

Cladding – exterior:

- Exposed sites, such as coastal locations, with abrasive sand and salt air may see faster erosion of the sacrificial char layer. To maintain the black aesthetic a re-coat with char oil may be required earlier than 4 years.
- Timber framing is to be in accordance with NZS3604 or otherwise specific engineered structural system. Studs must be spaced at max 600mm centres.
  - If installing horizontal weatherboards nogs must be spaced at max 800mm centres.
  - If installing vertical weatherboards nogs must be spaced at max 480mm centres, or max 800mm centres if using structurally fixed CBH-45x45mm cavity battens.
- Fix cladding over a waterproof, breathable building wrap, rigid air barrier or other suitable waterproof substrate in conformance with NZBC E2/AS1.
- Install weatherboards onto a cavity system with minimum 45x18mm H3.1 cavity battens.
- For vertical fix weatherboards, horizontal cavity battens must be castellated (notched) and bevelled to allow water run-off in service eg: CBH-20x45, CBH-45x45.
- Structurally fixed timber cavity battens are allowed, provided battens are H3.2 treated and fixed with stainless steel flat head nails or 10g screws staggered at min 300mm centres when using a 20x45mm cavity batten, or 600mm centres when using a 45x45mm cavity batten, and with min 40mm fixing penetration into stud.
- Fix boards either vertically or horizontally at the following maximum batten spacings:
  - 480mm centres for vertically fixed weatherboards; or
  - 600mm centres for horizontally fixed weatherboards
- High quality hot dip galvanised fixings should be used as minimum. Stainless steel fixings must be used in areas near the sea. Pre-drill fixings using a drill bit 1/3rd smaller than the fixing.
- For WB10 secret fix profile, use 6g counter sunk head self-drilling screws such as Abodo cladding screw so as to achieve 30mm penetration into stud (or stud and batten combined if using a structurally fixed cavity batten), and positioned into the fixing positioning groove 12mm from the tongue edge. Fixing with self-drilling, counter sinking screws is recommended to minimise damage to the char finish.
- Allow a minimum of 2mm expansion gap between boards.
- Fixings at ends of boards must be at least 12mm from edge, and must be pre-drilled before applying fastener.
- Cut ends and notches must be sealed with Char Oil, Protector Oil or other approved sealer.
- Joins between board ends must be off-set and made over battens only, using a 35degree mitre, and application of sealant at the join eg: Sikaflex 11FC.

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Fixing overview

- Use Abodo finishing mouldings or soakers backed by hemmed corrosion resistant internal flashings as required, windows, doors and where cladding meets soffit in accordance with E2/AS1. Fix mouldings with screws at max 450mm centres. Check Abodo drawings for detail.
- For cavity systems, use perforated cavity base closer flashing at base board to allow drainage, air flow and keep out vermin. For WB10 horizontal weatherboards, use the AWF1 Abodo WB10 closer with bottom edge of the profile into the flashing. Base of cladding must finish minimum 100mm above paved surface or 175mm above unpaved or 35mm above roof, membrane or concrete decking.

  Refer Abodo Codemark Weatherboard Cladding System Manual for more details.

Soffits, interior ceilings/walls:

- For soffits, fix boards onto battens spaced at maximum 600mm centres.
- Secret fix boards with 6g counter sunk head self-drilling screws such as Abodo cladding screw so as to achieve 30mm penetration into stud and positioned into the fixing positioning groove 12mm from the tongue edge.
- For interior applications alternatively secret fix with panel pins at 600mm centres and glue to substrate with a bead of polyurethane adhesive.
- Allow a minimum of 2mm expansion gap between boards.
- Fixings at ends of boards must be at least 12mm from edge, and must be pre-drilled before applying fastener.
- Joins between board ends must be off-set and made over battens only, using a 35degree mitre, and application of sealant at the join.
- Face fix final board and punch nail head.

Exterior open joint rain screen:

- Dressed four sides screening must be installed over a building code compliant waterproof substrate and fixed onto H3.2 treated structurally fixed timber cavity battens at max 600mm centres.
- Cavity battens shall be min 45x45mm H3.2 pine, machined with a 15degree bevel at top to shed water away from the wall. Structurally fix with 10gx90mm stainless steel 316 screws into studs at max 600mm centres with fixings off-set from centre line by 12mm. For fixing to masonry use stainless steel masonry anchors at max 600mm centres.
- Face fix screening with high-quality stainless steel self-drilling self-countersinking screws to achieve min 30mm penetration into cavity battens. Black painted head screws may be used for a cleaner aesthetic.
- Space boards with minimum 5mm gap between edges.
- Apply two fixings approximately 14mm from board edges at max 600mm centres.
- Fixings at ends of boards must be at least 12mm from edge, and must be pre-drilled before applying fastener.
- Cut ends, notches and exposed end grains must be sealed with Abodo End Seal or other approved end grain sealer, paint or metal flashing.
- Screening should generally be installed minimum 35mm above paved surface/ decking or 100mm unpaved surface.

Rhombus Clip open joint rain screen:

- Fix screening over waterproof substrate in conformance with NZBC E2/AS1.
- Fix screening to minimum 45x45mm H3.2 structural timber cavity battens spaced at max 800mm centres.
- Horizontal cavity battens should be with beveled top to allow water run-off in service away from the wall.
- Structurally fix cavity battens to studs/nogs at max 600mm centres with 90x3.15mm stainless steel flat head ring shank nails or 90mm stainless steel screws, or if fixing to masonry use M6 x 75mm split drive masonry anchor (Ramset or equivalent), with fixings staggered 12mm either side of centre line.
- Screening may be fixed either vertically or horizontally.

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Fixing overview

- Fix screening with Abodo Rhombus Clip and screw ensuring a minimum of 30mm screw penetration into cavity batten.
- Fix first row of clips using a plumb line making sure they are level and in a straight line.
- Vertical screening must have a screw secret fixed at 45 degree angle through the tongue of each board at both top and base of wall, in order to prevent slipping of boards.
- Horizontal screening must have screws secret fixed at 45 degree angle through top edge of the final board at top of wall to hold it in place.
- All cut ends and notches must be sealed with penetrating oil, Char Oil or approved end sealant.
- Joins between board ends must be made over cavity battens only, with one clip placed either side of the join, and allowing a 2mm gap.
- Apply cavity closer as necessary to base of wall to stop movement of vermin into cavity.
- Cladding must finish 100mm above paved surface or 175mmm above unpaved surfaces.
- Use Abodo finishing mouldings backed by hemmed corrosion resistant internal flashings as required, corners, windows, doors and where cladding meets soffit. Fix mouldings with stainless steel screws at max 450mm centres.

Refer to Rhombus Clip TDS 51 for further fixing details.

Interior screening:

- For interior application, screening may be direct fixed – pinned and glued with polyurethane adhesive, screw fixed to suitable substrate such as MDF or plywood or fixed to cavity battens. Fixings at max 600mm centres.

Maintenance

Exterior:

- Wash down every 12 months with gentle detergent and water. Soft wash rinse with low pressure hose and soft bristle brush if required, taking care not to damage the charred surface. Water blasting is not permitted.
- Ensure leaves and debris are not allowed to accumulate on or around the timber.
- Make a maintenance check every two summers. Check all timber, junctions, flashings, mouldings and replace or remediate as required to maintain weather tightness of the system.

The charred finish is considered a sacrificial layer that can be expected to flake and wear away slowly over time due to the mechanical action of wind and rain. This natural weathering process is referred to by Japanese as 'wabi sabi' and may reveal blackened wood with variations in colour from grey to brown tones or over time more grey tones. Re-application of black pigmented coating such as Abodo Char Oil -Ebony will mitigate this effect and help to reduce further erosion of the char layer.

- To maintain the char finish in optimal condition it is recommended to re-coat approximately every 2-6 years with Abodo Char Oil. The re-coat period may be longer or shorter depending on climatic conditions and/or positioning to weather.
- After the first re-coat the period between re-coats can be expected to extend as additional coating absorbs and builds into the timber surface.
- If timber is not re-coated then faster degradation of the char layer can be expected over time.
- Minor damage to the char finish may be touched up with Abodo Char Oil -Ebony. Do not attempt to char timber once installed.

Indicative weathering process after 2 years:

Interior:

- Clean with soft wet cloth.
- Minor damage to the char finish may be touched up with Abodo Char Oil -Ebony. Do not attempt to char timber once installed.

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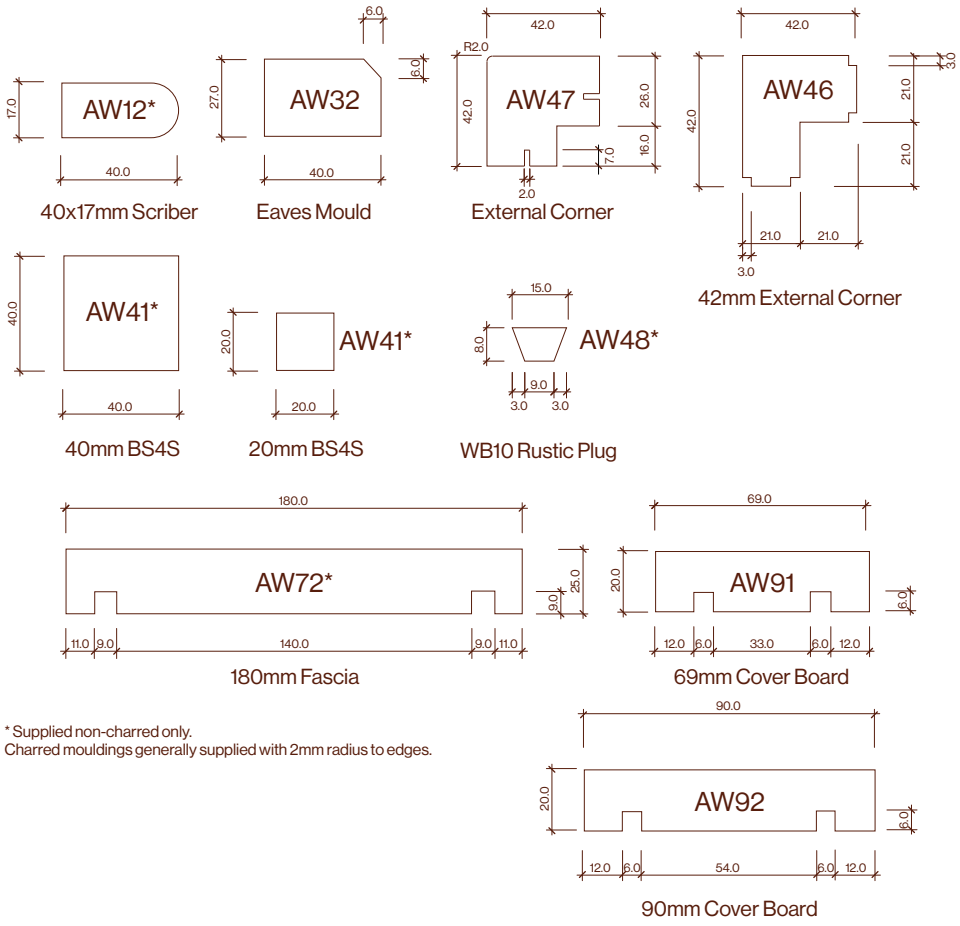
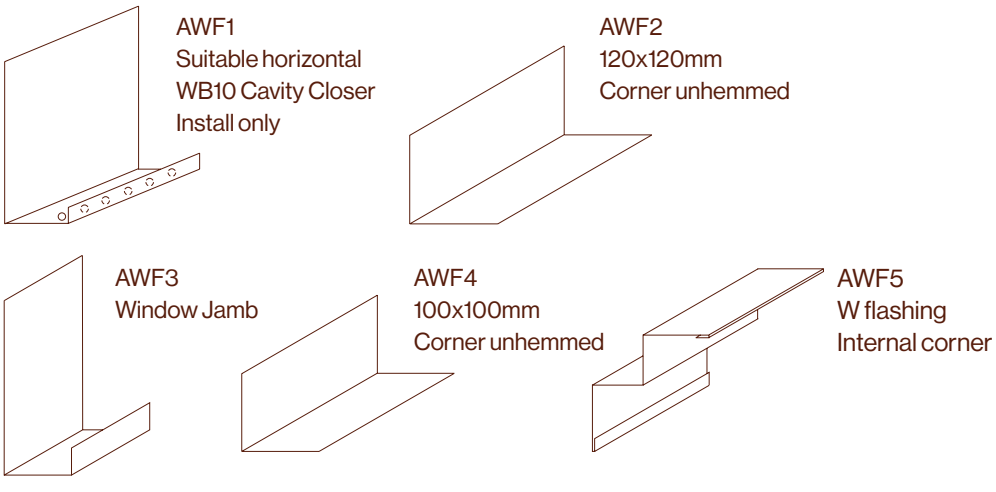
Accessories

Mouldings :



* Supplied non-charred only.
Charred mouldings generally supplied with 2mm radius to edges.

Flashings:



AWF1
Suitable horizontal
WB10 Cavity Closer
Install only

AWF2
120x120mm
Corner unhemmed

AWF3
Window Jamb

AWF4
100x100mm
Corner unhemmed

AWF5
W flashing
Internal corner

Supplied as 3m length stainless steel.

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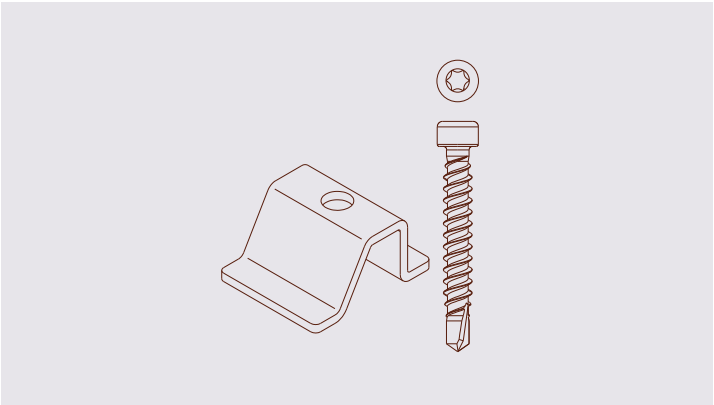
Accessories

Abodo Char Oil – Ebony/Clear, 4L, 10L:

Abodo Rhombus Clip and 4.2 x 32mm screw stainless steel 316 powder coat black:



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