

THE INSTALLERS GUIDE



FASCIA, GUTTERS & DOWNPIPES

INSTALLATION GUIDE

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Fascia, Gutter & Downpipe Installation Guide



Dimond rainwater system application - fascia, gutter and downpipe installation.

Important: This guide must be reviewed against the consented drawings, project specification, Dimond product literature, the New Zealand Building Code, the NZMRM Code of Practice, the RANZ Guide and relevant standards before installation begins.

1. Scope and Design Responsibility

Dimond rainwater disposal systems are designed to collect and discharge rainwater from roof areas. Unless a specific design states otherwise, Dimond metal gutters are intended to be installed around the perimeter of the building and are not intended for internal gutter applications.

- This guide applies to Dimond metal fascia, gutters and downpipes manufactured or supplied for New Zealand projects.
- Installation must be completed by suitably qualified installers with appropriate experience in metal rainwater systems.
- Custom rainwater systems, aluminium systems and specifically engineered systems require separate project-specific design and Dimond confirmation.
- Where the installation detail is not shown on the consented drawings, the installer and main contractor must agree the detail in writing before work begins.

Roof Drainage Design Requirements

- The designer must confirm roof catchment area, rainfall intensity, gutter capacity, outlet size, downpipe size and downpipe locations.
- The gutter and downpipes must be sized to suit the roof catchment and the flow capacity required for the site.
- Use 50-year Average Recurrence Interval rainfall values when assessing gutter capacity. Site-specific rainfall can be determined using NIWA HIRDS where required.
- A secondary overflow path must be provided so water can discharge outside the building envelope if outlets block or rainfall exceeds design conditions.
- The overflow cross-sectional area should be at least equal to the primary outlet size unless a specific drainage design is provided.

2. Product Selection, Durability and Compatibility

Correct product selection is critical. The material, coating, fasteners, brackets, sealants and accessories must suit the building environment, roof catchment, maintenance access and the adjacent materials they contact.

- Steel-based fascia, gutter and downpipe products are typically manufactured from 0.55 mm G300 steel with metallic protective coating and a paint coating suitable for rainwater goods.
- The selected product and coating must suit the New Zealand Building Code environmental category and the required service life.
- Fasteners must have durability equal to or greater than the rainwater material being fixed.
- Exposed fasteners should be minimum Class 4 in severe environments. Class 5 is recommended in very severe environments.
- Avoid direct contact between incompatible metals. Stainless steel must not be in direct contact with metallic-coated steel, aluminium or zinc products unless specifically isolated and detailed.
- Where products are supplied from different manufacturers, colour and weathering differences can occur. Dimond recommends using compatible Dimond-supplied components wherever practical.

Aluminium Fascia and Gutters

Aluminium fascia, gutter and downpipe systems may require custom design and are not automatically covered by standard steel rainwater installation details. Confirm suitability, bracket spacing and structural support before use. Aluminium fascia may not support a full gutter unless fixings pass through to suitable structural support or the system has been specifically designed for that use.

3. Pre-installation, Safety, Handling and Storage

Pre-installation Checks

- Review the consented drawings, project specification, roof drainage design and Dimond product literature before starting work.
- Check that trusses, rafters, fly rafters, outriggers and soffit bearers are securely fixed and are in a true plane.
- Confirm the selected fascia system before trusses are manufactured, as the set-out dimension can vary between fascia systems.
- Confirm fascia drop height, toe cut, soffit bearer position, gutter profile, downpipe locations and overflow details.
- Any departure from the approved documentation must be agreed and recorded before installation proceeds.

Site Safety

Fascia, gutter and downpipe installation involves working at height, sharp edges, swarf, manual handling and potential electrical hazards. Work must be planned and completed in accordance with the Health and Safety at Work Act 2015 and applicable WorkSafe guidance.

- Scaffolding and edge protection must be confirmed before work starts.
- Where scaffolding is required, it should extend past external and gable corners and be positioned to allow safe access to rafter ends.
- Use appropriate PPE, including cut-resistant gloves, eye protection and fall protection where required.
- Keep the work area clear of off-cuts, swarf, loose fasteners and packaging.

Measuring, Ordering and Delivery

- Measure only once sufficient framing is in place to allow accurate lengths to be taken.
- Take more than one measurement to identify discrepancies before manufacture.
- Allow for laps, stop ends, mitres, outlets, expansion joints and returns.
- Order materials with sufficient lead time for manufacture, transport and site handling.
- On delivery, inspect products for correct profile, length, colour, finish and visible damage before installation.

Transport, Unloading and Storage

- During transport, protect fascia, gutter and downpipes from rubbing, crushing and coating damage.
- When unloading by crane, use a spreader bar and protected nylon slings. Do not use chains or single slings that can damage the product.
- When unloading by hand, lift each length clear of the stack. Do not drag or slide lengths over or under each other.
- Store product dry, clear of the ground and with ventilation. Avoid moisture entrapment between stacked products.
- If products become wet during transport or storage, separate them immediately so drainage and air movement can occur.
- Wet storage damage can occur quickly where moisture is trapped between coated metal surfaces.

4. Fasteners, Rivets, Sealants, Cutting and Strippable Film

Fasteners

- Fasteners must be compatible with the rainwater product, supporting structure and exposure environment.
- Screws into timber should generally provide at least 30 mm embedment. Screws into steel should generally provide at least three threads engagement.
- Use a correctly adjusted screw gun or torque setting. Over-driven fasteners can damage washers or protective coatings.

- Impact drivers and damaged nut drivers can damage screw head coatings. Damaged fastener coatings reduce durability.
- Factory colour-matched fasteners should be used for pre-painted visible components where required.

Rivets and Sealants

- Rivets should be minimum 4 mm diameter unless a Dimond detail requires otherwise.
- Use aluminium rivets for galvanised and aluminium/zinc-coated steel products. Stainless steel rivets are not compatible with aluminium and zinc products.
- Use neutral cure silicone sealant only for steel rainwater goods.
- All sealed joints must also be mechanically fastened. Do not rely on sealant alone.
- Remove excess sealant from water paths so it does not collect dirt or restrict drainage.
- Copper and zinc joints must be riveted and soldered. Sealant is not to be used for these joints. Wash all soldering residue thoroughly.

Marking, Cutting and Swarf

- Do not use black lead or graphite pencils on aluminium/zinc or pre-painted steel products. Use a non-graphite pencil, marker or crayon.
- Cut pre-painted steel by shear, nibbler or hand shears. Friction blades and high-speed saw blades must not be used on coated rainwater goods.
- Remove swarf immediately after drilling or cutting and again at the end of each day.
- Swarf and metal debris can embed in coatings and cause staining or premature corrosion.

Strippable Film

- Strippable film is temporary handling protection only. It does not protect against corrosion, moisture or chemicals.
- Remove strippable film before prolonged sunlight exposure.
- Remove film from laps and difficult-to-access areas before final fixing.
- Collect and remove all film from the site after installation.

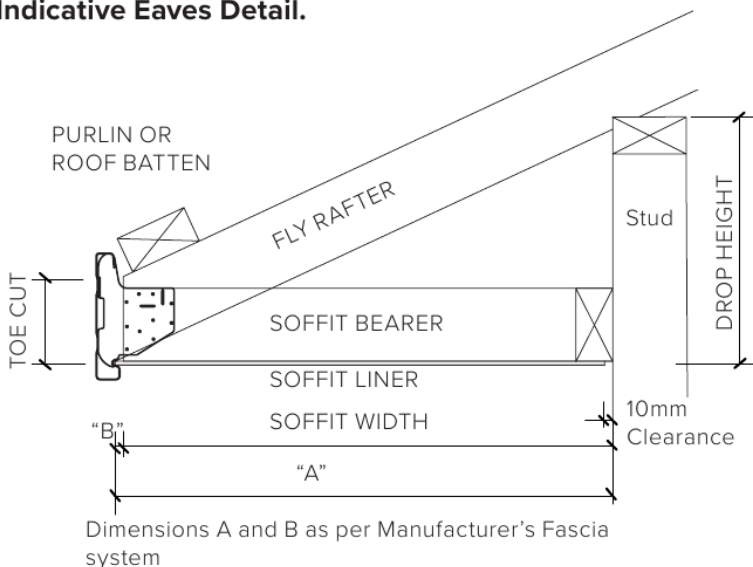
5. Dimond Metal Fascia Installation

Dimond metal fascia must be set out correctly before installation of the fascia, gutter and soffit linings. The selected fascia system should be confirmed before trusses are manufactured because fascia drop heights and toe cut dimensions may vary between systems.

Eaves and Gable Set-out

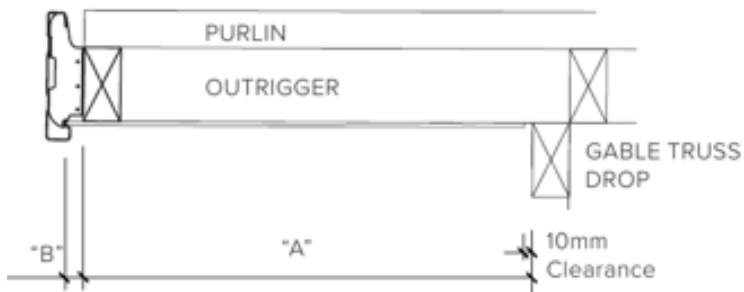
- Use the Dimond fascia set-out table for the selected fascia profile and roof type.
- Set soffit bearers to suit the selected fascia system before fascia brackets are fitted.
- Allow a 10 mm soffit clearance where shown in the Dimond detail.
- Eave brackets and gable end brackets must be the correct bracket type for the selected Dimond fascia system.

Indicative Eaves Detail.



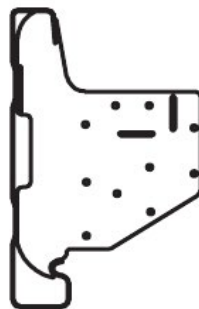
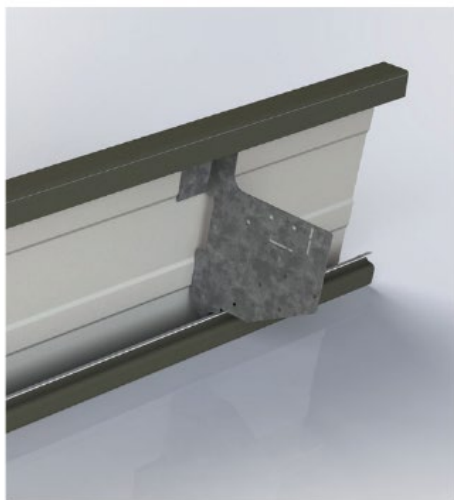
Indicative eaves set-out for fascia, soffit bearer, fly rafter and roof batten alignment.

Indicative Gable End Detail.

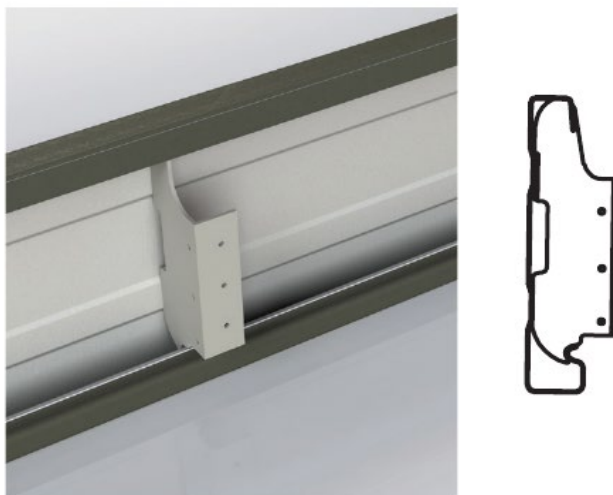


Dimensions A and B as per Manufacturer's fascia system.

Indicative gable end set-out for fascia, outrigger and gable truss drop alignment.



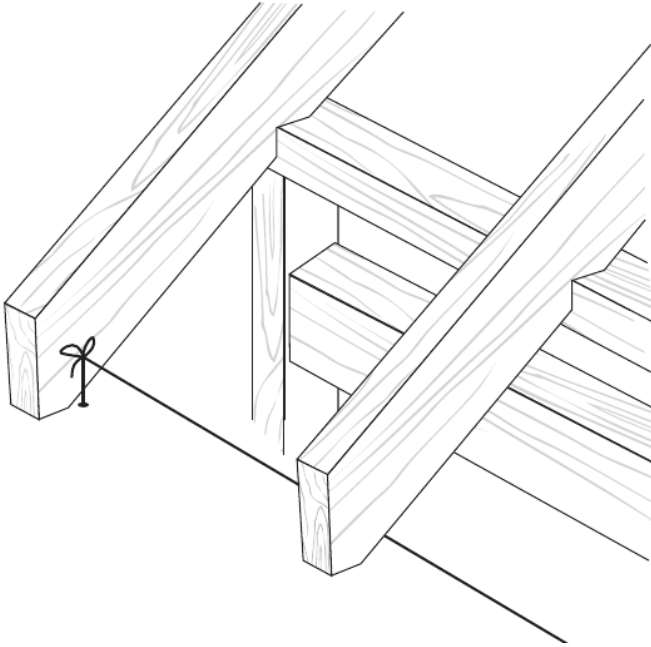
Typical eave bracket location and fascia support arrangement.



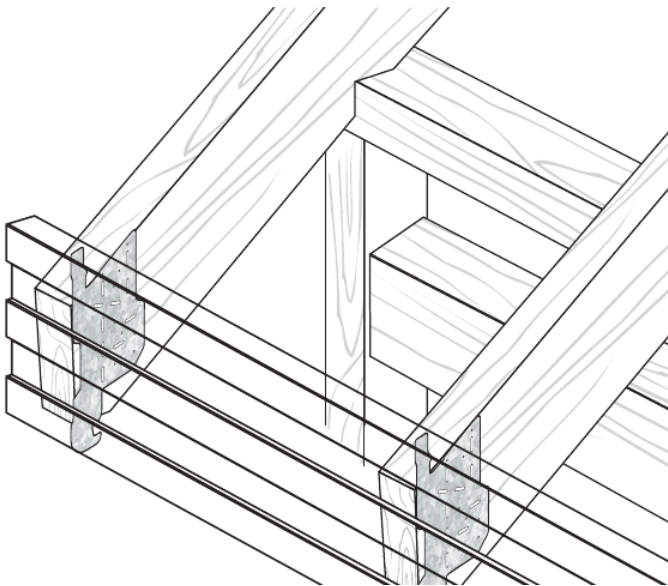
Typical gable bracket location and fascia support arrangement.

Fascia Bracket Installation

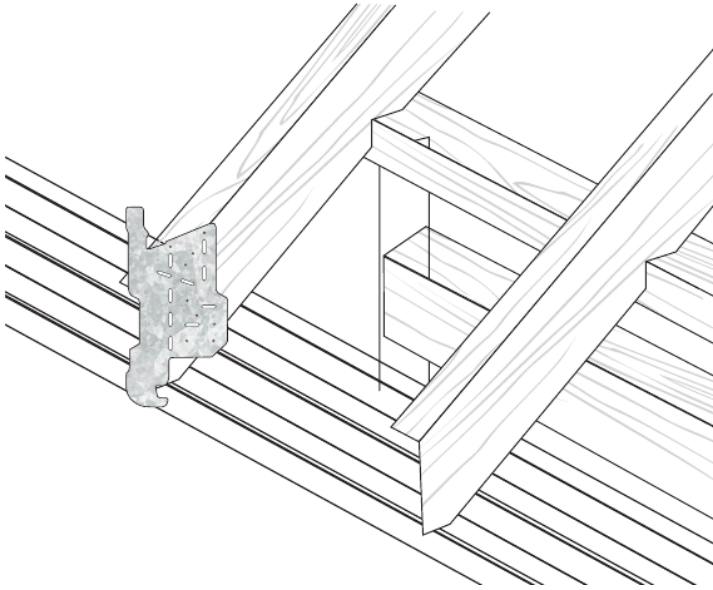
- Fix a bracket at each end of the fascia run, positioned to accept soffit linings and intersecting fascia.
- Run a string line between end brackets and check that the fascia line clears doors, windows and trims.
- Install intermediate brackets to the string line at the required centres. Bracket centres should be reduced by one third at the end of each run where required.
- Align brackets vertically using the rear edge or stiffening rib as the reference point.
- Check each fascia length is level and true before final fixing.
- Fit fascia by sliding it fully over the brackets, moving it fully in one direction, then returning it to the final position.
- Insert intermediate brackets at rafter centres where required.



Fascia bracket positioning and alignment at eaves.



Fascia slid over brackets and returned to final position.

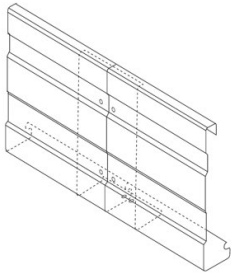


Indicative fascia installation sequence and bracket alignment.

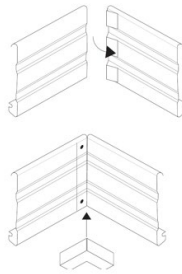
Splices, Corners, Barge and Apex Details

- For long straight runs, use the approved splice plate detail and position joints where they are least visible and best protected.
- Fascia lengths should be joined using standard roofing practice with neutral cure silicone sealant and 4 mm rivets at maximum 150 mm centres.
- External and internal corners must be completed with the correct corner detail, corner soaker or mitred arrangement for the selected fascia system.
- Barge brackets must be fixed at the required centres and aligned to the fascia system.
- Barge-to-fascia corners must be cut, notched and covered with the correct corner component where supplied.
- At roof apex points, cut and fit the fascia neatly and cover with the correct apex joiner where available.

Splice plate

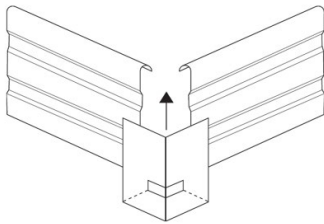


Internal corner



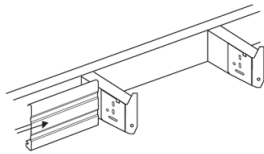
External corner

corner component which is riveted into position.

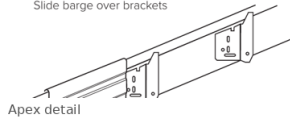


Splice plate, internal corner and external corner details.

Barge detail

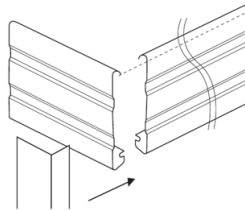


Slide barge over brackets

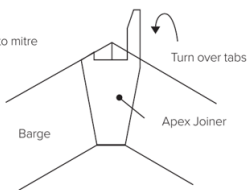


Apex detail

Barge fascia corner



nip fascia to mitre



Turn over tabs

Barge

Apex Joiner

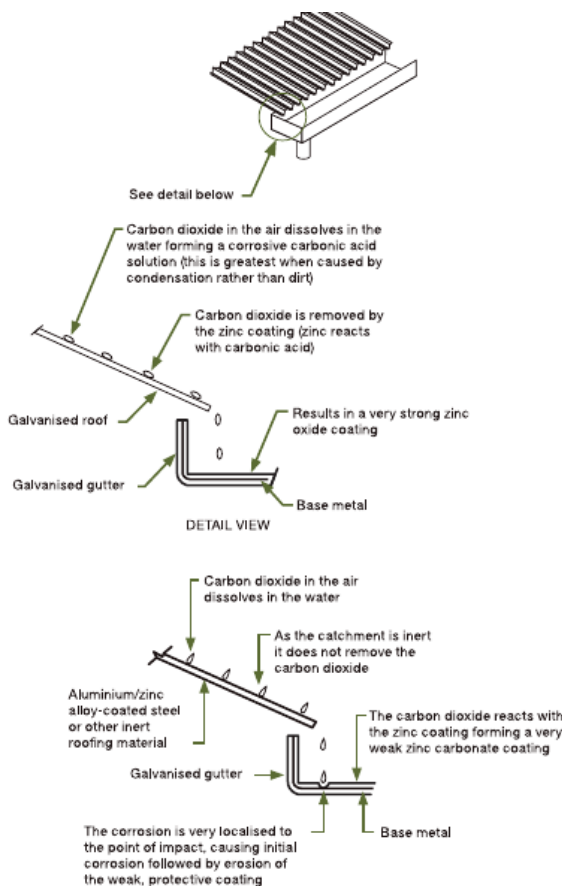
Barge, barge fascia corner and apex installation details.

6. Dimond Eaves Gutter Installation

Layout, Fall and Drainage

Gutters must be installed to a line that provides positive fall to the outlet. The levelness of the structure must not be relied on to create gutter fall. Use string lines, laser lines or other reliable set-out methods.

- Dimond recommends a minimum gutter fall of 1:500. Steeper fall may be required by the project design or installer to suit site conditions.
- Gutters must not pond. Ponding increases time of wetness, traps debris and can affect material warranty.
- Droppers must be positioned at the lowest point of the gutter run.
- Stop ends must be formed where gutter runs are terminated, except where the termination occurs at a rainhead.
- Internal brackets must be positioned under roof profile ribs, not roof pans or troughs, to keep discharge into the gutter unobstructed.



Dimond detail showing gutter lap, overflow and discharge principles.



Example of eaves gutter installation with roof cladding and wall cladding below.

Laps, Sealing and Expansion

- Where practical, gutter runs should be continuous from corner to corner within the standard length limitation.
- Dimond gutters are generally supplied in custom run lengths up to 6 metres maximum unless otherwise confirmed.
- Laps must be formed in the direction of water flow and, where possible, positioned away from doorways, access ways and lines of sight.
- All laps must be sealed and riveted. Do not allow sealant build-up on the inside lap edge.
- For gutters supported by external brackets, it is good practice to position laps so they are covered by a gutter bracket.
- Allow for thermal expansion and contraction, particularly on long runs and darker colours.

Gutter Brackets and Support

- Use the correct bracket type and spacing for the selected Dimond gutter.
- Any exposed metal foot on gutter brackets must be protected with a suitable paint system.
- Bracket fixing must be suitable for the substrate and must resist wind uplift and gutter loading.

- External brackets should be located at least 200 mm from stop ends, corners, sumps and rainwater heads unless Dimond details state otherwise.
- Gutters under 180 mm wide should generally be supported at no more than 750 mm centres. Gutters from 180 mm to 300 mm wide should generally be supported at no more than 600 mm centres unless Dimond requires closer spacing.
- Large gutter sizes above Box 125 may require fixings to resist wind uplift loads and may require specific Dimond approval where fitted to metal fascia.

Overflow and Leaf Guards

- A secondary overflow path is required to prevent water from entering the building if an outlet blocks or rainfall exceeds design capacity.
- Overflow must discharge outside the building envelope.
- Permanent gutter leaf guards are not recommended where they retain fine debris or moisture against the coated steel surface.
- Leaf guards may prevent large debris from entering outlets, but fine debris can collect on the gutter sole and increase time of wetness.
- Where a gutter protection system is used, it must not trap debris or water against coated steel and must be maintained regularly.

7. Dimond Downpipe Installation

Downpipe Location and Capacity

- Downpipe size and location must suit the roof catchment area and the flow capacity of the selected gutter.
- Droppers must be located at the lowest point of the gutter run.
- Downpipes must be mechanically fastened to the dropper and the joint sealed with neutral cure silicone.
- Exterior downpipes must discharge freely over a grated gully trap or into an oversize pipe, with the discharge point at least 50 mm above adjacent ground level.
- Metal downpipes are not designed to hold standing water. Detention, retention or water tank arrangements may require specific design.

Offsets, Gradients and Seams

- Where an eaves overhang requires an offset, confirm stud height, cladding type, soffit size and required extension lengths before ordering.
- Non-vertical downpipes must have a minimum gradient of 1 in 25.
- Where the gradient is less than 1 in 25, the downpipe cross-sectional area must be at least equal to the effective eaves gutter cross-sectional area served.
- On graded downpipes, position seams uppermost. On vertical downpipes, conceal seams from normal view where practical.
- Straight joints in steel downpipes must lap a minimum of 50 mm in the direction of flow and be sealed.

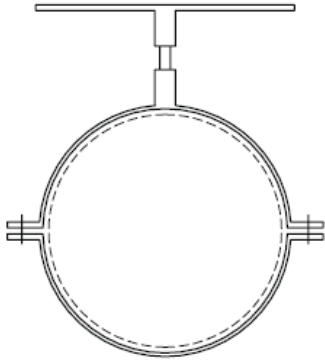
Downpipe Brackets

- Install downpipe brackets at maximum 2 m centres vertically and 1 m centres on sloping sections unless the Dimond detail requires closer spacing.
- Install brackets at least 500 mm from bends, droppers and risers unless the selected bracket detail requires otherwise.
- Use retaining brackets or stand-off clips near both ends of the downpipe and add intermediate brackets in high-traffic areas or where spans exceed 3 m.
- Downpipe brackets must be compatible with the downpipe material and must hold the pipe plumb and secure.

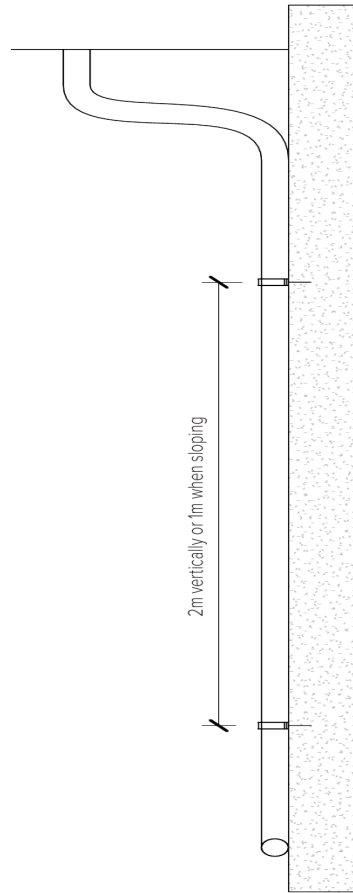
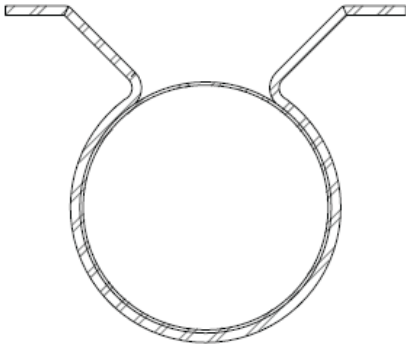
Compatibility

- Downpipes must be compatible with roof and gutter materials.
- Discharging water from inert materials onto unpainted galvanised surfaces can accelerate corrosion.
- Do not mix incompatible metals or use discharge arrangements that create continuous wetting of coated metal components.

MUNZING RING



CLIP



downpipe clips, stand-off brackets and typical bracket spacing.

8. Snow Area Installation Requirements

In snowfall regions, gutter bracket spacings must be reduced and snow straps installed to carry additional snow load and reduce the risk of damage to the gutter system. Refer to AS/NZS 1170.3 for the snow region classification and project-specific design requirements.

Region	Height above sea level	Description
N1	400 to 1200 m	North Island - south of a line from Opotiki to Turangi and across to New Plymouth
N2	200 to 900 m	South Island - west of Southern Alps from Nelson to Milford Sound
N3	150 to 900 m	South Island - Nelson east to Cheviot
N4	0 to 900 m	South Island - east of Southern Alps from Cheviot to Moeraki into Omarama
N5	0 to 900 m	South Island - south of Moeraki around to Milford Sound

Snow design note: Sites above the height limits shown require specific design and are outside the standard Dimond recommendations. Refer to AS/NZS 1170.3 for full project snow design requirements.

Gutter shape	Bracket	N1 GB	N1 SS	N2 GB	N2 SS	N3 GB	N3 SS	N4 GB	N4 SS	N5 GB	N5 SS
125 Quad	Internal	600	900	600	600	600	600	600	500	600	600
Deep Quad	Internal	600	900	600	600	600	600	600	500	600	600
Quad SI	Internal	600	900	600	600	600	600	600	500	600	600
Box 125	Internal	600	900	600	600	600	600	450	500	450	600
Box 125	External	900	900	600	600	600	600	450	500	600	600
Box 175	External	900	900	600	600	600	600	450	500	600	600
Box 200	External	600	900	600	600	600	600	450	500	600	600
150 Half Round	External	900	900	600	600	600	600	450	500	600	600
200 Half Round	External	900	900	600	600	600	600	450	500	600	600

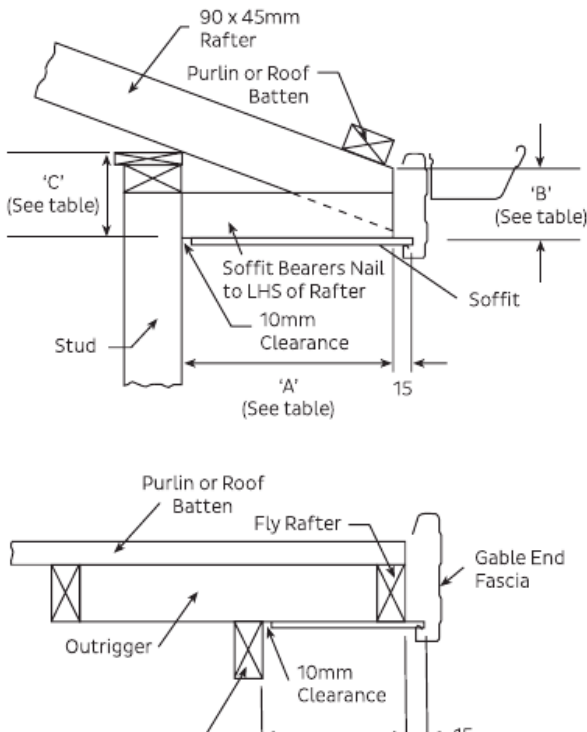
- Based on an 8 m maximum single roof run unless a project-specific design confirms otherwise.

- Situations where upper roofs allow snow to fall onto lower roofs are excluded and require specific design.
- Snow straps must be fixed to roof structure as detailed and must not rely on unsupported fascia or gutter material only.
- Internal brackets are not recommended where the site is subject to snow fall or wind above medium velocity unless specifically designed.

9. Dimond Fascia Set-out Tables

The following tables provide Dimond fascia set-out information for installer use. Confirm dimensions against the current Dimond product literature and project-specific details before manufacture or installation.

147 mm Fascia - Metal Tiles and Metal Long Run



147 mm Fascia - Metal Tiles and Metal Long Run - indicative eaves detail.

Soffit width (mm)	300	450	600	750	900
Dimension A (mm)	295	445	595	745	895

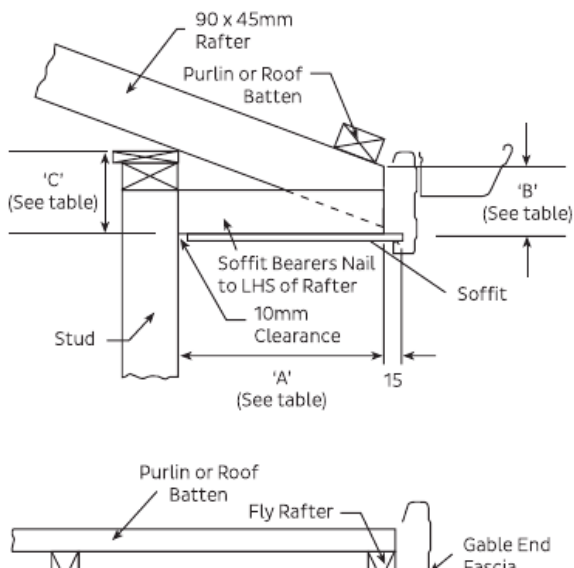
Roof pitch	C-300	C-450	C-600	C-750	C-900	B toe cut
10	60	86	113	139	165	95
12.5	72	105	138	171	205	95
15	87	127	167	208	248	96
17.5	98	145	192	240	287	96
20	113	167	222	277	331	97
22.5	129	191	253	315	377	101
25	142	212	282	352	422	105
30	170	257	344	430	516	109
35	206	311	416	521	626	116
40	247	373	499	625	751	122
45	280	420	580	730	880	129

147 mm Fascia - Concrete Tile Roofs

Soffit width (mm)	300	450	600
Dimension A (mm)	295	445	595

Roof pitch	C-300	C-450	C-600	C-750	C-900	B toe cut
17.5	72	119	166	213	261	85
20	84	141	195	250	305	88
22.5	101	163	226	288	350	91
25	117	187	257	327	397	95
30	150	237	323	410	497	100
35	187	292	397	502	607	112
40	227	353	479	605	731	124
45	275	425	575	725	875	135

165 mm PALTEC Fascia - Metal Tiles and Metal Long Run



165 mm PALTEC Fascia - Metal Tiles and Metal Long Run - indicative eaves detail.

Soffit width (mm)	300	450	600	750	900
Dimension A (mm)	295	445	595	745	895

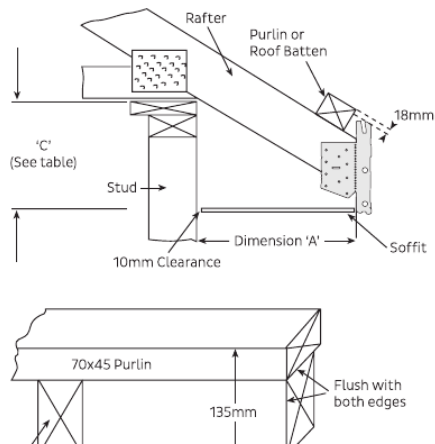
Roof pitch	C-300	C-450	C-600	C-750	C-900	B toe cut
10	73	100	127	154	184	92
12.5	87	121	155	189	223	93
15	101	142	183	224	265	96
17.5	115	163	211	259	307	94
20	129	184	239	294	349	96
22.5	145	205	265	325	385	96
25	155	225	295	365	435	100
30	189	275	361	447	533	104
35	220	325	430	535	640	112
40	253	380	507	635	762	118
45	293	442	591	740	889	125

165 mm PALTEC Fascia - Concrete Tile Roofs

Soffit width (mm)	300	450	600
Dimension A (mm)	295	445	595

Roof pitch	C-300	C-450	C-600	C-750	C-900	B toe cut
17.5	109	162	209	260	309	95
20	125	185	238	295	352	96
22.5	138	202	267	332	396	99
25	155	227	300	373	445	100
30	181	268	355	441	528	104
35	220	327	435	544	651	111
40	251	378	502	628	756	118
45	285	430	574	719	836	125

185 mm Fascia - Metal Tiles and Metal Long Run



185 mm Fascia - Metal Tiles and Metal Long Run - indicative eaves detail.

Soffit width (mm)	300	450	600
Dimension A (mm)	295	445	595

Roof pitch	C-300	C-450	C-600	C-750
10	95	123	151	179
12.5	107	140	173	206
15	120	160	200	240
17.5	133	180	227	274
20	145	200	254	309
22.5	160	222	284	346
25	173	243	313	383
27.5	188	266	344	422
30	202	289	376	463
35	233	338	443	548
40	268	394	520	646
45	306	456	606	756
50	350	529	708	887

185 mm Fascia - Concrete Tile Roofs

Soffit width (mm)	300	450	600
Dimension A (mm)	295	445	595

Roof pitch	C-300	C-450	C-600	C-750
17.5	107	154	201	248
20	118	173	227	282
22.5	133	195	257	319
25	145	215	285	355
27.5	160	238	316	394
30	173	260	347	434
35	202	307	412	517
40	235	361	487	613
45	271	421	571	721

Common Dimond Fascia Installer Notes

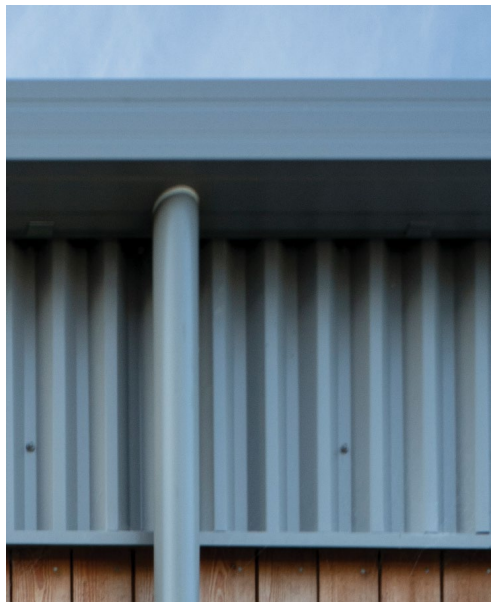
- To prevent birds entering the roof space, there should be no gap between the bottom purlin and the back face of the gutter after installation.

- Soffit bearers are required on hip corners and must be cut back as noted for the selected fascia system to allow free movement of metal fascia.
- Where loose fill insulation is used, the soffit must be blocked off at the top plate so insulation cannot contact the metal fascia.
- Zinalume coated gutters must have a minimum fall of 1:500 and must not have permanent ponding.
- Concrete tiles on barge ends are not recommended where they rest on or are in incompatible contact with metal fascia. Use isolation or timber barge where required.
- The 147 small panel fascia is not suitable on concrete tile roofs with sloping soffits. The 185 mm external fascia and gutter is recommended where concrete tile sloping soffits are used.

10. Completion, Cleaning and Maintenance

Completion

- Notify the main contractor, architect or owner when the rainwater installation is complete.
- Remove swarf, off-cuts, rivet tails, loose fasteners, strippable film, packaging and roofing-related debris.
- Leave gutters, outlets and downpipes clean, clear and free draining.
- Confirm all downpipes discharge correctly and all overflow paths are open and unobstructed.



Completed downpipe installation example with wall cladding interface.

Maintenance Requirements

- Dimond rainwater systems require regular cleaning and inspection to maintain performance.
- Keep gutters, outlets, rainheads and downpipes free from leaves, silt and debris.
- Wash areas not normally washed by rain with clean fresh water. Washing frequency will depend on environment and dirt build-up, and may be a condition of warranty.
- Do not use touch-up paint on minor scratches. Minor scratches that have not reached base metal are generally best left alone because coating systems are designed to weather naturally.
- Products with heavy scratch damage or exposed base metal should be replaced where durability or appearance is affected.
- Gutter protection systems, diverters and leaf guards require regular cleaning and must not trap water or debris against coated metal surfaces.

Rainwater Harvesting

Where rainwater is collected for potable or non-potable use, confirm project-specific rainwater harvesting requirements, first-flush systems, filtration, material compatibility and public health requirements before installation.

11. Installer Checklist

Area	Dimond installer check	Complete
Design	Roof catchment, gutter capacity, downpipe size, downpipe location and overflow confirmed.	
Product	Dimond fascia, gutter, downpipe, brackets, fasteners, sealants and accessories confirmed.	
Durability	Material and coating suit the environmental category and adjacent materials.	
Set-out	Fascia drop height, toe cut, soffit bearer position and gable details checked.	

Area	Dimond installer check	Complete
Safety	Scaffold, edge protection and PPE in place.	
Storage	Products stored dry, protected and ventilated.	
Fascia	Brackets installed true to line and fascia joined, sealed and riveted correctly.	
Gutter fall	Positive fall to outlets. Minimum 1:500. No ponding.	
Gutter laps	Minimum 50 mm lap in direction of flow; sealed and mechanically fixed.	
Overflow	Secondary overflow path open and discharging outside the building envelope.	
Downpipes	Droppers, offsets, brackets and discharge points installed correctly.	
Snow areas	Snow straps and reduced bracket centres installed where required.	
Completion	Swarf, film and debris removed; system left clean and free draining.	

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