MET-TECH TECHNICAL BULLETIN

Water Overflow & Gutter Information

RAINWATER OVERFLOW PROVISIONS

The NCC 2016 part 3.5.2 sets out the appropriate performance requirements for overflow measures of eave and valley gutters. This has recently been updated and incorporates the requirements for rainfall intensities for 1 in 20 and 1 in 100 year intervals for locations Australia wide.

It is important that the drainage system diverts water away from the building, part 3.5.2 of the NCC 2016 sets out the acceptable construction practice and gives consideration to materials, gutter selection, gutter installation, and downpipe size and installation. The code also provides information on rainfall duration intensities, gutter and downpipe selection, overflow volumes, acceptable overflow measures both continuous and dedicated.

It is important to note that a combination of overflow measures may be required in order to achieve a complying drainage system. As high fronted gutters have become very popular overflow systems must be considered in the totality of the drainage system as relying on gutter capacity alone may not be sufficient.

DESIGNERS RESPONSIBILITY

The designer may be the builder, hydraulic engineer, architect, building designer, roofing and guttering contractor or home owner. It is up to the designer to design a complete rainwater drainage system that meets the relevant requirements of the NCC / Building Code and relevant Australian Standards. Designers should take note of AS/NZS 3500.3 and AS/NZS 3500.5.

Broadly the steps a roof drainage designer takes are as follows;

- Ascertain duration rainfall intensity
- Consider the roof design, roof catchment area, slope, number and position of downpipes, length of gutter, ridge to gutter length etc.
- Calculate the overflow volume
- Select downpipes, gutters and overflow measures that are suitable given the required overflow volume.

INSTALLERS RESPONSIBILITY

The installer is responsible for installing the rainwater drainage system as per the design provided by the designer. Section 3.5.2.4 of NCC 2016 sets out minimum requirements for the installation of gutters.

HOMEOWNERS RESPONSIBILITY

A rainwater drainage system is only as good as the maintenance of the system. Blocked gutters, downpipes or other overflow measures will negatively impact on the performance of the drainage system. The homeowner is responsible for ensuring basic maintenance of the drainage system is completed at regular intervals.

MET-TECH TECHNICAL BULLETIN

Water Overflow & Gutter Information

NCC: Table 3.5.2.4 ACCEPTABLE OVERFLOW MEASURES

NOTE: extracted directly from the NCC (L/s/m = Litres per Second per Metre)

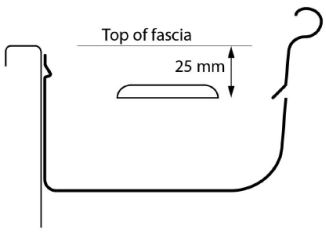
Table a: Acceptable continuous overflow measure

Front face slotted gutter with;

a) A minimum slot opening area of 1200mm2 per metre of gutter; and
b) The lower edge of the slots installed a minimum of 25mm below the fascia.

Overflow Capacity (L/s/m)

0.50

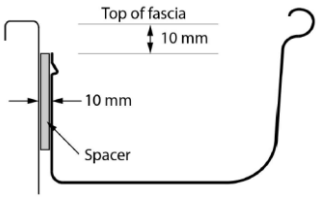


Controlled back gap with;

a) A permanent minimum 10mm spacer installed between the gutter back and the fascia; and
b) One spacer per bracket, with the spacer not more than 50mm wide; and
c) The back of the gutter installed a minimum of 10mm below the fascia.

Overflow Capacity (L/s/m)

1.50

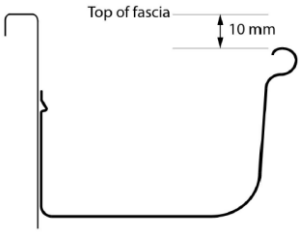


Controlled front bead height;

a) The front bread of the gutter installed a minimum of 10mm below the top of the fascia.

Overflow Capacity (L/s/m)

1.50



MET-TECH TECHNICAL BULLETIN

Water Overflow & Gutter Information

NCC: Table 3.5.2.4 ACCEPTABLE OVERFLOW MEASURES

NOTE: extracted directly from the NCC. (L/s = Litres per Second)

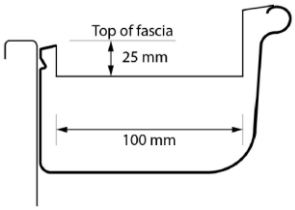
Table b: Acceptable dedicated overflow measure per downpipe

End-stop weir with;

a) A minimum clear width of 100mm; and
b) The weir edge installed a minimum 25mm below the top of the fascia.

Overflow Capacity (L/s)

0.50

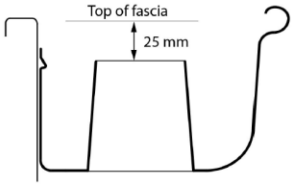


Inverted nozzle installed within 500mm of a gutter high point with;

a) A minimum nozzle size of 100mm x 50mm positioned lengthways in the gutter; and
b) The top of the nozzle installed a minimum of 25mm below the top of the fascia.

Overflow Capacity (L/s)

1.2

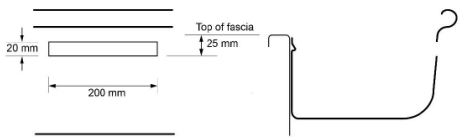


Front face weir with;

a) A minimum clear width of 200mm; and
b) a minimum clear height of 20mm; and
c) The weir edge installed a minimum of 25mm below the top of the fascia.

Overflow Capacity (L/s)

1.0

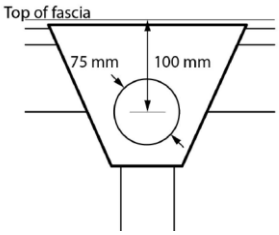


Rainhead with;

a) A 75mm diameter hole in the outward face of the rainhead; and
b) The centreline of the hole positioned 100mm below the top of the fascia

Overflow Capacity (L/s)

3.5



MET-TECH TECHNICAL BULLETIN

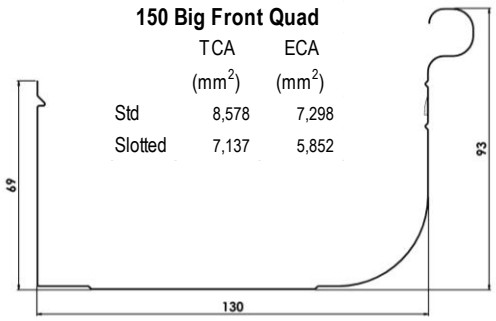
Water Overflow & Gutter Information

METROLL GUTTER PROFILES

TCA = Total Cross Sectional Area, ECS = Effective Cross Sectional Area. ECA is calculated per AS/NZS 2179:2014 and is 10mm below the overflow level.

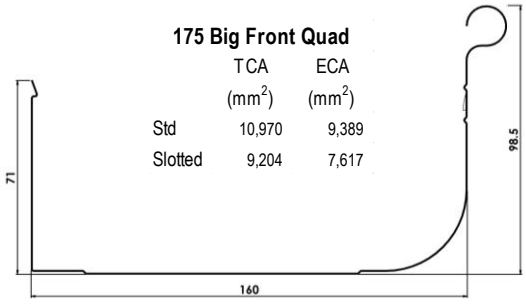
150 Big Front Quad

	TCA (mm^2)	ECA (mm^2)
Std	8,578	7,298
Slotted	7,137	5,852



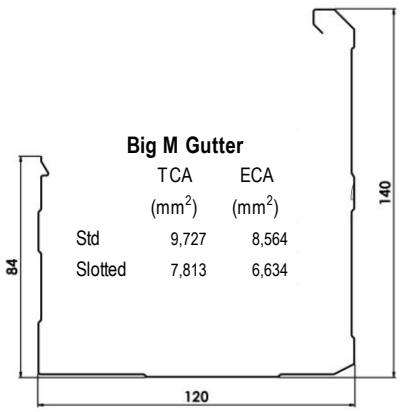
175 Big Front Quad

	TCA (mm^2)	ECA (mm^2)
Std	10,970	9,389
Slotted	9,204	7,617



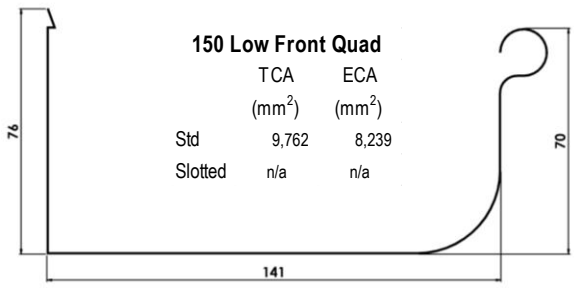
Big M Gutter

	TCA (mm^2)	ECA (mm^2)
Std	9,727	8,564
Slotted	7,813	6,634



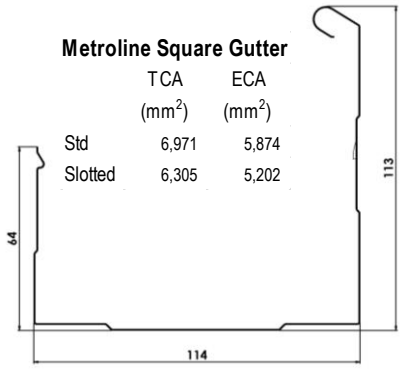
150 Low Front Quad

	TCA (mm^2)	ECA (mm^2)
Std	9,762	8,239
Slotted	n/a	n/a



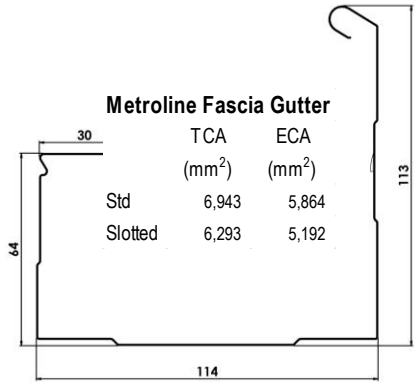
Metroline Square Gutter

	TCA (mm^2)	ECA (mm^2)
Std	6,971	5,874
Slotted	6,305	5,202



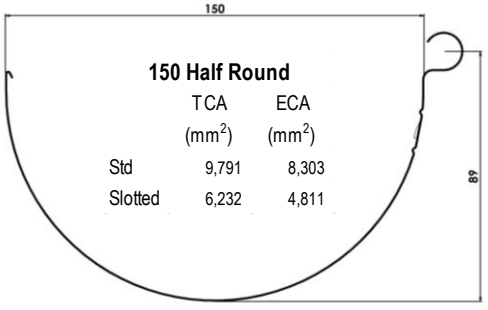
Metroline Fascia Gutter

	TCA (mm^2)	ECA (mm^2)
Std	6,943	5,864
Slotted	6,293	5,192



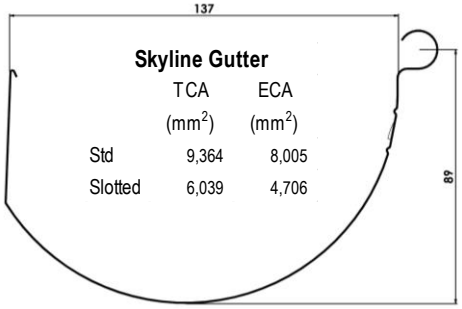
150 Half Round

	TCA (mm^2)	ECA (mm^2)
Std	9,791	8,303
Slotted	6,232	4,811



Skyline Gutter

	TCA (mm^2)	ECA (mm^2)
Std	9,364	8,005
Slotted	6,039	4,706



MET-TECH TECHNICAL BULLETIN

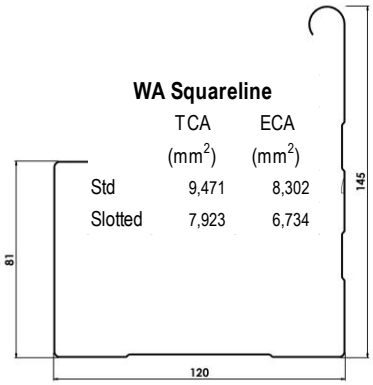
Water Overflow & Gutter Information

METROLL GUTTER PROFILES

TCA = Total Cross Sectional Area, ECS = Effective Cross Sectional Area. ECA is calculated per AS/NZS 2179:2014 and is 10mm below the overflow level.

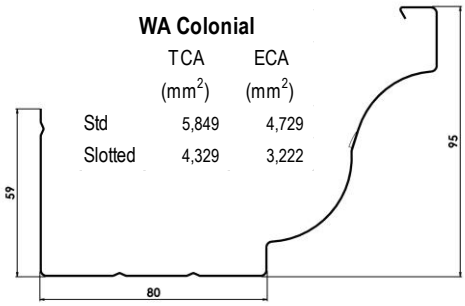
WA Squareline

	TCA (mm^2)	ECA (mm^2)
Std	9,471	8,302
Slotted	7,923	6,734



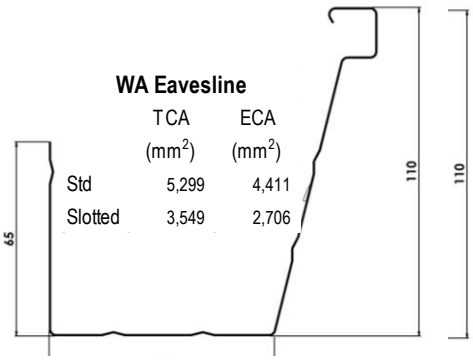
WA Colonial

	TCA (mm^2)	ECA (mm^2)
Std	5,849	4,729
Slotted	4,329	3,222



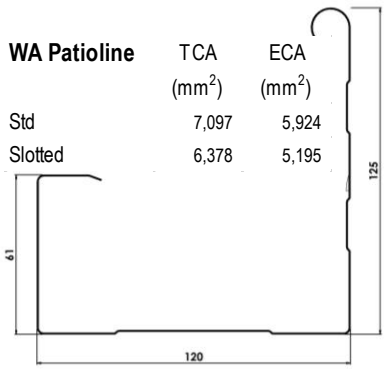
WA Eavesline

	TCA (mm^2)	ECA (mm^2)
Std	5,299	4,411
Slotted	3,549	2,706



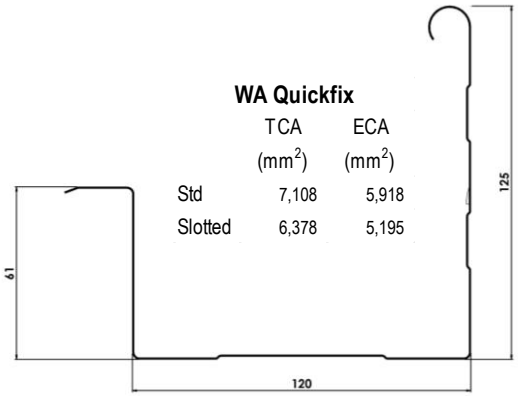
WA Patioline

	TCA (mm^2)	ECA (mm^2)
Std	7,097	5,924
Slotted	6,378	5,195



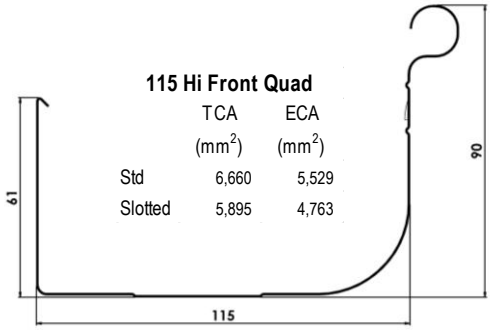
WA Quickfix

	TCA (mm^2)	ECA (mm^2)
Std	7,108	5,918
Slotted	6,378	5,195



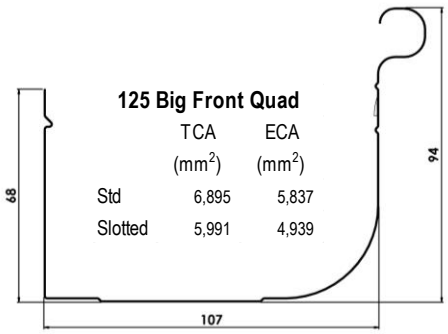
115 Hi Front Quad

	TCA (mm^2)	ECA (mm^2)
Std	6,660	5,529
Slotted	5,895	4,763



125 Big Front Quad

	TCA (mm^2)	ECA (mm^2)
Std	6,895	5,837
Slotted	5,991	4,939



175 Low Front Quad

	TCA (mm^2)	ECA (mm^2)
Std	17,291	15,430
Slotted	n/a	n/a