Table b. Overflow volume for dedicated measure (L/s)					
Design 5 minute duration rainfall intensity (mm/h) (from Table 3.5.2.1)	Roof Catchment Area (m^2)				
	30	40	50	60	70
400	3.3	4.4	5.6	6.7	7.8

Table 3.5.2.4 ACCEPTABLE OVERFLOW MEASURES

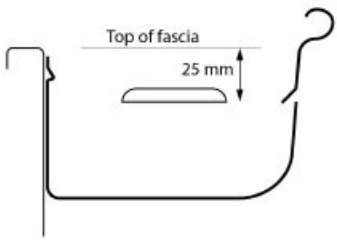
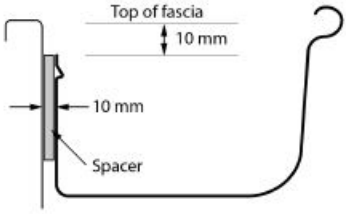
Table a. Acceptable continuous overflow measure		
Description	Overflow Capacity (L/s/m)	Construction
Front face slotted gutter with— (a) a minimum slot opening area of 1200 mm^2 per metre of gutter; and (b) the lower edge of the slots installed a minimum of 25 mm below the top of the fascia.	0.5	
Controlled back gap with— (a) a permanent minimum 10 mm spacer installed between the gutter back and the fascia; and (b) one spacer per bracket, with the spacer not more than 50 mm wide; and (c) the back of the gutter installed a minimum of 10 mm below the top of the fascia.	1.5	

Table 3.5.2.4 ACCEPTABLE OVERFLOW MEASURES — continued

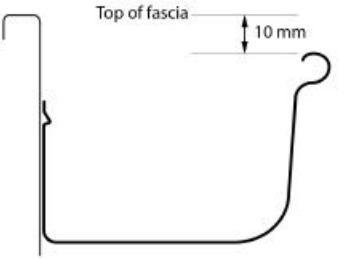
Table a. Acceptable continuous overflow measure		
Description	**Overflow Capacity (L/s/m)**	**Construction**
Controlled front bead height with the front bead of the gutter installed a minimum of 10 mm below the top of the fascia.	1.5	

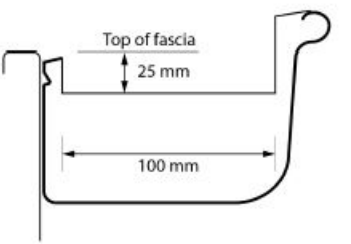
Table b. Acceptable dedicated overflow measure per downpipe		
Description	**Overflow Capacity (L/s)**	**Construction**
End-stop weir[Note 1] with— (a) a minimum clear width of 100 mm; and (b) the weir edge installed a minimum 25 mm below the top of the fascia.	0.5	

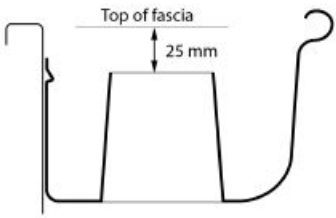
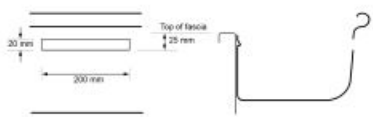
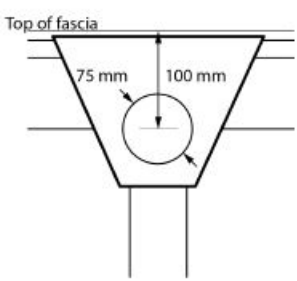
Table b. Acceptable dedicated overflow measure per downpipe		
Description	**Overflow Capacity (L/s)**	**Construction**
Inverted nozzle installed within 500 mm of a gutter high point with— (a) a minimum nozzle size of 100 mm × 50 mm positioned lengthways in the gutter; and (b) the top of the nozzle installed a minimum of 25 mm below the top of the fascia.	1.2	
Front face weir with— (a) a minimum clear width of 200 mm; and (b) a minimum clear height of 20 mm; and (c) the weir edge installed a minimum of 25 mm below the top of the fascia.	1.0	
Rainhead with— (a) a 75 mm diameter hole in the outward face of the rainhead; and (b) the centreline of the hole positioned 100 mm below the top of the fascia.	3.5	
Notes:		

Table b. Acceptable dedicated overflow measure per downpipe		
Description	**Overflow Capacity (L/s)**	**Construction**
1. An end-stop weir is not suitable where the end-stop abuts a wall. 2. The rainhead should be detailed to avoid nuisance discharge from the overflow at rainfall intensities below the normal design level.		

Explanatory information:

Stormwater drainage systems specified in the *Housing Provisions* are not designed to remove all water to an appropriate outfall during exceptionally heavy rain, particularly in tropical areas. Specifically, eaves gutter systems are designed to remove water arising from rainfall events with an average recurrence interval of 20 years provided they are not blocked. Accordingly, it is necessary to design and install the system to incorporate overflow measures so that when overflowing occurs, during a rainfall event with an average recurrence interval of up to 100 years, any water is directed away in a manner which ensures it does not pond against, enter or damage the building, even if the stormwater drainage system is blocked.

Insufficient and poorly located downpipes are a frequent cause of poor roof drainage system performance. The installation of downpipes, especially near valley gutters, is designed to ensure rainwater from areas on the roof that have concentrated water flows is adequately removed.

Particular consideration needs to be given to box gutters, valley gutters etc. located above the internal areas of a building.

There are several options available to designers using the requirements of the *Housing Provisions*. The designer will need to choose an overflow system that will cope with the rainfall intensity for the particular location. Consideration needs to be given to the total capacity of overflow measures on lower level roofs where overflow measures adopted for a higher roof catchment will result in overflow to a lower one. Overflow discharge onto lower roofs may also require consideration of sarking, flashing and other weatherproofing precautions to the lower roof area.

The acceptable overflow measures in Table 3.5.2.3 were calculated using the following formulas:

For continuous slots or rainhead

$$Q = C_d A \sqrt{2gh}$$

Where—

- A = Area (m^2)
- C_d = Discharge coefficient = 0.61
- g = Gravity = 9.81 m/s^2
- h = Effective head (m)
- Q = Flow rate (m^3/s)

For front face weir, end stop weir, inverted nozzle, front bead or controlled gap

$$Q = 0.67\, C_d\, b \sqrt{2g}\, h^{1.5}$$

Where—

- b = Width (m)
- C_d = Discharge coefficient = 0.63
- g = Gravity = 9.81 m/s^2
- h = Effective head (m)
- Q = Flow rate (m^3/s)