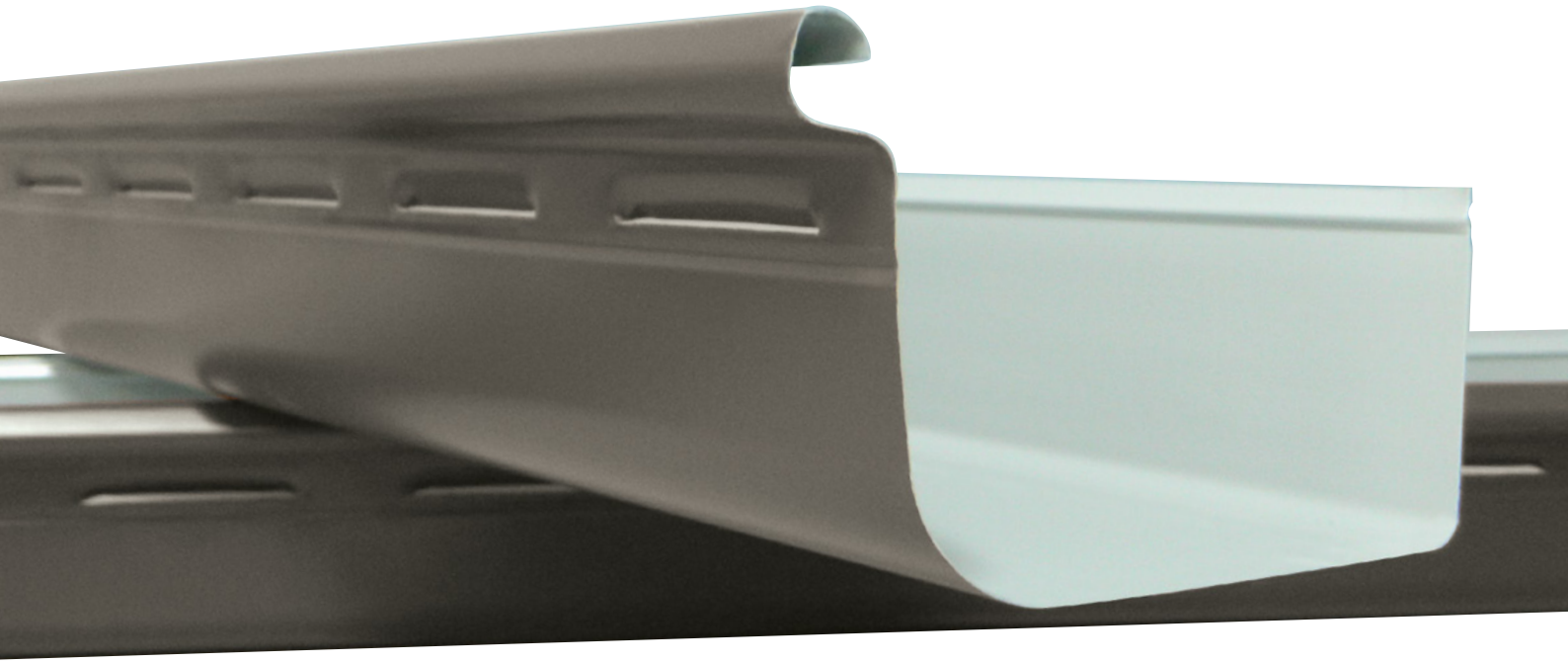
QUAD 115 HI-FRONT XL SLOTTED GUTTER

FOR OVERFLOW AT THE FRONT OF THE LYSAGHT® QUAD GUTTER HI-FRONT XL SLOTTED GUTTER INSTALLED ONTO LYSAGHT NOVALINE® FASCIA



INSPIRATION TO BUILD BETTER

LYSAGHT® QUAD 115 HI-FRONT XL SLOTTED GUTTER

1.0 INTRODUCTION & GENERAL NOTES

The LYSAGHT® QUAD 115 Hi-Front XL Slotted Gutter installs onto LYSAGHT NOVALINE® Fascia and assists in managing water overflow at roof eaves.

Testing and modelling undertaken by LYSAGHT® demonstrate that the front-face slots of the gutter will provide sufficient overflow capacity in most domestic residences in Australia, even when the slots are used as the only overflow device.

1.1 FEATURES AND BENEFITS

a. The LYSAGHT® QUAD 115 Hi-Front XL Slotted Gutter design is based on there being minimal change to the current industry accepted installation practices and minimal change to the aesthetic acceptability of the roof drainage system installation.

b. In most domestic residences in Australia, the LYSAGHT® QUAD 115 Hi-Front XL Slotted Gutter does not require a nominal gap between the LYSAGHT® QUAD 115 Hi-Front XL Slotted Gutter and the LYSAGHT NOVALINE® Fascia.

1.2 OVERFLOW COMPLIANCE WITH THE NCC 2022

The compliance requirements for roof drainage systems including residential eaves gutter systems may be regulated as building work or plumbing work, depending on the local Building Authority. Where roof drainage systems are regulated as building work, NCC Volume Two or ABCB Housing Provisions Standard applies, and where regulated as plumbing work, NCC Volume Three applies. In practice, the eaves gutter requirements are similar between these references.

Per Section A2G2 of NCC Volume Three - Plumbing Code of Australia, a Performance Solution is achieved by demonstrating that the solution is at least equivalent to the Deemed-to-Satisfy Provisions of the NCC. The ABCB Housing Provisions Standard contains Deemed-to-Satisfy Provisions that are considered to be acceptable forms of construction that meet the requirements for complying with Parts H1 to H8 of NCC Volume Two - Building Code of Australia.

Per Section 7.4.6(1) of the ABCB Housing Provisions Standard, a slotted gutter with a slot opening area of 1200 mm^2 per metre of the gutter, when installed with the lower edge of the slot being 25mm below the top of the fascia, is deemed to satisfy an overflow capacity of 0.5 L/s/m length of gutter for design purposes. LYSAGHT® QUAD 115 HI-FRONT XL SLOTTED GUTTER provides a slot opening area of 2055 mm^2 per metre of the gutter, which far exceeds this compliance criterion.

2.0 OVERFLOW CAPACITY

LYSAGHT® QUAD 115 HI-FRONT XL SLOTTED GUTTER's slots are formed by the material being slit horizontally and the upper surface of the slot protruding inwardly into the gutter. The gutter slots are nominally 65mm long and spaced at 90mm centres. Each slot has a nominal clear opening area of 185 mm^2. This results in a total nominal slot opening area of 2055 mm^2 per metre length of the gutter.

The LYSAGHT® QUAD 115 Hi-Front XL Slotted Gutter has the following overflow capacities based on testing. These overflow capacities may be adopted for a performance solution per Section A2G2 of NCC Volume Three - Plumbing Code of Australia:

- The slots will provide an overflow capacity equivalent to 0.70L/s/m length of the gutter when the gutter is installed at the highest practical level, i.e. at Barb 6 of the spring clip and a gutter slope of 1:500 or steeper (refer to Figure 2 for spring clip and barb numbers).
- The slots will provide an overflow capacity equivalent to 0.85L/s/m length of the gutter when the gutter is installed at a lower level, at Barb 5 of the spring clip, and a gutter slope of 1:500 or steeper (for shallower slopes use an overflow capacity of 0.70L/s/m length of the gutter).
- The slots will provide an overflow capacity equivalent to 0.97L/s/m length of the gutter when the gutter is installed at a lower level, at Barb 4 of the spring clip, and a gutter slope of 1:500 or steeper (for shallower slopes use an overflow capacity of 0.85L/s/m length of the gutter).

FIGURE 1:

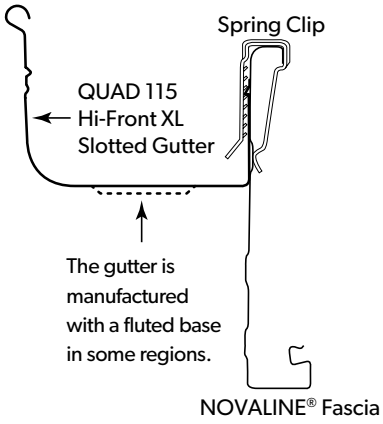
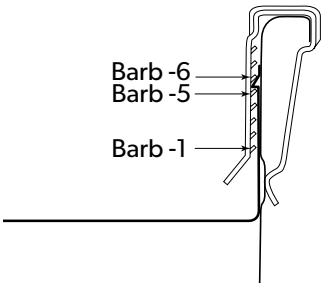
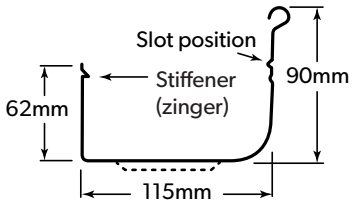


FIGURE 2:



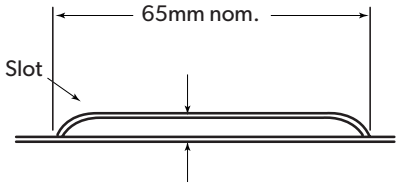
The above image shows the gutter set at Barb 5.

FIGURE 3:



The gutter is manufactured with a fluted base in some regions.

FIGURE 4:



The above image shows the gutter's large slot opening giving a nominal cross-sectional area of 185mm^2.

3.0 ROOF DRAINAGE SYSTEM DESIGN

Roof drainage systems should be designed and detailed by a suitably qualified trades professional in accordance with the National Construction Code (NCC), Australian Standards and local regulatory requirements. Particular reference should be made to the correct selection of gutter, quantity and placement of the downpipes and the provision of appropriate overflow device(s).

3.1 THE LYSAGHT SOLUTION OF DOMESTIC GUTTER OVERFLOW

Where high-fronted gutters are installed, the NCC (and reference standard AS/NZS 3500.3) requires that provision be made to avoid any overflow back into the roof or building structure.

The new LYSAGHT® QUAD 115 Hi-Front XL Slotted Gutter, when installed as per the requirements set out in this publication, shall be utilised as a performance solution in accordance with the NCC to meet overflow "performance requirements" for eaves gutters to prevent roof rainwater entry into a building.

The use of the LYSAGHT® QUAD 115 Hi-Front XL Slotted Gutter as a performance solution to eaves gutter overflow provisions as set out in the Plumbing Code of Australia (PCA) has only been tested by Lysaght when installed as a proprietary system with LYSAGHT NOVALINE® Fascia. Installation of other products is untested by Lysaght.

Lysaght has confirmed that the LYSAGHT® QUAD 115 Hi-Front XL Slotted Gutter, when installed in conjunction with LYSAGHT NOVALINE® Fascia, will meet the performance requirements relating to overflow provisions as set out in the PCA. Lysaght has not sought any confirmation relating to the installation of other gutter or fascia products whatsoever. Lysaght does not warrant or guarantee compliance with the PCA and/or effective hydraulic performance when installed with any product other than LYSAGHT NOVALINE® Fascia.

For further information please contact your local service centre.

3.2 OVERFLOW VOLUMES

It is the designer's responsibility to determine the overflow volumes on a roof drainage system. Table 3.2-1 is based on the NCC 2019 (Table 7.4.4a of the ABCB Housing Provisions Standard (2022)) and provides a guide to the overflow volumes for differing roof lengths and rainfall intensities. Simply select the appropriate rainfall intensity and roof length for the roof and then extract the overflow volume. Then select the appropriate setting of the gutter.

TABLE 3.2-1:

OVERFLOW VOLUME FOR CONTINUOUS MEASURES (L/S/M LENGTH OF GUTTER)

Rainfall Intensity mm/hr	**Length of roof - L m**							
1:100 years	**2.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**
100	0.06	0.11	0.17	0.22	0.28	0.33	0.39	0.44
125	0.07	0.14	0.21	0.28	0.35	0.42	0.49	0.56
150	0.08	0.17	0.25	0.33	0.42	0.50	0.58	0.67
175	0.10	0.19	0.29	0.39	0.49	0.58	0.68	0.78
200	0.11	0.22	0.33	0.44	0.56	0.67	0.78	0.89
225	0.13	0.25	0.38	0.50	0.63	0.75	0.88	1.00
250	0.14	0.28	0.42	0.56	0.69	0.83	0.97	1.11
275	0.15	0.31	0.46	0.61	0.76	0.92	1.07	1.22
300	0.17	0.33	0.50	0.67	0.83	1.00	1.17	1.33
325	0.18	0.36	0.54	0.72	0.90	1.08	1.26	1.44
350	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56
375	0.21	0.42	0.63	0.83	1.04	1.25	1.46	1.67
400	0.22	0.44	0.67	0.89	1.11	1.33	1.56	1.78

Notes:

1. Based on Table 7.4.4a of the ABCB Housing Provisions Standard (2022).
2. The rainfall intensities is for a 5min storm duration for an Average Recurrence Interval of 1:100 years.
3. For the Roof Length values no allowance has been given for drainage from upper roof or wall surfaces, and no allowance has been given to roof penetrations, dormers, valleys and the like.
4. A guide to the rainfall intensity for your area is provided in the regional Rainwater Solutions brochure, which is available at www.lysaght.com.

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AUSTRALIAN STANDARDS

Australian Standard	Definition
AS/NZS 3500.3:2021	Plumbing and Drainage-Part 3: Storm water drainage

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FOR DETAILED PRODUCT INFORMATION, MANUALS AND PROJECT CASE STUDIES VISIT:

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