

FLEXLOK-AL® PROFILE DIMENSIONS

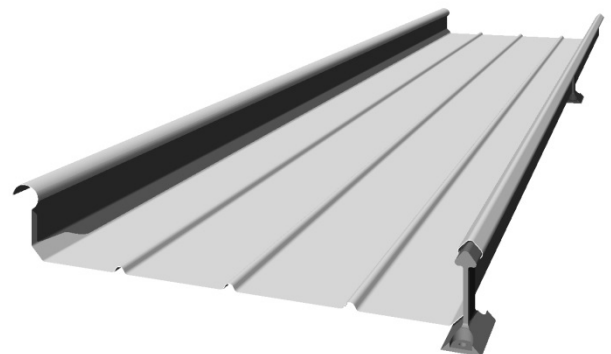
Product Description and Features

Flexlok- AL® is a concealed fix, standing seam roofing system with an innovative architectural appearance. Its flexible design combines with 5251 or 5052 H38 Marine grade aluminium to provide outstanding watertightness, durability and stunning aesthetics. Flexlok- AL® accommodates the most complex roof configurations including curved surfaces allowing smooth transitions between roof planes and between the roof and other building elements. A variety of end panels and ridge covers cap off the most complex roof design. The unique tapering can be done from our standard 400mm profile and reduce to 220mm. On special designs we can expand this to create a 600mm cover width sheet that will taper down to 220mm. This allows curved buildings to be accommodated with ease.

Features include:

- A concealed fixing system that requires no piercing fasteners and helps provide watertightness and superior resistance to wind uplift and harsh corrosive environments
- It is available in tapered and curved shapes to meet the most challenging design conditions providing unparalleled design freedom
- The ability to rollform on-site to allow for long continuous roof lines, eliminating concerns regarding transportability of sheet lengths
- The innovative clip system provides superior resistance to wind uplift whilst readily allowing for thermal expansion of long roof runs
- Wide pans with distinctive ribs not only provide for a dynamic aesthetic but allow for roof pitches as low as 1.5 degrees with excellent water carrying capacity

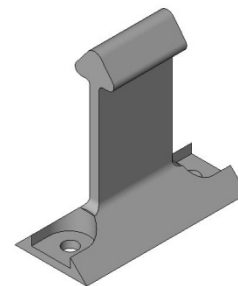
Thickness range (BMT): 0.90mm & 1.2mm
 Length Range: 2.0m to 30.0m (factory rollformed).
 Length when rollforming on site only restricted to site access and crane limitations
 Pan Cross Section area: 64,485mm²/metre sheet width
 Tolerances: Length +0mm, -15mm
 Width +0mm, -3mm
 Finishes: Mill, Stucco Embossed, Painted



Fixing Towers

Flexlok-AL® fixing towers are cast from CA401-F1 structural grade aluminium. The shape of the halter has been carefully designed to maximise strength, in both outward (wind uplift) and inward (snow) load forces.

The head of the fixing tower accurately matches the Flexlok-AL® sheeting, to ensure the sheets slide freely during thermal movement.



Colour Availability

The following Permalite® standard polyester paint colours are applied to the coiled sheet by reverse roller coating and heat curing on BlueScope paint lines employing the latest painting technology.

| | | | | | | |
|--|---|---|---|--|---|---|
|  |  |  |  |  |  |  |
| Enduro Green | Glacier White | Moonshadow | Sahara | Gull Grey | Slate Grey | Obelisk Grey |

Other colours/fluorocarbon paints are available upon request and subject to MOQ's.

Design

Permalite® Flexlok-AL® limit state wind pressure capacities are based on data in accordance with AS 1562.1:1992 Design and installation of sheet roof and wall cladding: Metal, and AS 4040.1:1992 Methods of testing sheet roof and wall cladding – Resistance to concentrated loads. The wind loadings used in conjunction with these tables are to be determined in accordance with AS/NZS 1170.2:2002 Structural design actions – Wind actions.

These tables and all installation data/details can be found in the Permalite Aluminium Roofing Solutions Flexlok-AL® manual, available for download at www.permalite.com.au.

Profile Properties

| Thickness (mm) | kg/m ² Cover width (Mill finish) | kg/m Length (Mill finish) | m ² /tonne (Mill finish) | Section Modulus about principal axis (x10 ³ mm ³) | | 2nd Moment of area about principal axis (x10 ³ mm ⁴) | |
|----------------|---|---------------------------|-------------------------------------|--|----------------|---|----------------|
| | | | | Z _x | Z _y | I _x | I _y |
| 0.90 | 3.567 | 1.427 | 280 | 5.206 | 50.56 | 280 | 10990 |
| 1.20 | 4.756 | 1.902 | 210 | 6.942 | 67.41 | 373 | 14660 |

Material Specification

Permalite® Flexlok-AL® is produced from marine grade aluminium 5251 and 5052 H38 temper to AS/NZS 1734:1997 Aluminium and aluminium alloys – Flat sheet, coiled sheet and plate.

Permalite® Flexlok-AL® fixing towers are cast from CA401-F1 structural grade aluminium to AS 1874:2000 Aluminium and aluminium alloys – Ingots and castings.

Chemical Composition of 5251, 5052 & CA401 (% max except where range is given)

| Alloy | Si | Fe | Cu | Mn | Mg | Cr | Ni | Zn | Ti | Others | |
|-------|-----------|------|------|-----------|-----------|-----------|------|------|------|--------|-------|
| | | | | | | | | | | Each | Total |
| 5251 | 0.40 | 0.50 | 0.15 | 0.10-0.50 | 1.70-2.40 | 0.15 | 0.00 | 0.15 | 0.15 | 0.05 | 0.15 |
| 5052 | 0.25 | 0.40 | 0.10 | 0.10 | 2.20-2.80 | 0.15-0.35 | 0.00 | 0.10 | 0.15 | 0.05 | 0.15 |
| CA401 | 12.0-13.0 | 0.40 | 0.10 | 0.10 | 0.05 | 0.00 | 0.05 | 0.10 | 0.20 | 0.05 | 0.15 |

Characteristics of 5251, 5052 & CA401

| Alloy | Corrosion Resistance | Anodising | Formability | Machinability | Weldability | Brazeability |
|-----------|----------------------|-----------|-------------|---------------|-------------|--------------|
| 5251/5052 | Excellent | *Fair | Very Good | Fair | Very Good | Poor |
| CA401 | Excellent | *Fair | N/A | Poor | Very Good | N/A |

* Finish cannot be guaranteed to meet the requirements of AS 1231:2000 Aluminium and Aluminium Alloys – Anodised Coatings for Architectural Applications

Alloy Mechanical Properties

With alloys 5251 and 5052, the following properties are typical of mill finish, unpainted sheet.

| Alloy | 5251 | 5052 | CA401 |
|---------------------------------|------|------|-------|
| Temper | H38 | H38 | F1 |
| Minimum Yield Strength (Mpa) | 225 | 220 | - |
| Ultimate Tensile Strength (MPa) | 260 | 270 | - |
| Tensile Strength (Mpa min) | - | - | 190 |
| Elongation | 4% | 4% | 7% |

Thermal Properties

Coefficient of thermal expansion:

5251/5052: 23.9×10^{-6} per °C (approximately 1.17mm/m over 50°C temperature change).

CA401: 20.8×10^{-6} per °C