

# PROFILES



With the innovative  
DuraGal<sup>Ultra</sup> Coating

High Strength Steel and Now More Durable.

**DuraGal** **Ultra**



**AustubeMills**  
SHAPING POSSIBILITIES



IMPROVED CORROSION RESISTANCE • GREATER STRENGTH • CONVENIENCE

## PROFILES WITH THE DURAGAL<sup>ULTRA</sup> ADVANTAGE

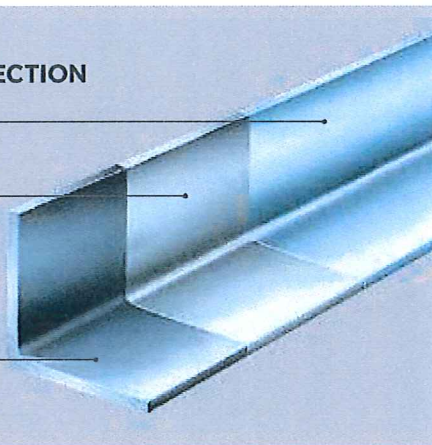
Profiles are high strength in-line open sections coated with the innovative DuraGal<sup>Ultra</sup> hot-dip zinc aluminium coating, providing a smooth surface with a uniform coating thickness, purpose designed to perform in general, and construction applications.

### DURAGAL<sup>ULTRA</sup> SURFACE PROTECTION

Surface Conversion Coating  
to inhibit white rust

In-line hot-dip zinc aluminium  
coating — 75g/m<sup>2</sup> minimum  
average coating mass  
determined in accordance  
with AS/NZS 4791:2006\*

Shot Blasted and Chemically  
Cleaned Bright Metal Surface



### NOTE

\* Zinc aluminium coating classifications are not currently referenced in AS/NZS 4791, hot-dip galvanized (zinc) coatings on ferrous open sections applied by an in-line process.

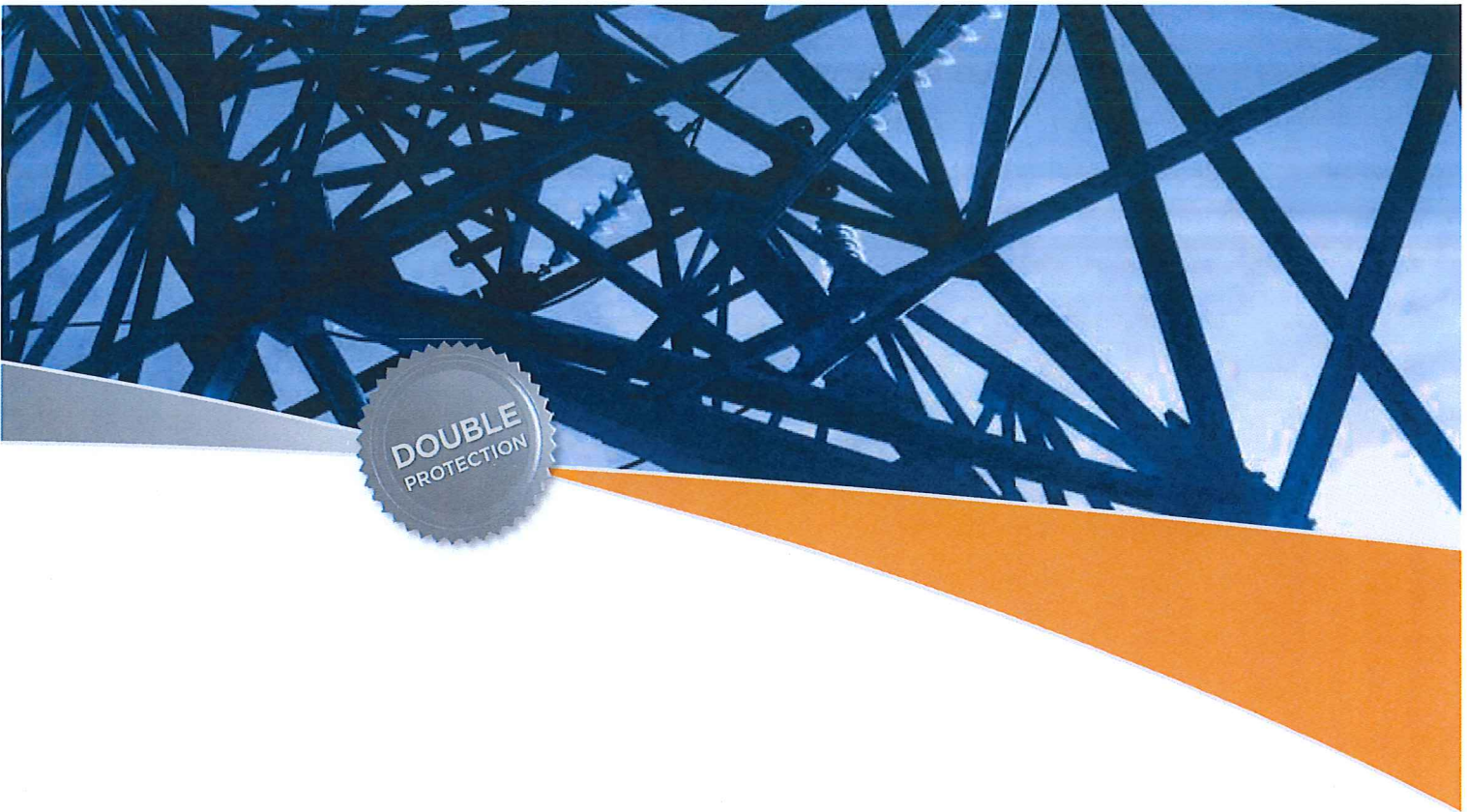
You determine the design and specification,  
and let us provide a consistent coating!

### DURAGAL<sup>ULTRA</sup> TECHNOLOGY

The DuraGal<sup>Ultra</sup> coating technology applies a hot-dip zinc aluminium coating using our innovative application process pioneered in Australia by Australian Tube Mills. Our specialised application process and quality control procedures detailed in our Technical Specifications document, TS100 ensures that DuraGal<sup>Ultra</sup> coated profiles continue to be manufactured and inspected to the standards required by AS/NZS 4791:2006 — hot-dip galvanized (zinc) coatings on ferrous open sections, applied by an in-line process.

For further information or to review our manufacturing standard TS100 please visit [www.austubemills.com](http://www.austubemills.com)





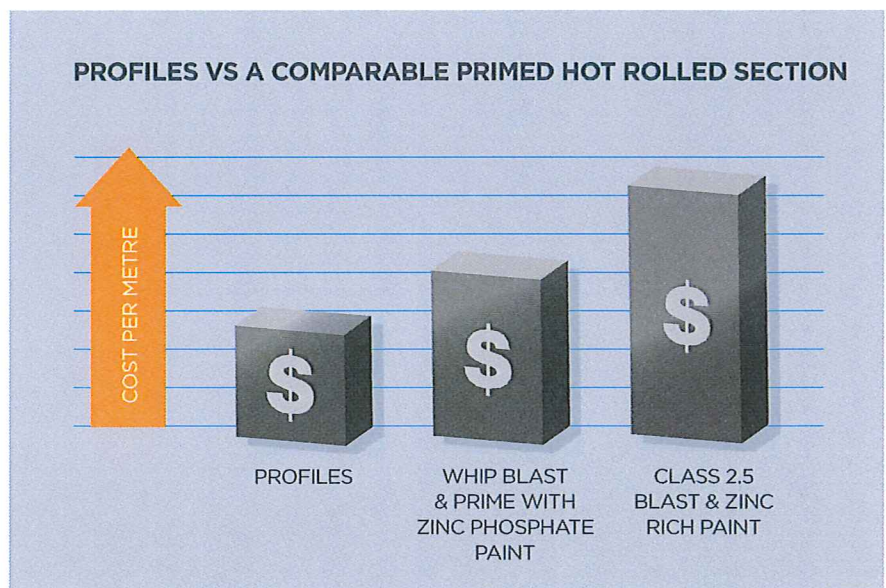
**DOUBLE  
PROTECTION**

## **COST EFFECTIVE**

Profiles with the new DuraGal<sup>Ultra</sup> coating are a cost-effective way to work with steel. As demonstrated in the graph, when it comes to achieving comparable levels of strength and surface protection, experience has shown that it can be more economical to simply switch to profile sections, delivering greater value for money to help your business grow.

## **IDENTIFYING OPPORTUNITIES**

Profiles are versatile and can be adapted into all industries. Whether it be in mining, house frames, materials handling, racking (particularly in cold rooms) access walkways, truck & trailer bodies or transmission towers. Conversion to profiles can save you time and money.



## **KEY BENEFITS OF USING PROFILES**

1. Quality improvement — prepared surface and corrosion resistance can alleviate the need for blasting and priming
2. Lighter — average 15% savings in weight — less freight costs
3. Improved business management — no outsourcing for coating preparation means less material management
4. Reduced inventory — no outsourcing means less stock in the system = space and cost savings
5. Kinder to the environment — no wire brushing or priming pollutants
6. Reduced process time — clean and better to handle
7. Availability — stocked throughout the extensive Australian Tube Mills distribution network
8. Lower total cost potential





IMPROVED CORROSION RESISTANCE • GREATER STRENGTH • CONVENIENCE

# THE PERFECT FINISHING TOUCH

## SURFACE PROTECTION

Australian Tube Mills profiles coated with DuraGal<sup>Ultra</sup> now offer double the barrier against corrosion but still demonstrates the same processing capability end-users have grown to trust. DuraGal<sup>Ultra</sup> zinc aluminium coating applied in-line has an equivalent durability of a 225g/m<sup>2</sup> zinc coating, in moderate and severe environments.

Our profiles surface finish is smooth, clean, free from oil, mill scale, rust and dirt making our range of Angles, Channels and Flats ready to use, so there is no need to waste time and money on shot blasting, wire brush cleaning or priming after fabrication.

## HIGH STRENGTH PERFORMANCE

Australian Tube Mills profiles feature high tensile strength properties. Both Angles and Channels achieve up to 450 MPa, and Flats have a minimum yield strength rating of up to 400 MPa. So, in many applications, a lighter profile may be substituted for Grade 250/300 hot rolled steel, without making any compromises in compression, tension or bending performance. Providing opportunities for significant reductions in material and fabrication costs.

## KINDER TO THE ENVIRONMENT

Because our profiles don't need to be blasted, wire brushed or primed, the pollutants normally associated with these processes are a thing of the past. This is not only good news for you and your workforce, it's good news for the environment as well.

## HOW TO SPECIFY

Specifying profiles with a DuraGal<sup>Ultra</sup> Coating is the only way to be sure you get what you need:

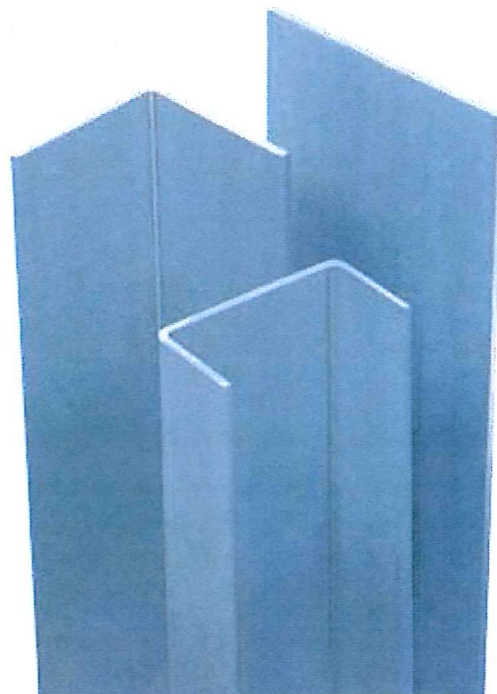
**150 x 75 x 5.0 CC with a DuraGal<sup>Ultra</sup> Coating.**

## WELDING PERFORMANCE

Profiles are made from low carbon structural steel, so they are readily weldable. The zinc coating thickness is carefully controlled to ensure that structurally sound welds can be fabricated using standard welding practices.

The 'DuraGal Easy Welding Guide' provides basic guidelines for welding DuraGal products. We recommend:

- Don't increase the heat
- Use the correct wire or rod
- Use a gas high in CO<sub>2</sub> content







# A BETTER WAY OF WORKING WITH STEEL

## INCREASE THE COATING THICKNESS FOR IMPROVED CORROSION PROTECTION

For applications where superior corrosion performance is required — trusses, bracing, cold storage, transport frames and chassis or transmission towers — You can now specify profiles with 200g/m<sup>2</sup> of DuraGal<sup>Ultra</sup>. This coating provides equivalent durability of a 600g/m<sup>2</sup> zinc coating for a moderate and severe environment.

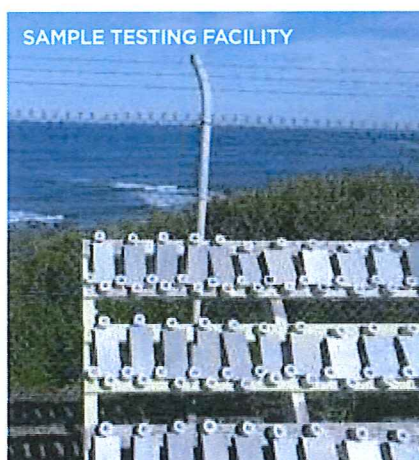
This means our selected range of Profile Angles, Channels and Flats can now be considered for applications where compliance with AS/NZS 4680:2006 'Hot-dip galvanized (zinc) coatings on fabricated ferrous articles' is required.

### NOTE

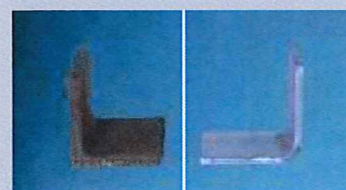
1. The surface appearance of our 200g/m<sup>2</sup> coating represents that of a typical hot-dipped galvanized coating. May not be suitable for aesthetic applications or where a precision top coat will be applied.
2. Weldability reduces, and weld fume increases at higher coating thicknesses. Variations to standard welding practices may be required to weld a 200g/m<sup>2</sup> coating.

## COMPARISON RESULTS IN CORROSION TESTING

Laboratory and field testing has demonstrated that the DuraGal<sup>Ultra</sup> coating significantly exceeds the durability of a zinc coating with an equivalent mass in a range of different environments.



### ANGLES — WEIGHT SAVING In tension-welded connection

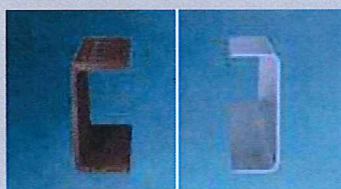


HOT ROLLED  
75 x 75 x 6 =  
6.81Kg/m

OZPROFILE  
65 x 65 x 6  
= 5.62Kg/m

**17.5% Mass Saving**

### CHANNELS — WEIGHT SAVING For a loading of 75KNm



HOT ROLLED  
230 x 75  
= 25.1Kg/m

OZPROFILE  
300 x 90 x 6  
= 21.6Kg/m

**14% Mass Saving**

### CHANNELS — WEIGHT SAVING For a given stiffness requirement



HOT ROLLED  
150 x 75  
= 17.7Kg/m

OZPROFILE  
200 x 75 x 5.0  
= 12.4Kg/m

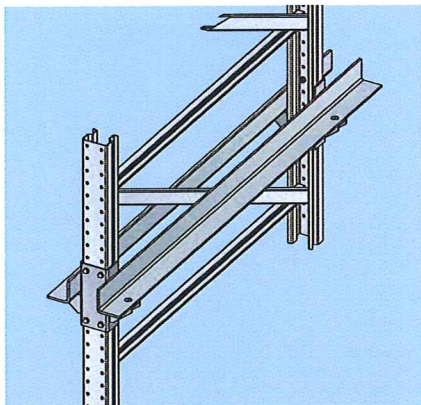
**30% Mass Saving**



IMPROVED CORROSION RESISTANCE • GREATER STRENGTH • CONVENIENCE

## SUGGESTED PROFILE APPLICATIONS

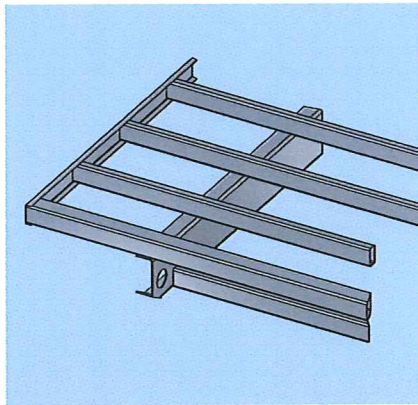
The smooth square profile allows easy connection in a variety of structural applications.



### RACKING

Australian Tube Mills profiles present unique attributes perfect for many industrial and materials handling applications. The illustration shows profile angles used as Pallet Racking Support Beams, where the shape, finish and strength are ideally suited.

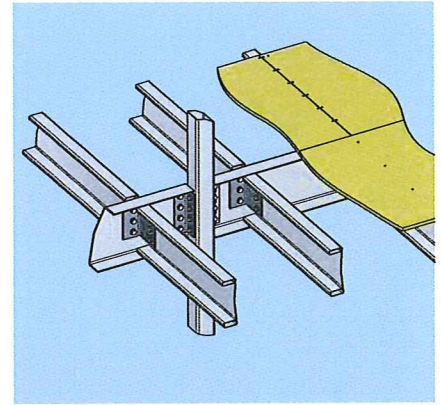
Profile material thickness of 6mm and less can be used down to -30 degrees centigrade and above 6mm thickness for -20 degrees centigrade. This means profiles are ideal for cold room storage applications.



### PORTABLE BUILDING CHASSIS

Portable Building Manufacturers are keenly aware of what products need to deliver to make it into their buildings. Products must satisfy design, plus additional demands of handling, transport and potentially corrosive environments.

Australian Tube Mills profiles are hard to beat, offering versatility, strength, durability and practicality.



### FLOORING SYSTEM

The factory applied durable coating and structurally efficient section properties of profile channels combined with simple bolted connections to create flooring solutions requiring minimal surface treatment and simple fabrication.





# PROFILE RANGE, STEEL GRADES AND AVAILABILITY

## ANGLES

Size	Standard Length m	Nominal Thickness — mm				
		2.5	4.0	5.0	6.0	8.0
		Grade C350LO	Grade C450LO	Grade C450LO	Grade C450LO	Grade C400LO
30 x 30	CA	6.0	1.06 kg/m	-	-	-
40 x 40	CA	6.0	1.43 kg/m	2.20 kg/m	-	-
45 x 45	CA	6.0	1.62 kg/m	2.50 kg/m	-	-
50 x 50	CA	6.0	1.81 kg/m	-	-	-
50 x 50	CA	9.0	-	2.79 kg/m	3.42 kg/m	4.21 kg/m
65 x 65	CA	9.0	-	3.69 kg/m	4.52 kg/m	5.62 kg/m
75 x 75	CA	9.0	-	4.29 kg/m	5.26 kg/m	6.56 kg/m
90 x 90	CA	9.0	-	-	6.37 kg/m	-
100 x 100	CA	12.0	-	-	8.92 kg/m	11.7 kg/m
125 x 125	CA	12.0	-	7.27 kg/m	8.95 kg/m	-
150 x 150	CA	12.0	-	-	10.8 kg/m	13.6 kg/m
75 x 50	CA	9.0	-	3.54 kg/m	4.34 kg/m	5.38 kg/m
100 x 75	CA	12.0	-	-	-	7.74 kg/m
125 x 75	CA	12.0	-	-	-	8.92 kg/m
150 x 100	CA	12.0	-	-	-	11.3 kg/m

Sizes Stocked  
 Sizes Subject to enquiry  
 Other thicknesses & lengths subject to enquiry

Grade (TS100)	Minimum Yield Stress MPa	Minimum Tensile Strength MPa	Minimum Elongation as a Proportion of Gauge Length of 5.65 f <sub>l</sub> S <sub>g</sub> (%)
C350LO	350	400	20
C400LO	400	450	16
C450LO	450	500	16

## CHANNELS

Size	Standard Length m	Nominal Thickness — mm			
		4.0	5.0	6.0	8.0
		Grade C450LO	Grade C450LO	Grade C450LO	Grade C400LO
75 x 40	CC	9.0	4.25 kg/m	-	-
100 x 50	CC	9.0	5.59 kg/m	-	-
125 x 65	CC	9.0	7.23 kg/m	-	-
150 x 75	CC	12.0	-	10.5 kg/m	-
180 x 75	CC	12.0	-	11.6 kg/m	-
200 x 75	CC	12.0	-	12.4 kg/m	15.5 kg/m
230 x 75	CC	12.0	-	-	16.9 kg/m
250 x 90	CC	12.0	-	-	19.2 kg/m
300 x 90	CC	12.0	-	-	21.6 kg/m

## FLATS

Size	Standard Length m	Nominal Thickness — mm			
		4.0	5.0	6.0	8.0
		Grade C400LO	Grade C400LO	Grade C400LO	Grade C350LO
50	CF	6.0	1.49 kg/m	1.84 kg/m	-
65	CF	6.0	1.94 kg/m	2.40 kg/m	-
75	CF	6.0	2.24 kg/m	2.77 kg/m	-
90	CF	6.0	-	-	4.24 kg/m
100	CF	6.0	2.98 kg/m	3.69 kg/m	4.71 kg/m
130	CF	6.0	-	4.80 kg/m	-
150	CF	6.0	-	5.53 kg/m	7.07 kg/m
200	CF	6.0	-	7.38 kg/m	9.42 kg/m
250	CF	6.0	-	9.22 kg/m	-
300	CF	6.0	-	11.1 kg/m	-





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