

## General Description

SUNGAL® is cold-formed structural steel hollow tube with a pre-galvanized zinc coating. It is manufactured using the ERW (Electric Resistance Welded) process and the zinc coating along the weld zone is restored using hot metal spray. It is finished with an organic clear coating to provide interim protection for transit and storage.

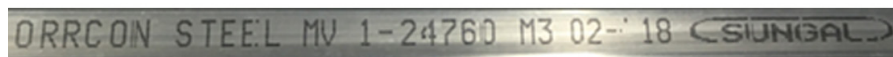
The product meets the requirements of AS/NZS 1163 C350L0, with a minimum specified yield strength of 350 MPa.

## Certification

SUNGAL® is manufactured by an ISO 9001 certified mill and is specified to meet Orrcon Steel quality requirements. Product testing is in accordance with the requirements of AS/NZS 1163; batch sampled and tested in a laboratory accredited to ISO17025 by a signatory to the ILAC-MRA. Orrcon Steel retain product traceability to ensure that test certification can be supplied on delivery of the product file, or on request.

## Identification

Individual length marking.



## Coating

Designation: AS 1397 Z120, 120 g/m<sup>2</sup> total both surfaces minimum average triple spot

Clear coat layer: 1 micron

Durability: Long term durability achieved in a low atmospheric corrosion environment and subject to alternating periods of wet and dry. Not recommended for use in aggressive environments, such as: coastal areas with breaking surf and/or airborne salts; high pollution areas; and applications that involve extended periods of wetness.

Duplex coatings, painting or powder coating over a pre-galvanized surface, have been shown to be very effective to increase the durability.

Atmospheric Category (AS 2312)	Durability
C1 Very Low	Extra long term: 25+ years
C2 Low	Long term: 12 to 25+ years
C3 Medium	Short to medium term: 4 to 12 years
C4 High	Not recommended
C5 Very High	Not recommended

Durability is the estimated time to first major maintenance within the service life of the structure to restore the protection to the base material and is not subject to aesthetic considerations.

Other factors that influence durability, include: design, local variations in environmental conditions and non-atmospheric exposure conditions, such as chemicals, soil and concrete. Additional protective measures, such as organic coating and/or routine maintenance may be required, subject to: the specified design, aesthetics and service life requirements of the structure.

## Available Product Range

Size (mm)	1.6	2.0	2.5	3.0
20 x 20	✓	✓	-	-
25 x 25	✓	✓	✓	✓
30 x 30	✓	✓	✓	✓
35 x 35	✓	✓	✓	✓
50 x 25	✓	✓	✓	✓
40 x 40	✓	✓	✓	✓
50 x 25	✓	✓	✓	✓
50 x 50	✓	✓	✓	✓
65 x 35	✓	✓	✓	✓
75 x 40	✓	✓	✓	✓
75 x 50	✓	✓	✓	✓
65 x 65	✓	✓	✓	✓
75 x 75	✓	✓	✓	✓
100 x 50	✓	✓	✓	✓
89 x 89	✓	✓	✓	✓
100 x 100	-	-	✓	✓
125 x 75	-	-	✓	✓
125 x 125	-	-	✓	✓
150 x 100	-	-	✓	✓

Standard lengths 6500mm and 8000mm

## Typical Applications

- ▶ General fabrication
- ▶ Patios
- ▶ Carports
- ▶ Gazebos
- ▶ Hot Houses
- ▶ Floor Framing
- ▶ Playground Equipment
- ▶ Material Handling Equipment
- ▶ Stock Yards
- ▶ Truck, Bus and Caravan Chassis
- ▶ Pool and Garden Fencing
- ▶ Balustrades and Handrails
- ▶ Security Fencing

## Mechanical Properties – Grade C350L0

Mechanical Property	Specification, min	Typical Range
Yield Strength	350 MPa	390 MPa – 530 MPa
Tensile Strength	430 MPa	500 MPa – 580 MPa
Elongation %, RHS / SHS d = nominal dimension of longer side t = nominal thickness	d/t < 15 = 12%	≥ 16%
	15 < d/t < 30 = 14%	≥ 18%
	30 < d/t = 16%	≥ 20%

SUNGAL tubular steel sections meet the Charpy V Notch impact requirements within AS/NZS 1163 for L0 specification.

## Chemistry – Grade C350L0

Element	C	Si	Mn	P	S	Cr	Mo	Al	Ti	CE <sub>IIW</sub>
Specification (max %)	0.20	0.25	1.60	0.03	0.03	0.30	0.10	0.10	0.04	0.43

Boron limits are less than 0.0005%. The following elements may be present to the limits stated: Cu (0.25%) and Ni (0.25%). Other limits as per AS/NZS 1163 apply.

## Dimensional Tolerances – Complies with AS/NZS 1163

Attribute	Specification
Length	-0, +15mm
Thickness	± 10%
Linear Mass	≥ 96% of nominal mass
Outer dimensions	± 1%, with a minimum of ± 0.5mm
Corner Radius	1.5t to 3.0t (t = nominal thickness)
Twist	2.0mm + 0.5mm/m length
Concavity / Convexity	Max 0.8% or 0.5mm, whichever is greater
Straightness	0.15% of total length
Squareness	90 ± 1°

## Weldability

Additional care is warranted when welding pre-galvanized zinc coatings to manage fume exposure and weld quality. Refer Weld Australia (formerly WTIA) Technical Notes: TN 07 Health and Safety in Welding and TGN-BC-03 Welding of Mill Applied Galv Steel Sections.

Contact us for more about this product

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