奥蓝德钢管
ALLLAND STEEL PIPE

AS/NZS 1163

- ALLLAND Production Standards Overview

Definition and Applications

1. Definition

AS/NZS 1163 is the Australian/New Zealand Standard specifying the requirements for cold-formed structural steel hollow sections (circular (CHS), square (SHS), and rectangular (RHS)). It covers welded and seamless tubes and pipes manufactured by cold-forming and welding processes, intended for static and dynamic load-bearing structures.

2. ALLLAND AS/NZS 1163 Steel Pipe Dimensions

Parameters	Dimensions
O.D.	21.3mm -- 508mm（0.5" – 20"）
WT	1.65 mm – 16 mm（Sch 5S – Sch 100）
Length	6m – 12 m（19' – 40'）
Material	C250, C350, C450 (Standard Grades); V series (Special Purpose); H series (Low Temperature)
Process	Cold-forming, ERW, Seamless
Connection	Welded, Bolted, Mechanical Fastening

3. Application

This standard covers sections used in a wide range of structural applications, including:Building frameworks, trusses, and columns,Architectural and constructional steel

work,Machinery frames, conveyor supports, and guard rails,Agricultural and transport equipment structures,General engineering and fabrication purposes.

Critical Tolerances

Products are manufactured to the dimensional tolerances defined in AS/NZS 1163 , ensuring consistency and fit for structural fabrication.

Item	Tolerance	Description
O.D.	±1.0% or ±0.5 mm (whichever is greater)	Applies to CHS diameter and SHS/RHS width/depth
WT	+10% / -5%	Asymmetric tolerance
Length	+10 mm / 0 mm	For random lengths, tolerance is greater

Chemical and Mechanical Properties

1. Chemical Composition (wt%, max)

Element	Composition, %				
	C250/C250L0	C350/C350L0	C450/C450L0	C350V	C450H
C, max	0.20 - 0.24	0.20 - 0.24	0.20 - 0.24	0.200	0.180
Mn	1.500	1.600	1.700	1.600	1.600
P, max	0.030	0.030	0.030	0.025	0.025
S, max	0.030	0.030	0.030	0.200	0.200
Si,max	0.550	0.550	0.550	0.500	0.500
Cu	0.550	0.550	0.550	0.300	0.300
Al,min	…	…	…	≥0.020	≥0.020
V, max	…	≤0.12	≤0.12	≤0.12	≤0.12
Nb, max	…	≤0.05	≤0.06	≤0.05	≤0.05
Mo, max	…	…	…	0.100	0.100
CEV, max	0.35 - 0.41	0.40 - 0.46	0.44 - 0.50	0.420	0.400

2. Mechanical Properties

Grade		Tensile Strength, min	Yield Strength, min
C250 / C250L0	psi	58,000	36,300
	MPa	400	250
C350 / C350L0	psi	68,200	50,800
	MPa	470	350

C450 / C450L0	psi	76,900	65,300
	MPa	530	450
C350V	psi	68,200	50,800
	MPa	470	350
C450H	psi	76,900	65,300
	MPa	530	450

3. Sectional properties for a limited range

Table1-- CIRCULAR HOLLOW SECTIONS

outside diameter	thickness	outside diameter	thickness
610	12.7	406.4	12.7
610	8.5	406.4	8.5
610	6.4	406.4	6.4
508	12.7	355.6	12.7
508	9.5	355.6	9.5
508	6.4	355.6	6.4
165.1	5.4	323.9	12.7
165.1	5.0	323.9	8.5
139.7	5.4	323.9	6.4
139.7	5.0	273.1	9.3
114.3	5.4	273.1	6.4
114.3	4.5	273.1	4.8
101.6	5.0	219.1	8.2
101.6	4.0	219.1	6.4
88.9	5.9	219.1	4.8
88.9	5.0	168.3	7.1
88.9	4.0	168.3	6.4
76.1	5.9	168.3	4.8
76.1	4.5	165.1	3.5
76.1	3.6	165.1	3.0
60.3	5.4	139.7	3.5
60.3	4.5	139.7	3.0
60.3	3.6	114.3	6.0
48.3	5.4	114.3	4.8
48.3	4.0	114.3	3.6
48.3	3.2	114.3	3.2
42.4	4.9	101.6	3.2
42.4	4.0	101.6	2.6
42.4	3.2	88.9	3.2
457	12.7	88.9	2.6
457	9.5	76.1	3.2
457	6.4	76.1	2.3

Table 2-- RECTANGULAR HOLLOW SECTIONS

Specified dimensions		Specified thickness	Specified dimensions		Specified thickness
H*B		T	H*B		T
250	150	6.0	100	50	2.0
250	150	5.0	75	50	4.0
250	150	4.0	75	50	3.0
200	100	6.0	75	50	2.5
200	100	5.0	75	50	2.0
200	100	4.0	75	25	2.5
150	100	6.0	75	25	2.0
150	100	4.0	75	25	1.6
150	50	5.0	65	35	3.0
150	50	4.0	65	35	2.5
150	50	3.0	65	35	2.0
125	75	6.0	50	25	3.0
125	75	5.0	50	25	2.5
125	75	4.0	50	25	2.0
100	50	6.0	50	25	1.6
100	50	5.0	50	20	3.0
100	50	4.0	50	20	2.5
100	50	3.5	50	20	2.0
100	50	3.0	50	20	1.6
100	50	2.5			

Table 3--SQUARE HOLLOW SECTIONS

outside diameter	thickness	outside diameter	thickness
250	9.0	65	3.0
250	6.0	65	2.5
200	9.0	65	2.0
200	6.0	50.0	4.0
200	5.0	50.0	3.0
150	9.0	50.0	2.5
150	6.0	50.0	2.0
150	5.0	50.0	1.6
125	9.0	40.0	4.0
125	6.0	40.0	2.5
125	5.0	40.0	2.0
125	4.0	40.0	1.6
100	8.0	35.0	3.0
100	6.0	35.0	2.5
100	5.0	35.0	2.0
100	4.0	35.0	1.6

outside diameter	thickness	outside diameter	thickness
80	6.0	30.0	2.0
80	5.0	30.0	1.6
80	3.0	25.0	3.0
75	6.0	25.0	2.5
75	5.0	25.0	2.0
75	4.0	25.0	1.6
75	3.0	20.0	1.6

Testing Requirements

1.Chemical Composition Test

- Conducted per relevant standards to verify composition.

2.Tensile Test

- Determines yield strength (ReH or Rp0.2), tensile strength (Rm), and elongation.

3.Impact Test

- Required for H series grades at specified sub-zero temperatures. Optional or as-agreed for other grades.

4.Flattening Test or Drift Expanding Test

- Assesses weld ductility and formability.

Surface Treatment:

- Available finishes include painting, oiling, FBE, 3PP, 3PE, TPEP and other anti-corrosion treatments.

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ALLLAND AS/NZS 1163 Product Images