



broadspec Pipe Product Catalogue



we'll see it through



Orrcon Steel is a leading Australian distributor and manufacturer of Steel, Tube and Pipe.

We have distribution centres in five Australian states and a number of branches, stockists and resellers nation-wide.

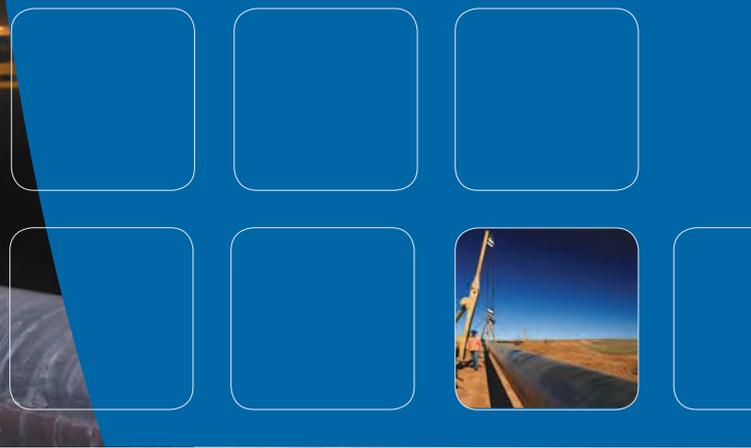
Orrcon Steel adheres to principles of quality, innovation, flexibility and dedication. These principles are achieved by going the extra mile in everything we do and working in partnership with our customers and suppliers.

At Orrcon Steel – we'll see it through.

Orrcon Steel's Broadspec® pipe comprises a range of structural steel tubulars and pressure pipe products that comply with multiple industry standards. Developed by our engineers in conjunction with national and international steel pipe suppliers, Broadspec® pipe meets API 5L and AS/NZS 1163 industry standards. This allows Broadspec® pipe to be used in multiple applications, including buildings, marinas, sports stadiums and oil, gas, water and slurry pipelines.

Broadspec® pipe presents an economical solution for structural steel and pressure pipe consumers, as Orrcon Steel can optimise steel pipe stock management by providing a single product specification across multiple project applications. Broadspec® pipe has been developed with unique mechanical and chemical properties and a complex processing and testing system. This allows Orrcon Steel to offer stock pipe from 88.9mm OD to 610mm OD to meet the two industry standards noted above.





BROADSPEC® THE MULTI-TALENTED PIPE

Broadspec® pipe combines the features of both structural steel and pressure pipe. Designed specifically for the Australian pipeline and infrastructure market, Broadspec® pipe is a versatile product that is suitable for a number of end user applications including:

Structural Applications

- Commercial Buildings
- Piles & Marinas
- Sporting Arenas
- Bridges
- Heavy Fabrication and Mining.

Pressure Pipe

- Water
- Oil & Gas
- Slurry & Tailings
- Compressed Air
- Steam
- Piping Systems and Pipework

By choosing Broadspec® pipe for your manufacturing project, you no longer need to manage the segregation of pipe stocks on site. The Broadspec® range has the right pipe to cater for your application in its specific diameter and wall thickness.

BROADSPEC® PIPE PRODUCT FEATURES: WHAT IS IN A NAME?

Broadspec® is pipe that is made from steel that has low carbon content. Mechanical processing, forming, drilling, cutting and swaging of Broadspec® pipe is equal to or superior to other carbon steel pipes available in the market. It is readily welded by normal welding methods. Preheating of Broadspec® pipe prior to welding is not normally required.

MEETING INDUSTRY STANDARDS AND EXCEEDING YOUR EXPECTATIONS

Broadspec® pipe covers the following Australian and international materials standards:

Standard	Grades
API 5L	X42
AS/NZS 1163	C350 L0

Broadspec® pipe also meets the design rules specified in AS 4041, AS 2118/4118, AS 4100 as well as other standards.

A range of mechanical/chemical tests are carried out to demonstrate compliance with all two materials standards. API 5L and AS/NZS 1163 require different test methods to demonstrate tensile and fracture toughness properties comply. Additionally, hydrostatic pressure tests and non destructive inspection of the weld are undertaken to demonstrate structural and pressure integrity.

BROADSPEC® PIPE – BRINGING YOU MULTIPLE DESIGN APPLICATIONS

Due to its versatile nature, steel pipe made to the Orrcon Steel Broadspec® pipe specification can be used for a range of piping application codes, such as:

- Class 1 Pipe Requirements of AS 4041 for pressure piping which includes the following service conditions – high pressure, toxic, lethal or flammable liquids and gas.
- Major pressure pipelines to AS 2885 designed for gas and petroleum pipelines.
- Structures designed to comply with AS 4100.



FACTS & FIGURES – BROADSPEC® PIPE TECHNICAL SPECIFICATION EQUIVALENTS

Minimum Mechanical Properties

Standard	API 5L	AS/NZS 1163
Grade	X42	C350L0
Yield Strength (MPa)	290	350
Tensile Strength (MPa)	414	430
Comments	Longitudinal test direction <219.1mm OD Transverse test direction ≥ 219.1mm OD	Longitudinal test direction aged for 15 minutes at 150-200°C

Chemical Composition

Tight control on chemical composition during steel making ensures Orrcon Steel Broadspec® pipe achieves excellent toughness properties and weldability. The guaranteed maximum concentration of certain elements is as follows:

	Element Maximum Limits (%)			
	Carbon	Sulfur	Phosphorus	Carbon Equivalent
Broadspec® pipe	0.20	0.03	0.03	0.43



DIMENSIONAL TOLERANCES

Broadspec® pipe is specified to comply with the more stringent requirements of either API 5L (ISO 3183) or AS/NZS 1163.

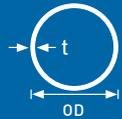
SPECIFICATIONS		API 5L 44th Ed	AS/NS 1163
Dimensional Tolerances	Outside Diameter	168.3} ± 1.6mm 219.1-273.1} - 0.4mm ±0.005% 323.9-457.0} ± 1.6mm	±1%
	Thickness	≤5.0mm} ± 0.5mm 5.0 - 15.0mm} ± 10% ≥15.0mm} 1.5mm	±10%
	Straightness	$\frac{L}{500}$	$\frac{L}{500}$
	Bevel Angle	30° ^{+5°} _{-0°}	Not Specified
	Bevel Root Face	1.6mm ± 0.8mm	
	End Squareness	1.6mm max	
	Linear Mass	[0.02466t(D-t)] ^{+10%} _{-3.5%}	[0.02466t(D-t)] ^{+4.0%}

FRACTURE TOUGHNESS

Broadspec® pipe is tested at 0°C to comply with AS/NZS 1163 "L0" designation to allow for use in low design temperature structural applications. Compliance with API 5L PSL2 for low design temperature applications to AS 4041 available upon enquiry.



BROADSPEC® PIPE PRODUCT RANGE

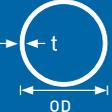


Section: Pipe (CHS)
 Standard: AS/NZS 1163 / API 5L
 Grade: C350L0, X42

NB (mm)	OD (mm)	Nom. Thick (mm)	MDMT °C	Pressure Rating Ambient MPa	Nom. Linear mass (kg/m)	Nom. [m/t]
12000mm Length						
80	88.9	5.5	-40	20.9	11.31	88
80	88.9	7.6	-30	29.3	15.24	66
100	114.3	4.8	-50	13.8	12.96	77
100	114.3	6.0	-40	17.5	16.02	62
100	114.3	8.6	-30	25.6	22.42	45
125	141.3	4.8	-50	11.1	16.16	62
125	141.3	6.6	-40	15.4	21.92	46
125	141.3	9.5	-20	22.7	30.88	32
150	168.3	4.8	-50	9.3	19.35	52
150	168.3	6.4	-40	12.5	25.55	39
150	168.3	7.1	-30	13.9	28.22	35
150	168.3	11.0	-20	22.0	42.67	23
200	219.1	4.8	-50	7.1	25.37	39
200	219.1	6.4	-40	9.5	33.57	30
200	219.1	8.2	-30	12.3	42.65	23
200	219.1	12.7	-20	19.4	64.64	15
250	273.1	4.8	-50	5.7	31.76	31
250	273.1	6.4	-40	7.6	42.09	24
250	273.1	9.3	-20	11.1	60.50	17
250	273.1	12.7	-20	15.4	81.55	12
300	323.9	4.8	-50	4.8	37.77	26
300	323.9	6.4	-40	6.4	50.11	20
300	323.9	9.5	-20	9.5	73.65	14
300	323.9	12.7	-20	12.9	97.41	10
350	355.6	4.8	-50	4.3	41.50	24
350	355.6	6.4	-40	5.8	55.11	18
350	355.6	9.5	-20	8.7	81.08	12
350	355.6	12.7	-20	11.7	107.39	9
400	406.4	4.8	-50	3.8	47.50	21
400	406.4	6.4	-40	5.1	63.13	16
400	406.4	9.5	-20	7.6	92.98	11
400	406.4	12.7	-20	10.2	123.30	8



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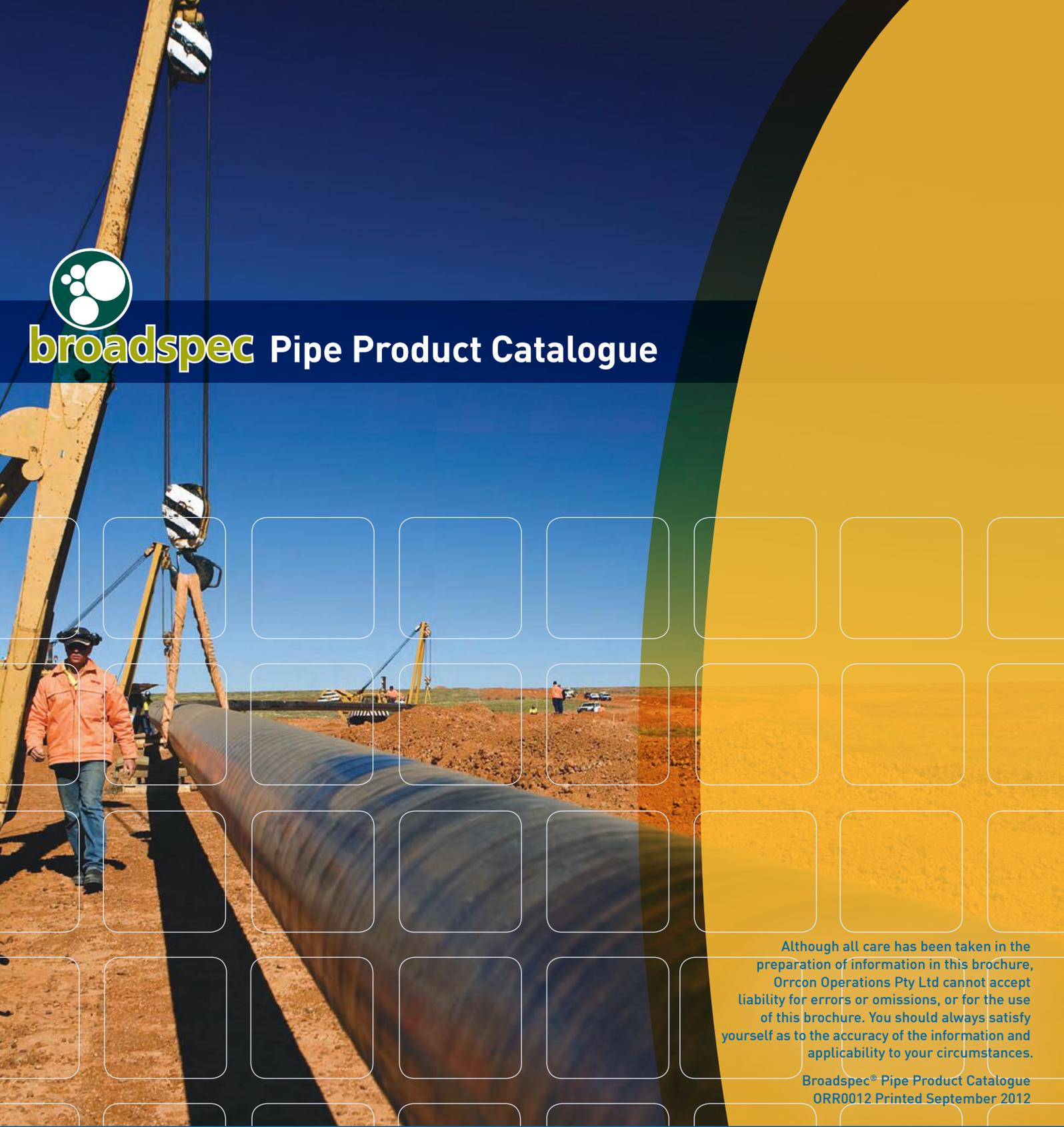
 <p>Section: Pipe (CHS) Standard: AS/NZS 1163 / API 5L Grade: C350L0, X42</p>						
NB (mm)	OD (mm)	Nom. Thick (mm)	MDMT °C	Pressure Rating Ambient MPa	Nom. Linear mass (kg/m)	Nom. [m/t]
450	457	4.8	-50	3.4	53.53	19
450	457	6.4	-40	4.5	71.12	14
450	457	9.5	-20	6.7	104.84	10
450	457	12.7	-20	9.0	139.15	7
500	508	6.4	-40	4.0	79.16	13
500	508	9.5	-20	6.0	116.78	9
500	508	12.7	-20	8.1	155.12	6
600	610	6.4	-40	3.4	95.26	10
600	610	9.5	-20	5.0	140.68	7
600	610	12.7	-20	6.7	186.06	5

NOTE:

- Stock Lengths are 12 metres. Non-standard stock Lengths are available from 9 to 18 metres.
- A cut-to-length service is available on request.
- API bevel ends are standard for stock lengths only.
- Non standard sizes, surface finishes and lengths available subject to enquiry. Minimum order quantities (MOQ) apply.
- The values and calculations in the table above are based on AS 4041.
- Project supply subject to enquiry.
- Surface finish is NOPC or Mill Varnish.
- Product specification level (PSL1 or PSL2) subject to enquiry.
- Contact your Orrcon Steel representative for the correct quantity of lengths per pack.



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