

# STOCK LIST

MATERIAL SPECIFICATIONS  
AND TOLERANCES



**RELIABLE PIPES & TUBES LTD.**

TOLERANCES

GRADES, PROPERTIES &  
NEAREST EQUIVALENTS

PLATE WEIGHTING

ADDITIONAL  
SERVICES

STRUCTURAL  
STEEL

PRESSURE VESSEL  
CHROME MOLYBDENUM

BOILER QUALITY

VERY HIGH YIELD &  
ABRASION RESISTANT

HIGH YIELD



# RELIABLE PIPES & TUBES LTD.

Tolerances on thickness														
Dimensions in mm														
Nominal Thicknesses	Tolerance on the nominal thickness								Maximum thickness difference within a plate					
	Class A		Class B		Class C		Class D		Nominal plate width					
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	≥ 600 < 2000	≥ 2000 < 2500	≥ 2500 < 3000	≥ 3000 < 3500	≥ 3500 < 4000	≥ 4000
≥ 3 < 5	-0,4	+0,8	-0,3	+0,9	0	+1,2	-0,6	+0,6	0,8	0,9	0,9	-	-	-
≥ 5 < 8	-0,4	+1,1	-0,3	+1,2	0	+1,5	-0,75	+0,75	0,9	0,9	1,0	1,0	-	-
≥ 8 < 15	-0,5	+1,2	-0,3	+1,4	0	+1,7	-0,85	+0,85	0,9	1,0	1,0	1,1	1,1	1,2
≥ 15 < 25	-0,6	+1,3	-0,3	+1,6	0	+1,9	-0,95	+0,95	1,0	1,1	1,2	1,2	1,3	1,4
≥ 25 < 40	-0,8	+1,4	-0,3	+1,9	0	+2,2	-1,1	+1,1	1,1	1,2	1,2	1,3	1,3	1,4
≥ 40 < 80	-1,0	+1,8	-0,3	+2,5	0	+2,8	-1,4	+1,4	1,2	1,3	1,4	1,4	1,5	1,6
≥ 80 < 150	-1,0	+2,2	-0,3	+2,9	0	+3,2	-1,6	+1,6	1,3	1,4	1,5	1,5	1,6	1,7
≥ 150 < 250	-1,2	+2,4	-0,3	+3,3	0	+3,6	-1,8	+1,8	1,4	1,5	1,6	1,6	1,7	-

Boiler, Pressure Vessel and Chrome Molybdenum are to Class C  
Structural and offshore is to Class A

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## RELIABLE PIPES & TUBES LTD.

### Flatness Tolerances for plates

Dimensions in mm				
Nominal thicknesses	Steel type L		Steel type H	
	Measuring length			
	1000	2000	1000	2000
≥ 3 < 5	9	14	12	17
≥ 5 < 8	8	12	11	15
≥ 8 < 15	7	11	10	14
≥ 15 < 25	7	10	10	13
≥ 25 < 40	6	9	9	12
≥ 40 < 250	5	8	8	11

Pressure Vessel, Boiler Structural, High Yield and CrMo plate **meet steel type L** with a specified yield of  $\leq 460$  N/mm<sup>2</sup>  
 Quenched and Tempered plate meet **steel type H** and has a specified yield of  $> 460 < 700$  N/mm<sup>2</sup>



# RELIABLE PIPES & TUBES LTD.

## Grades, properties and nearest equivalents

Table 1. EN 10025 : Part 2 : 2004 Non-alloy Structural Steels

Comparison between grades in EN 10025 : part 2 : 2004 and nearest equivalent versions in EN 10025 : 1993 and BS 4360 : 1990

EN 10025 : part 2 : 2004					EN 10025 : 1993	EN 4360 : 1990
Grade	Yield (Reh) min	Tensile (Rm)	Charpy V-notch longitudinal		Grade	Grade
	Strength at t = 16 mm (MPa)		Temp (°C)	Energy (J) t = 16mm		
S185	185	290/510	-	-	S185	-
- <sup>1</sup>	235	360/510	-	-	S235	40A
S235JR <sup>2</sup>			20	27	S235JRG1/G2	40B
S235J0			0	27	S235J0	40C
S235J2			-20	27	S235J2G3/G4	40D
- <sup>1</sup>	275	410/560	-	-	S275	43A
S275JR <sup>2</sup>			20	27	S275JR	43B
S275J0			0	27	S275J0	43C
S275J2			-20	27	S275J2G3/G4	43D

1 MPa = 1 N/mm<sup>2</sup>

GRADES, PROPERTIES & NEAREST EQUIVALENTS

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## RELIABLE PIPES & TUBES LTD.

### Grades, properties and nearest equivalents

Table 1 (continued). EN 10025 : Part 2 : 2004 Non-alloy Structural Steels

#### Comparison between grades in EN 10025 : part 2 : 2004 and nearest equivalent versions in EN 10025 : 1993 and BS 4360 : 1990

EN 10025 : part 2 : 2004					EN 10025 : 1993	EN 4360 : 1990
Grade	Yield (Reh) min	Tensile (Rm)	Charpy V-notch longitudinal		Grade	Grade
	Strength at t = 16 mm (MPa)		Temp (°C)	Energy (J) t = 16mm		
- 1	355	470/630	-	-	S355	50A
S355JR 2			20	27	S355JR	50B
S355J0			0	27	S355J0	50C
S335J2			-20	27	S355J2G3/G4	50D
S335K2			-20	40	S355K2G3/G4	50DD
E295	295	470/610	-	-	E295	-
S335	335	570/710	-	-	S335	-
E360	360	650/830	-	-	E360	-

1 MPa = 1 N/mm<sup>2</sup>

- For all products to be compliant with the EU Construction Products Directive (CPD 89/106/EC) the material must offer a guaranteed minimum impact performance. This has resulted in the removal of this grade from the standard, and the lowest grade now offered is the JR version for each yield strength variation.
- Verification of the specified impact value is only carried out when agreed at the time of the enquiry and order.



# RELIABLE PIPES & TUBES LTD.

## Grades, properties and nearest equivalents

Table 2. EN 10025 : Part 3 : 2004 Normalised/normalised rolled weldable fine grain structural steels

Comparison between grades in EN 10025 : part 3 : 2004 and nearest equivalent versions in EN 10113 : part 2 : 1993 and BS 4360 : 1990

EN 10025 : part 3 : 2004					EN10113:part 2:1993	BS 4360 : 1990
Grade	Yield (Reh) min	Tensile (Rm)	Charpy V-notch longitudinal		Grade	Grade
	Strength at t = 16 mm (MPa)		Temp (°C)	Energy (J) t = 16mm		
S275N	275	370/510	-20	40	S275N	43DD
S275NL			-50	27	S275NL	43EE
S355N	355	470/630	-20	40	S355N	50
S355NL			-50	27	S355NL	50EE
S420N	420	520/680	-20	40	S420N	-
S420NL			-50	27	S420NL	-
S460N	460	550/720	-20	40	S460N	55C
S460NL			-50	27	S460NL	55EE

1 MPa = 1 N/mm<sup>2</sup>

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## RELIABLE PIPES & TUBES LTD.

### Grades, properties and nearest equivalents

Table 3. EN 10025 : Part 4 : Thermomechanically rolled weldable fine grain structural steels

Comparison between grades in EN 10025 : part 4 : 2004 and nearest equivalent versions in EN 10113 : part 3 : 1993

EN 10025 : part 4 : 2004				EN10113:part 3:1993	
Grade	Yield (Reh) min	Tensile (Rm)	Charpy V-notch longitudinal		Grade
	Strength at t = 16 mm (MPa)		Temp (°C)	Energy (J) t = 16mm	
S275M	275	370/510	-20	40	S275M
S275ML			-50	27	S275ML
S355M	355	470/630	-20	40	S355M
S355ML			-50	27	S355ML
S420M	420	520/680	-20	40	S420M
S420ML			-50	27	S420ML
S460M	460	550/720	-20	40	S460M
S460ML			-50	27	S460ML

1 MPa = 1 N/mm<sup>2</sup>



# RELIABLE PIPES & TUBES LTD.

## Grades, properties and nearest equivalents

Table 5. EN 10025 : Part 6

2004 Flat products of high yield strength structural steels in the quenched and tempered condition

Comparison between grades in EN 10025 : part 6 : 2004 and nearest equivalent versions in EN 10137 : part 2 : 1996 and BS 4360 : 1990

EN 10025 : part 6 : 2004					EN10137:part 2:1996	BS 4360 : 1990
Grade	Yield (Reh) min	Tensile (Rm)	Charpy V-notch longitudinal		Grade	Grade
	Strength at t = 16 mm (MPa)		Temp (°C)	Energy (J) t = 16mm		
S460Q	460	550/720	-20	30	S460Q	-
S460QL			-40	30	S460QL	-
S460QL1			-60	30	S460QL1	55F
S500Q	500	590/770	-20	30	S500Q	-
S500QL			-40	30	S500QL	-
S500QL1			-60	30	S500QL1	-
S550Q	550	640/820	-20	30	S550Q	-
S550QL			-40	30	S550QL	-
S550QL1			-60	30	S550QL1	-

1 MPa = 1 N/mm<sup>2</sup>

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## RELIABLE PIPES & TUBES LTD.

### Grades, properties and nearest equivalents

Table 5 (continued). EN 10025 : Part 6

2004 Flat products of high yield strength structural steels in the quenched and tempered condition

Comparison between grades in EN 10025 : part 6 : 2004 and nearest equivalent versions in EN 10137 : part 2 : 1996 and BS 4360 : 1990

EN 10025 : part 2 : 2004					EN10137:part 2:1996	EN 4360 : 1990
Grade	Yield (Reh) min	Tensile (Rm)	Charpy V-notch longitudinal		Grade	Grade
	Strength at t = 16 mm (MPa)		Temp (°C)	Energy (J) t = 16mm		
S620Q	620	700/890	-20	30	S620Q	-
S620QL			-40	30	S620QL	-
S620QL1			-60	30	S620QL1	-
S690Q	690	770/940	-20	30	S690Q	-
S690QL			-40	30	S690QL	-
S690QL1			-60	30	S690QL1	-
S890Q	890	940/1100	-20	30	S890Q	-
S890QL			-40	30	S890QL	-
S890QL1			-60	30	S890QL1	-
S960Q	960	960/1150	-20	30	S960Q	-
S960QL			-40	30	S960QL	-

1 MPa = 1 N/mm<sup>2</sup> [NOTE: Other impact temperatures can be specified]



# RELIABLE PIPES & TUBES LTD.

## Grade designation systems

The designation systems used in the new standard are similar but not identical to EN 10025 : 1993 and very different to the familiar BS 4360 designations so the guide below has been prepared to assist purchasers, specifiers, designers and users of steel.

### Symbols used in: EN 10025 : part 2 : 2004 Non-alloy structural steels

S...	Structural steel
E...	Engineering Steel
.235...	Minimum yield strength (Reh) in MPa @ 16mm
...JR..	Longitudinal Charpy V-notch impacts 27 J @ +20°C
...J0..	Longitudinal Charpy V-notch impacts 27 J @ 0°C
...J2..	Longitudinal Charpy V-notch impacts 27 J @ -20°C
...K2..	Longitudinal Charpy V-notch impacts 40 J @ -20°C
...+AR	Supply condition as rolled
...+N	Supply condition normalised or normalised rolled

### Customer options

...C..	Grade suitable for cold forming
...Z..	Grade with improved properties perpendicular to the surface

Examples: S235JR+AR, S355K2C+N

### Symbols used in: EN 10025 : part 3 : 2004 Normalised/normalised rolled weldable fine grain structural steels

S...	Structural steel
.275...	Minimum yield strength (Reh) in MPa @ 16mm
...N..	Longitudinal Charpy V-notch impacts at a temperature not lower than -20°C
...NL..	Longitudinal Charpy V-notch impacts at a temperature not lower than -50°C

### Customer options

...Z..	Grade with improved properties perpendicular to the surface
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Examples: S275N, S420NL Z35

### Symbols used in: EN 10025 : part 4 : 2004 Thermomechanically rolled weldable fine grain structural steels

S...	Structural steel
.275...	Minimum yield strength (Reh) in MPa @ 16mm
...M..	Longitudinal Charpy V-notch impacts at a temperature not lower than -20°C
...ML..	Longitudinal Charpy V-notch impacts at a temperature not lower than -50°C

### Customer options

...Z..	Grade with improved properties perpendicular to the surface
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Examples: S355N, S460ML Z25



## RELIABLE PIPES & TUBES LTD.

### Grade designation systems

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Symbols used in: EN 10025 : part 5 : 2004

Structural steels with improved atmospheric corrosion resistance (weathering steels)

S...	Structural steel
.355...	Minimum yield strength (ReH) in MPa @ 16mm
...J0..	Longitudinal Charpy V-notch impacts 27 J @ 0°C
...J2..	Longitudinal Charpy V-notch impacts 27 J @ -20°C
...K2..	Longitudinal Charpy V-notch impacts 40 J @ -20°C
...W..	Improved atmospheric corrosion resistance
...P..	Greater phosphorus content (grade S355 only)
...+AR	Supply condition as rolled
...+N	Supply condition normalised or normalised rolled

#### Customer options

...Z..	Grade with improved properties perpendicular to the surface
--------	---

Examples: S235J0W+AR, S355K2W+N Z25

Symbols used in: EN 10025 : part 6 : 2004

Flat products of high yield strength structural steels in the quenched and tempered condition

S...	Structural steel
.460...	Minimum yield strength (ReH) in MPa @ 16mm
...Q..	Longitudinal Charpy V-notch impacts at a temperature not lower than -20°C
...QL..	Longitudinal Charpy V-notch impacts at a temperature not lower than -40°C
...QL1..	Longitudinal Charpy V-notch impacts at a temperature not lower than -60°C

#### Customer options

...Z..	Grade with improved properties perpendicular to the surface
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Examples: S460Q, S690QL



# RELIABLE PIPES & TUBES LTD.

## Plate Weighting for plates to class C tolerances (boilers & pressure vessel grades)

Thickness (mm)	Width	Weight Factor*
5	2000	8.56
6	2000	8.44
6	2500	8.51
6	3000	8.51
8	2000	8.34
8	2500	8.34
8	3000	8.39
8	3250	8.39
10	2000	8.25
10	2500	8.25
10	3000	8.29
10	3450	8.29
12.5	2000	8.17
12.5	2500	8.17
12.5	3000	8.20
13	2000	8.16
13	2500	8.16
13	3000	8.19
13	3450	8.19
14	3000	8.16
15	2000	8.14
15	2500	8.17

Thickness (mm)	Width	Weight Factor*
15	3000	8.17
16	2000	8.12
16	2500	8.15
16	3000	8.15
16	3450	8.15
18	3450	8.12
19	3450	8.10
20	2000	8.07
20	2500	8.09
20	3000	8.09
20	3450	8.09
22	2000	8.05
22	2500	8.07
22	3000	8.07
22	3450	8.07
25	2000	8.04
25	2500	8.04
25	3000	8.06
25	3450	8.06
30	2000	8.01
30	2500	8.01
30	3000	8.02

Thickness (mm)	Width	Weight Factor*
32	2000	8.00
32	3100	8.01
35	2000	7.99
35	2500	7.99
35	3000	8.00
40	2000	7.98
40	2500	7.99
40	3000	7.99
45	2000	7.97
45	2500	7.98
45	3000	7.98
50	2000	7.96
50	2500	7.96
50	3000	7.96
55	3000	7.95
57	2000	7.94
57	3000	7.95
60	2000	7.94
60	2500	7.95
60	3000	7.95
65	2000	7.93
65	2500	7.94

Thickness (mm)	Width	Weight Factor*
65	3000	7.94
70	2000	7.93
70	2500	7.93
75	2000	7.92
75	2500	7.93
80	2000	7.92
80	2500	7.93
85	2500	7.92
90	2000	7.92
90	2500	7.92
100	2000	7.91
100	2500	7.91
102	2750	7.91
115	2000	7.90
115	2500	7.90
120	2750	7.90
130	2000	7.90
130	2500	7.90
140	2500	7.90
150	2000	7.89
150	2500	7.89

PLATE WEIGHTING

ADDITIONAL SERVICES

STRUCTURAL STEEL

PRESSURE VESSEL CHROME MOLYBDENUM

BOILER QUALITY

VERY HIGH YIELD & ABRASION RESISTANT

HIGH YIELD



## **RELIABLE PIPES & TUBES LTD.**

### Plate Weighting

#### **WEIGHTS TO BE CHARGED ON INVOICES**

The ruling thickness tolerance for the standard will determine the method of calculating the weight.

For the purpose of calculation the density of steel will be 7.85kg per square metre per millimetre of thickness.

#### **EN 10 029 TOLERANCES**

##### **CLASS A**

Calculated weight based on order thickness.

N.B. Structural and offshore are the class A tolerances.

##### **CLASS C**

The calculated weight shall be based on the minimum thickness tolerance plus half the value specified in the standard for the maximum difference in thickness in any individual plate between two points measured on the plate, as permitted by the standard.

N.B. All boiler and Pressure Vessels are to class C tolerance

##### **ASTM (ASME)**

The calculated weight shall be based on the minimum thickness plus half the total thickness tolerance as specified in ASTM A6 or A20 unless other production tolerances are agreed or implied.



# RELIABLE PIPES & TUBES LTD.

## Profiling

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### Oxy Plasma

Plates up to 40mm thick  
15m long  
3.5m wide

### Oxy Propane

Plates up to 500mm thick  
20m long  
6m wide

## Additional Services

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### CAD CAM

DXF import / export facilities  
Instant recall of drawings  
Kit of parts supplied for you to assemble

## Ease of Identification

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Palletised  
Shrink Wrapped  
Hard Stamped  
Labelled / Bagged Parts

## Finishing Services

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Grinding  
Machining  
Shotblasting  
Bevelling  
Rolling  
Painting  
Bending

ADDITIONAL  
SERVICES

STRUCTURAL  
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PRESSURE VESSEL  
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BOILER QUALITY

VERY HIGH YIELD &  
ABRASION RESISTANT

HIGH YIELD

**Reliable Plates** in collaboration with independent and mill test houses are able to offer a complete service for the testing / re-testing of all steels. This can be provided on very short lead times to ensure that you and your clients have complete faith in the product that we supply and therefore there are no delays to your production process. Our services include:

## Testing

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- Ultrasonics
- H.I.C to N.A.C.E
- Tensile Through Thickness
- Impacts To Your Requirements  
Lloyds, DNV, British Engine and all third party witness
- Recertification by manufacturer
- MPI
- Charpy impacts
- Check analysis
- Hardness

## Structural Steel Plate BS EN 10025: PART 2: 2004 S275 J0 / JR /J2

2000 x 1000 x 3mm	2000 x 1000 x 8mm	2000 x 1000 x 15mm	5000 x 2500
2500 x 1250	2500 x 1250	2500 x 1250	10000 x 2500
3000 x 1500	3000 x 1500	3000 x 1500	12000 x 2500
4000 x 2000	4000 x 2000	4000 x 2000	6000 x 3000
2000 x 1000 x 4mm	5000 x 2500	8000 x 2000	2000 x 1000 x 30mm
2500 x 1250	6000 x 2500	5000 x 2500	2500 x 1250
3000 x 1500	10000 x 2500	10000 x 2500	3000 x 1500
4000 x 2000	6000 x 3000	12000 x 2500	4000 x 2000
2000 x 1000 x 5mm	2000 x 1000 x 10mm	6000 x 3000	8000 x 2000
2500 x 1250	2500 x 1250	2000 x 1000 x 20mm	5000 x 2500
3000 x 1500	3000 x 1500	2500 x 1250	10000 x 2500
4000 x 2000	4000 x 2000	3000 x 1500	12000 x 2500
6000 x 2500	5000 x 2500	4000 x 2000	6000 x 3000
2000 x 1000 x 6mm	10000 x 2500	8000 x 2000	2000 x 1000 x 35mm
2500 x 1250	6000 x 3000	5000 x 2500	2500 x 1250
3000 x 1500	2000 x 1000 x 12.5mm	10000 x 2500	3000 x 1500
4000 x 2000	2500 x 1250	12000 x 2500	4000 x 2000
5000 x 2500	3000 x 1500	6000 x 3000	8000 x 2000
6000 x 2500	4000 x 2000	2000 x 1000 x 25mm	5000 x 2500
8000 x 2500	8000 x 2000	2500 x 1250	10000 x 2500
10000 x 2500	5000 x 2500	3000 x 1500	12000 x 2500
6000 x 3000	10000 x 2500	4000 x 2000	6000 x 3000
10000 x 3000	6000 x 3000	8000 x 2000	

STRUCTURAL  
STEEL

PRESSURE VESSEL  
CHROME MOLYBDENUM

BOILER QUALITY

VERY HIGH YIELD &  
ABRASION RESISTANT

HIGH YIELD



## Structural Steel Plate BS EN 10025: PART 2: 2004 S275 J0 / JR / J2

2000 x 1000 x 40mm  
 2500 x 1250  
 3000 x 1500  
 4000 x 2000  
 8000 x 2000  
 5000 x 2500  
 10000 x 2500  
 12000 x 2500  
 6000 x 3000

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2000 x 1000 x 45mm  
 2500 x 1250  
 3000 x 1500  
 4000 x 2000  
 5000 x 2500

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2000 x 1000 x 50mm  
 2500 x 1250  
 3000 x 1500  
 4000 x 2000  
 8000 x 2000  
 5000 x 2000  
 6000 x 3000

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2500 x 1250 x 55mm  
 5000 x 2500

2000 x 1000 x 60mm  
 2500 x 1250  
 3000 x 1500  
 4000 x 2000  
 5000 x 2500  
 6000 x 3000

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2500 x 1250 x 65mm  
 5000 x 2500

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2000 x 1000 x 70mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

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2000 x 1000 x 75mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500  
 8000 x 2000

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2000 x 1000 x 80mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500  
 8000 x 2000

2000 x 1000 x 90mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

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2000 x 1000 x 100mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

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2000 x 1000 x 110mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

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2000 x 1000 x 115mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

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2000 x 1000 x 120mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

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2000 x 1000 x 125mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

2000 x 1000 x 130mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

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2000 x 1000 x 140mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

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2000 x 1000 x 150mm  
 2500 x 1250  
 4000 x 2000  
 5000 x 2500

# Pressure Vessel Grades

BS 1501-224-490B LT50 BS 1501-223-490B LT50 ASME SA516 GR60/65/70

BS EN 10028 P355 NL1 BS EN 10028 P460 NL1

## Fully Killed Steel Plates

12000 x 2500 x 6mm	12000 x 3000 x 16mm	12000 x 3000 x 32mm	10000 x 2500 x 70mm
12000 x 2500 x 8mm	12000 x 3460	12000 x 3000 x 35mm	9000 x 3000
12000 x 3000	12000 x 4000	12000 x 3460	10000 x 2500 x 75mm
12000 x 2000 x 10mm	12000 x 3000 x 18mm	12000 x 4000	6000 x 3000
12000 x 2500	12000 x 2000 x 20mm	12000 x 3000 x 40mm	10000 x 2500 x 80mm
12000 x 3000	12000 x 2500	12000 x 3460	6000 x 3000
12000 x 3460	12000 x 3000	12000 x 4000	6000 x 3000 x 90mm
12000 x 4000	12000 x 3460	12000 x 2500 x 45mm	5000 x 2500 x 102mm
12000 x 2000 x 13mm	12000 x 4000	12000 x 3000	6000 x 3000
12000 x 2500	12000 x 3000 x 22mm	12000 x 3000 x 50mm	5500 x 2750 x 115mm
12000 x 3000	12000 x 3460	12000 x 2500 x 55mm	5500 x 2750 x 120mm
12000 x 3460	12000 x 4000	12000 x 3000	5500 x 2750 x 140mm
12000 x 4000	12000 x 2000 x 25mm	12000 x 2500 x 60mm	5500 x 2750 x 150mm
12000 x 2000 x 16mm	12000 x 2500	12000 x 3000	5500 x 2750 x 160mm
10000 x 2500	12000 x 3000	12000 x 2500 x 65mm	3000 x 3000 x 175mm
	12000 x 3460		3000 x 3000 x 200mm
	12000 x 4000		

PRESSURE VESSEL  
CHROME MOLYBDENUM

BOILER QUALITY

VERY HIGH YIELD &  
ABRASION RESISTANT

HIGH YIELD



## RELIABLE PIPES & TUBES LTD.

### Chrome Molybdenum

ASME SA387 Gr22 CL2 ASME SA387 GR11 ASME SA387 GR12  
EN10028 10CRMO 9-10 EN 10028 13CRMO 45  
BS 1501 - 620B BS 1501 - 621B BS 1501 - 622B

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12000 x 2500 x 6mm
12000 x 2500 x 8mm
12000 x 2500 x 10mm
12000 x 2500 x 12mm
12000 x 2500 x 15mm
12000 x 2500 x 16mm
12000 x 2500 x 20mm
12000 x 2500 x 25mm

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12000 x 2500 x 30mm
12000 x 2500 x 35mm
12000 x 2500 x 40mm
10000 x 2500 x 45mm
10000 x 2500 x 50mm
10000 x 2500 x 60mm
8000 x 2500 x 70mm
8000 x 2500 x 80mm



# RELIABLE PIPES & TUBES LTD.

## Boiler Quality Steel Plates

BS 1501-161-430 A/B BS EN10028 P265GH ASME SA516 GR60/65

4000 x 2000 x 3mm	12000 x 2000 x 12.5mm	12000 x 2000 x 16mm	12000 x 2000 x 22mm
8000 x 1500 x 4mm	12000 x 2500	12000 x 2500	12000 x 2500
8000 x 1500 x 5mm	12000 x 3000	12000 x 3000	12000 x 3000
8000 x 2000	12000 x 3460	12800 x 3200	12000 x 3460
8000 x 2000 x 6mm	12000 x 4000	12000 x 3460	12000 x 4000
10000 x 2500	12000 x 2000 x 13mm	12000 x 4000	12000 x 2000 x 25mm
12000 x 3000	12000 x 2500	12000 x 2500 x 18mm	12000 x 2500
12000 x 2000 x 8mm	7500 x 3000	12000 x 3000	7500 x 3000
10000 x 2500	12000 x 3000	12000 x 3460	10000 x 3000
12000 x 3000	12800 x 3200	12000 x 2000 x 20mm	12000 x 3000
12000 x 2000 x 10mm	12000 x 3460	12000 x 2500	12000 x 3460
10000 x 2500	12000 x 2000 x 15mm	7500 x 3000	12000 x 4000
12000 x 3000	12000 x 2500	12000 x 3000	12000 x 3000 x 28mm
12800 x 3200	12000 x 3000	12800 x 3200	12000 x 2000 x 30mm
12000 x 3460	12000 x 3460	12000 x 3460	12000 x 2500
12000 x 4000		12000 x 4000	12000 x 3000
			12000 x 3460

BOILER QUALITY

VERY HIGH YIELD &  
ABRASION RESISTANT

HIGH YIELD



## RELIABLE PIPES & TUBES LTD.

### Boiler Quality Steel Plates

BS 1501-161-430 A/B BS EN10028 P265GH ASME SA516 GR60/65

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8000 x 2000 x 32mm	8000 x 2000 x 70mm
12000 x 3000	6000 x 2500
8000 x 2000 x 35mm	8000 x 2000 x 75mm
10000 x 2500	6000 x 2500
12000 x 3000	8000 x 2000 x 80mm
8000 x 2000 x 40mm	6000 x 2500
10000 x 2500	6000 x 2500 x 90mm
10000 x 3000	6000 x 3000
12000 x 3000	6000 x 3000 x 100mm
8000 x 2000 x 45mm	5000 x 3000 x 110mm
10000 x 2500	4000 x 2000 x 115mm
9000 x 3000	4500 x 3000
8000 x 2000 x 50mm	4000 x 2500 x 120mm
10000 x 2500	4000 x 2000 x 130mm
7500 x 3000	4000 x 3000
5000 x 2500 x 57mm	3500 x 3000 x 140mm
6000 x 2500 x 60mm	3500 x 3000 x 150mm
6000 x 3000	3500 x 3000 x 160mm
8000 x 2000 x 65mm	4000 x 2000 x 175mm
6000 x 2500	4000 x 2000 x 200mm



# RELIABLE PIPES & TUBES LTD.

## Ultra High Yield Steel Plate

TO EN 10137 S700MC PAS 700 RAEX 700  
YMPRESS E690

### 690N/mm<sup>2</sup> High Yield Cold Forming Steel Plate

2500 x 1250 x 3mm	6000 x 1500 x 5mm
6000 x 1250	12000 x 1500
8000 x 1250	2500 x 1250 x 6mm
3300 x 1280	6000 x 1500
12000 x 1250 x 4mm	12000 x 1500
6000 x 1250	12000 x 1500 x 8mm
3000 x 1500	12000 x 1500 x 10mm

## High Yield Quenched & Tempered Steel Plate

RQT 701 / EN 10025: PART 6 2004 S690 QL

### 690N/mm<sup>2</sup> High Yield Quenched & Tempered Steel Plate

12000 x 2500 x 6mm	6000 x 2500 x 45mm
12000 x 2500 x 8mm	6000 x 2500 x 50mm
12000 x 2500 x 10mm	6000 x 2500 x 60mm
12000 x 2500 x 12mm	6000 x 2500 x 65mm
12000 x 2500 x 15mm	6000 x 2500 x 70mm
12000 x 2500 x 20mm	6000 x 2500 x 80mm
12000 x 2500 x 25mm	4000 x 2000 x 90mm
12000 x 2500 x 30mm	4000 x 2000 x 100mm
10000 x 2500 x 32mm	4000 x 2000 x 110mm
12000 x 2500 x 35mm	4000 x 2000 x 120mm
8000 x 2500 x 40mm	



## RELIABLE PIPES & TUBES LTD.

### Supralsim 690

5000 x 2500 x 90mm*	4000 x 2000 x 130mm†
5000 x 2500 x 100mm†	4000 x 1500 x 140mm†
5000 x 2500 x 110mm†	5000 x 2000 x 150mm†
5000 x 2500 x 120mm†	4000 x 2000 x 160mm†
	4000 x 2000 x 200mm†

\* 650 N/mm<sup>2</sup>

† 630 N/mm<sup>2</sup>

### Abrasion Resistant Steel Plate

#### XAR 400 / ABRAZO 400 / FORA 400

3000 x 1500 x 3mm	12000 x 2500 x 25mm
6000 x 2500 x 4mm	12000 x 2500 x 30mm
6000 x 2500 x 5mm	12000 x 2500 x 35mm
6000 x 2500 x 6mm	12000 x 2500 x 40mm
12000 x 2500 x 8mm	8000 x 2500 x 45mm
12000 x 2500 x 10mm	8000 x 2500 x 50mm
12000 x 2500 x 12.5mm	8000 x 2500 x 60mm
12000 x 2500 x 15mm	8000 x 2500 x 70mm
12000 x 2500 x 20mm	8000 x 2500 x 80mm
12000 x 3000	



# RELIABLE PIPES & TUBES LTD.

## High Yield Steel Plate

BS EN 10025 PART 2 S355 : 2004 : JO / JR / J2 / K2

### Normalised and Impact Tested at -20°C

10000 x 2500 x 6mm	10000 x 3000 x 35mm
10000 x 3000 x 8mm	14500 x 3250
10000 x 2500 x 10mm	10000 x 2500 x 40mm
10000 x 3000	10000 x 3000
10000 x 2500 x 12.5mm	14500 x 3250
10000 x 3000	10000 x 2500 x 50mm
14500 x 3250	8500 x 3000
10000 x 2500 x 15mm	10000 x 2500 x 60mm
10000 x 3000	8000 x 3000
14500 x 3250	6000 x 2500 x 65mm
10000 x 3000 x 16mm	6000 x 2500 x 70mm
10000 x 2500 x 20mm	6000 x 2500 x 75mm
10000 x 3000	6000 x 2500 x 80mm
14500 x 3250	6000 x 2500 x 90mm
10000 x 2500 x 25mm	5000 x 2500 x 100mm
10000 x 3000	4500 x 2500 x 115mm
14500 x 3250	4000 x 2500 x 130mm
10000 x 2500 x 30mm	3500 x 2500 x 140mm
10000 x 3000	3400 x 2500 x 150mm
14500 x 3250	3000 x 2500 x 160mm





## RELIABLE PIPES & TUBES LTD.

### BS 7191 355EM

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10000	x	3000	x	6mm
10000	x	3050	x	8mm
10000	x	3050	x	10mm
10000	x	3050	x	12.5mm
10000	x	3050	x	15mm
10000	x	3050	x	20mm
10000	x	3050	x	25mm
10000	x	3050	x	30mm

10000	x	3050	x	35mm
10000	x	3050	x	40mm
10000	x	3050	x	50mm
10000	x	3050	x	60mm
6000	x	3050	x	75mm
6000	x	3050	x	80mm
6000	x	3050	x	90mm
6000	x	3050	x	100mm



# RELIABLE PIPES & TUBES LTD.

## Conversions

### Length

miles: kilometres	1.6093
yard: metres	0.9144
feet: metres	0.3048
inches: millimetres	25.4
inches: centimetres	2.54

### Area

miles <sup>2</sup> : kilometres <sup>2</sup>	2.59
miles <sup>2</sup> : hectares	2.58.999
acres: metres <sup>2</sup>	4046.86
acres: hectares	0.4047
yards <sup>2</sup> : metres <sup>2</sup>	0.8361
feet <sup>2</sup> : metres <sup>2</sup>	0.0929
feet <sup>2</sup> : centimetres <sup>2</sup>	929.03
inches <sup>2</sup> : millimetres <sup>2</sup>	645.16
inches <sup>2</sup> : centimetres <sup>2</sup>	6.4516

### Volume

yards <sup>3</sup> : metres <sup>3</sup>	0.7646
feet <sup>3</sup> : metres <sup>3</sup>	0.0283
inches <sup>3</sup> : centimetres <sup>3</sup>	16.3871

### Capacity

gallons: litres	4.546
US gallons: litres	3.785
quarts: litres	1.137
pints: litres	0.568
gills: litres	0.142

### Velocity

mph: kmph	1.6093
feet p/s: metres p/s	0.3048
feet per minute: metres p/s	0.0051

### Weight

tons: kilograms	1016.05
tons: tonnes	1.0160
hundredweights: kilograms	50.8023
quarters: kilograms	12.7006
stones: kilograms	6.3503
pounds: kilograms	0.4536
ounces: grams	28.3495

### Fuel Consumption

gallons per mile: litres per km	2.8250
miles per gallon: lm per litre	0.3540

### Tyre Pressures

Lb/sq	18	20	22	24	26	28	30	32	34	36
Bars	1.3	1.4	1.6	1.7	1.8	2.0	2.1	2.3	2.4	2.5

### Temperature Conversion

temp in °C:	$(5 \div 9) \times (\text{temp in } ^\circ\text{F} - 32)$
temp in °F:	$(9 \div 5) \times (\text{temp in } ^\circ\text{C} + 32)$