

Australian Pressure Vessel Standard AS 1548 – the changes

The revision to the Australian Pressure Vessel Standard AS 1548 (Standard) has resulted, most significantly, to changes of the grade designations used within the Standard. Consequently, new XLERPLATE® steel grades will be introduced to the custom and standard ranges to eventually replace the existing pressure vessel grades.

BlueScope Steel will continue to offer pressure vessel grades in accordance with both the 1995 and 2008 versions of the Standard for some time. The revised grades have already been introduced to the XLERPLATE® steel custom range. Revised grades in the XLERPLATE® steel standard range will be introduced in November – December 2010.

Within this brochure, you will find information about the changes from the 1995 version to the 2008 version of the Standard, as well as additional technical information. If you require any further information regarding the changes, please refer to the contact details on the flipside of this brochure.

The Australian Pressure Vessel Standard AS 1548 has undergone a major revision which has resulted in significant changes



Changes to the AS 1548 Pressure Vessel Standard

1. Reasons for the change

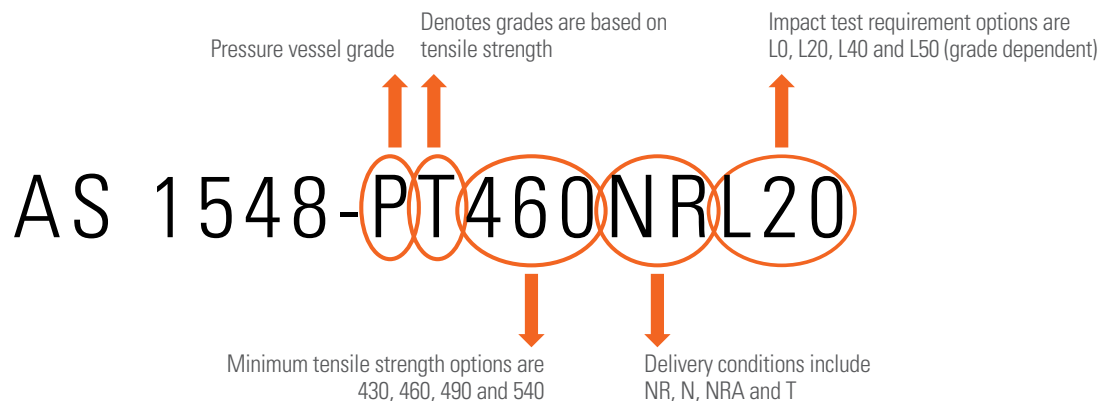
- Improved alignment between Australian and ISO/EN Standards
- Improved guidance regarding specification of steel in design
- Provides a definition of fine-grained steels
- Provides information of the effect of excessive stress relieving
- Enables increased confidence in toughness of all grades supplied in accordance with the Standard

2. Summary of key changes

- Change to grade designations
- Removal of 5 and 7 class designations
- Introduction of normalised rolled grades
- Further alignment with ISO/EN Standard
- All grades have some level of charpy impact testing
- Tighter Carbon and Carbon equivalent limits
- Niobium limit increase from 0.025% to 0.030% for grades L20 and below
- Introduction of a new high strength grade: AS 1548-PT540T

3. Grade designation changes

Following is an explanation of the nomenclature used in the 2008 AS 1548 Standard:



The table below shows the 1995 grade designations and their 2008 equivalent.

Grade Designations	
1995	2008
AS 1548-7-430R & A	AS 1548-PT430NR
AS 1548-7-430T	AS 1548-PT430T (5mm only)
AS 1548-7-460N	AS 1548-PT460N
AS 1548-7-460R	AS 1548-PT460NR
AS 1548-7-460A	AS 1548-PT460NRA
AS 1548-7-460T	AS 1548-PT460T
AS 1548-7-490N & 5-490N	AS 1548-PT490N
AS 1548-7-490R	AS 1548-PT490NR
AS 1548-7-490A & 5-490A	AS 1548-PT490NRA
AS 1548-7-490T	AS 1548-PT490T
No equivalent	AS 1548-PT540T

4. Explanation of delivery conditions

(NR) Normalised rolling

A rolling process in which the final deformation (rolling pass) is carried out in a certain temperature range that produces a material condition equivalent to that obtained after normalising. Normalised rolling replaces the (R) and (A) interchangeability clause of the 1995 version of the Standard.

(N) Normalising

The heat treatment process undertaken after rolling where XLERPLATE® steel is heated between 870 – 930°C. Normalised grades (N) may be replaced by normalised rolled (NR) grades with agreement between the purchaser and the manufacturer.

(NRA) designated grades

Grades with an (NRA) supply condition in the 2008 Standard replace grades with an (A) designation from the 1995 Standard. Grades with an (NRA) supply condition are supplied in the 'as rolled' condition, but with tests carried out on normalised and stress relieved test pieces. The fabricator MUST normalise or hot form grades with (NRA) designations to ensure the steel meets the required properties. Failure to carry out normalising or hot forming on (NRA) grades may mean that the XLERPLATE® steel fails to meet the requirements of the Standard.

(T) Thermo-mechanical controlled rolling (TMCR)

A rolling process in which a significant amount of deformation takes place at temperatures below the normalising range, leading to a fine grain structure. TMCR is used to achieve improved strength and toughness with relatively low CEQ chemistries. TMCR is not suitable for hot forming at temperatures >620°C as this may adversely affect the properties of the steel. (T) rated XLERPLATE® steel is not generally suitable for hot forming.

For comprehensive information on delivery conditions, refer to the Technical Support section at www.xlerplate.com.au

5. Changes to the 490 MPa strength grades

- The 2008 version of the Standard has removed the 5 or 7 options (eg. AS 1548-7-490R and AS 1548-5-490N) that were previously available in the 1995 version of the Standard
- Strength levels in the new Standard are equivalent to the former 5-490N grade
- The 2008 Standard allows (NR) and (T) delivery condition options – the previous Standard only allowed (N) for the 5-490 type grade

6. Standard pressure vessel range

Tables below show grade designations to be introduced in November – December 2010.

AS 1548-PT430T		
Thickness (mm)	Width (mm)	Length (m)
5	2400	9.0
AS 1548-PT460NR		
6	3100	9.6
8	3100	9.6
10	3100	9.6
12	3100	9.6
16	3100	9.6
20	3100	9.6

AS 1548-PT460NR		
Thickness (mm)	Width (mm)	Length (m)
25	3100	9.6
32	2400	9.6
40	2400	9.6
50	2400	7.6
60	2400	6.0
70	2400	6.0
80	2400	5.2
90	2400	5.2
100	2400	5.2

For comprehensive pressure vessel size information, refer to www.xlerplate.com.au or download the XLERPLATE® Size Schedules

Introduction of the revised AS 1548 Pressure Vessel Standard grades

The Australian Pressure Vessel Standard AS 1548 (Standard) was revised in 2008 and this has resulted in a number of significant changes. The following provides customers with more detailed information regarding the revision of the Standard.

When will BlueScope Steel introduce the 2008 version of the Standard into XLERPLATE® steel pressure vessel grades?	The revised grades have been introduced to the XLERPLATE® steel custom range. Revised grades in the XLERPLATE® steel standard range will be introduced in November – December 2010.
Will the grades from the 1995 version of the Standard be available after the introduction of the 2008 version?	BlueScope Steel will continue to supply XLERPLATE® steel pressure vessel grades in accordance with the 1995 version of the Standard for a period of time. In most cases, there will be a grade available in the 2008 version of the Standard that is equivalent to one from the 1995 version.
What size range will be available in grades made to the 2008 version of the Standard?	The product dimensions in the 2008 version on the Standard will not differ substantially from those available in the 1995 version. Refer XLERPLATE® Size Schedules .
Will the mechanical or chemical properties of the new 2008 grades differ from those in the 1995 version of the Standard?	The grades in both versions of the Standard will be very similar however, there will be slight differences in mechanical and chemical properties. Details can be obtained by referencing the Standard or by contacting BlueScope Steel Direct.
If I order via www.bluescopesteelconnect.com will I need to make any changes to my orders?	When ordering grades from the 1995 version of the Standard, no changes are required. However, grades/sizes ordered from the 2008 version of the Standard will have to be placed manually the first time you place an order.
If I order by phone or fax will I need to make any changes to my orders?	As the grade designations are changing in the 2008 version of the Standard, you will need to order by new grade names. Please discuss with XLERPLATE® Customer Service. Orders for grades from the 1995 version of the Standard will not have to be changed.
Will new datasheets be available for grades in the 2008 version of the Standard?	Yes – new datasheets are available and can be downloaded from www.xlerplate.com.au

BLUESCOPE STEEL DIRECT

For general enquires:

Free call 1800 800 789

Fax 1800 800 744

XLERPLATE® CUSTOMER SERVICE

For order management enquires:

Free call 1300 135 004

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Email xlerplate@bluescopesteel.com

For more information please refer to the Technical Support section at www.xlerplate.com.au

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