

Information regarding the requirements of the Pressure Equipment Directive 2014/68/EU.

Dovre Sertifisering AS

GUIDELINE

GL-DSE-2020-007 Acceptance of using TR2000 and ASME under PED 2014/68/EU
LOW TEMPERATURE CARBON STEEL (CSLT), impact tested

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1. Materials included in this document

Standard	Grade	Form
A333	6	Pipe
API 5L	X52 (PLS2 S and -SAW)	Pipe
A671	CC60; CC70	Pipe
A420	WPL6	Pipe fittings
A860	WPHY X52	Pipe fittings
A350	LF2	Forging
A694	F52	Forging
A516	60	Plate
A516	70	Plate

2. Properties for allowable stress

Allowable stresses within the applicable temperature range are defined in ASME B31.3 for each material grade (Table A-1). The following exceptions on this are A860 WPHY X52 and A694 F52 the values used for these materials are given in API 5L X52.

3. Temperature and toughness

These materials require ISO Charpy V impact testing -46°C as by the MDS. For lower temperatures Table A-1 and Chapter III of ASME B31.3.

The maximum operating temperature of these grades is $+400^{\circ}\text{C}$ or according to table A-1 ASME B31.3 if this indicates a lower maximum temperature.

The minimum requirements for charpy V impact testing are given for all materials thus fulfilling the requirements of the Directive.

4. Welding and NDT

If materials are used for welding there are restrictions with respect to C, S, P and the defined CE found in EN13480.

The weldability is sufficient.

Welding procedures and operators

Directive 2014/68/EU §3.1.2 requires that for equipment in Category II, III and IV the operating procedures and operators are qualified by a recognised third-party organisation within the European Community or a Notified Body. Dovre Sertifisering AS has Notified Body number 2654.

NDT personnel

Directive 2014/68/EU §3.1.3 requires that NDT personnel is qualified. For pressure equipment in categories III and IV, the personnel shall be approved by a third-party organisation recognised by a Member State pursuant to article 20.

5. Ductility

The Directive 2014/68/EU §7.5 requires a steel sufficiently ductile. Elongation after rupture is no less than 14 % at a temperature not higher than the lowest scheduled operating temperature.

All the specified materials have minimum ductility exceeding 14% thus, fulfilling the Directive 2014/68/EU ductility requirements

6. Forming

The bending radius shall not be less than 3 times the outer pipe diameter. This is required to reduce the risk for strain ageing.

No restrictions are given for the Nitrogen and the lower limit for Nitrogen binding elements. Cold forming is possible for the pipe materials in this document.

Flange rating according to ASME B16.5, ASME B16.47 (A/B) and NORSOK L-005.
Grouping 1.1

7. Documentation and marking

The inspection documentation in accordance with EN 10204:2004 is specified in the MDS. All MDS's require marking of the material ensuring full traceability to the melt including heat treatment and data sheet.

The requirements in the Directive 2014/68/EU are found fulfilled.

8. Abbreviations

C	Carbon
S	Sulphur
P	Phosphorous
CE	Carbon Equivalent
NDT	Non-Destructive Testing
MDS	Material Data sheet