

Data Sheet: A7.2

Liquid petroleum gas cylinder steel

Hot Rolled Coil for Welded Liquid Petroleum Gas Cylinders

General description

ArcelorMittal South Africa supplies steel suitable for the manufacture of two-piece and three-piece welded liquid petroleum gas (LPG) cylinders.

This product was developed for moderate stretching and drawing operations. The high elongation allows the material to be formed easily without failure. The low carbon content contributes to the ease of fabrication, which includes excellent weldability.

Steel making

The steel is aluminium treated to ensure a fine grain structure and made by the continuous casting process. This produces steel that is eminently suitable for deep drawing applications, in particular for LPG cylinders.

All LPG steel is currently produced to EN 10120 P265NB. Other qualities may be available on enquiry.

Chemical composition

Table 1. Chemical composition specification (ladle analysis, percent)

Grade	C Max	Mn Min	Si max	P max	S max	Al Min.
EN 10120 P265NB	0,19	0,40	0,25	0,025	0,015	0,02

In order to assist users in determining fabrication parameters, the typical chemical compositions used to achieve the desired mechanical properties are given in Table 2:

Table 2. Typical chemical composition (ladle analysis, percent)

Grade	C	Mn	Si	P	S	Al
EN 10120 P265NB	0,16	1,00	0,03	0,015	0,005	0,040

Mechanical properties

Although the steel is usually supplied in the as rolled condition, the tensile test is carried out on a test piece normalised at 900° C with soaking time of two minutes per millimetre thickness, after which it is allowed to cool in still air.

For further information, contact:

ArcelorMittal South Africa Limited, PO Box 2, Vanderbijlpark 1900. Toll free number 0800 005043, Fax (016) 889-0070
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Care has been taken to ensure that the information in this data sheet is accurate. ArcelorMittal South Africa Limited does not, however, assume responsibility for any inaccuracies or misinterpretations of this data. We are continuously engaged in product development and revised data sheets will be issued from time to time. Please ensure that you have the most recent issue. **Effective date: May 2020**

Because the cooling conditions that exist in a completed cylinder during the normalising treatment are different from those in a tensile test piece, the tensile values obtained for a test piece cut from a completed cylinder may differ from those given on the test certificate and users must allow for this variation when specifying values which must be submitted to standards authorities.

Table 3. Mechanical properties

Grade	Minimum yield strength (MPa)	Tensile ¹ strength (MPa)	Minimum elongation (for thicknesses t) (%)	
			t < 3 (L ₀ = 80 mm)	3 ≤ t ≤ 5 (L ₀ = 5,65 S ₀)
EN 10120 P265NB	265	410 - 500	24	32

Notes:

1. Tensile test to EN 10 002 Part 1.

In order to assist users in determining fabrication parameters, the typical mechanical properties obtained on the normalised test pieces for 2,2 mm thick material are given in the table below:

Table 4. Typical mechanical properties for 2,5 mm thick material

Grade	Yield strength (MPa)	Tensile strength ¹ (MPa)	Elongation (L ₀ = 5,65 S ₀) (%)
EN 10120 P265NB	325	465	34

Notes:

1. Tensile test to EN 10 002 Part 1 (1990).

Dimensions

This grade of steel is available in the dimensions indicated in the data sheet: Hot Strip Mill Product Dimensions (file reference A1.1).

Dimensional tolerances

Refer to the data sheet: Hot Strip Mill Product Tolerances (file reference A1.2).

Certification

All material described in this data sheet is supplied with test and analysis certificates.

Supply conditions

All material described in this data sheet is supplied in terms of Price List 121 and ArcelorMittal South Africa's General Conditions of Sale.

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