

Data Sheet: A2.1

General purpose and commercial steels

Hot Rolled Steel Plate and Coil for General Applications

General description

The commercial steel specifications are suitable for general engineering applications where moderate forming, bending and drawing are involved. These steels are produced to analysis specifications as described in Tables 1 and 2. The commercial steels are **not** recommended for drawing applications or structural applications where the mechanical properties of the steel are of paramount importance.

These steels are readily weldable using normal arc welding processes with the normal precautions.

The specifications that are available are: ArcelorMittal South Africa's Commercial Quality (CQ) and a selection of the SAE grades.

Chemical composition

1. Commercial Quality

Commercial Quality plate and coil are supplied to the following maximum values:

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

Thickness <i>t</i> (mm)	C Max	Mn Max	P Max	S Max	Si Max
<i>t</i> < 4,5	0,15	1,00	0,035	0,035	0,30
<i>t</i> ≥ 4,5	0,25	1,60	0,040	0,035	0,50

2. SAE Grades

The following SAE grades are available:

Table 2. Chemical composition specification (ladle analysis, percent)

Designation	C	Mn	P max	S max
SAE 1006	0,08 max	0,45 max	0.030	0.035
SAE 1008	0,10 max	0,50 max	0.030	0.035
SAE 1010	0,08 - 0,13	0,30 - 0,60	0.030	0.035
SAE 1018	0,14 - 0,20	0,60 - 0,90	0.030	0.035

For further information, contact:

ArcelorMittal South Africa, PO Box 2, Vanderbijlpark 1900. Toll free number 0800 005043

Care has been taken to ensure that the information in this data sheet is accurate. ArcelorMittal South Africa 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: December 2015

Mechanical properties

Commercial steels are not produced to specific mechanical property requirements. **No minimum or maximum values on any mechanical properties such as yield strength, tensile strength, hardness, elongation or impact toughness are guaranteed.**

Bending Properties

Sheet material (from Hot Rolled coil) thinner than 3,0 mm should be capable of being bent flat on itself in any direction through 180° at room temperature without cracking on the outside of the bend portion. Sheet material (from Hot Rolled coil) thicker than 3,0 mm should pass a bend test with a mandrel diameter equal to 3 times the plate thickness.

Plate material (5mm and thicker) should pass a bend test with a mandrel diameter equal to 3 times the plate thickness when tested to EN ISO 7438.

Note:

The bend test is performed on specially prepared test pieces. Conditions during fabrication may be more severe and are not simulated by the laboratory test. In fabrication, the diameter of bending should be as generous as possible and knife-edges, burrs, flame cut edges, etc. should be avoided.

Dimensions

The dimensions in which plate mill products are available are described in the data sheet: Plate Mill Dimensions (file reference A1.3). The dimensions in which hot strip mill products are available are described in the data sheet: Hot Strip Mill Product Dimensions (file reference A1.1 and A1.7).

Tolerances

Hot rolled commercial steel plate and coil are produced to the tolerances specified in the data sheets: Plate Mill Product Tolerances (file reference A1.4) and Hot Strip Mill Product Tolerances (file reference A1.2), respectively.

Certification

Commercial quality and the SAE grades are supplied with analysis certificates only.

Supply conditions

The material described in this data sheet is supplied in terms of price lists 110, 120 and 121 and ArcelorMittal South Africa's General Conditions of Sale.

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