

Data sheet: B2.1

## Cold Rolled Steel Sheet for General Applications

### General description

This data sheet describes the properties of Mittal Steel South Africa's Commercial Quality and a selection of available SAE/AISI grades. Cold rolled commercial steels are intended for exposed or unexposed parts where bending, moderate drawing, forming and welding may be involved. These steels may normally be welded without special precautions using any of the standard arc or resistance welding processes.

These steels can readily be painted. Refer to the paint manufacturers' prescribed methods for pre-treatment and application.

### Chemical composition

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

| Specification                               | C           | Mn          | P<br>max | S<br>max |
|---------------------------------------------|-------------|-------------|----------|----------|
| Commercial Quality                          | 0,15 max    | 1,50 max    | 0,100    | 0,060    |
| Commercial Quality<br>(Domestic Appliances) | 0,15 max    | 1,50 max    | 0,0600   | 0,040    |
| SAE/AISI 1006-'00                           | 0,08 max    | 0,25 - 0,40 | 0,030    | 0,050    |
| SAE/AISI 1008-'00                           | 0,10 max    | 0,30 - 0,50 | 0,030    | 0,050    |
| SAE/AISI 1010-'00                           | 0,08 - 0,13 | 0,30 - 0,60 | 0,030    | 0,050    |
| SAE/AISI 1012-'00                           | 0,10 - 0,15 | 0,30 - 0,60 | 0,030    | 0,050    |
| ASTM A1008-'01<br>CS Type A (HRB 40-60)     | 0,10 max    | 0,60 max    | 0,03     | 0,035    |

### Mechanical properties

#### a. Bend test

If the carbon content has a value up to and including 0,15% the steel must pass a bend test where a specially prepared specimen is bent flat on itself. There should be no readily visible cracks along any bend and cracks at the sheared edges of the specimen are disregarded.

#### For further information, contact:

Mittal Steel South Africa Limited, PO Box 2, Vanderbijlpark 1900. Toll free number 0800 005043, Fax (016) 889-0070  
e-mail address: [datasheets@mittalsa.com](mailto:datasheets@mittalsa.com)

Care has been taken to ensure that the information in this data sheet is accurate. Mittal Steel 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: October 2005

**b. Hardness**

1. At the time of shipment, the hardness of Commercial Quality will not exceed 65 Rockwell B.
2. The hardness range of ASTM A1008-'00 CS Type A (HRB 40-60) is 40 to 60 Rockwell B.
3. Since the SAE/AISI range specifies only chemical analyses, no hardness values are guaranteed.

**c. Drawability**

Steel deformation on pressed parts is assessed by means of the scribed square test as described in ASTM A568. Commercial Quality has limited drawability but should give satisfactory performance if the percentage increase in area of any drawn portion of an untrimmed part is 25 % or less. If it is more than 25%, a SUPRADRAW specification should be used. Refer to Data Sheet: SUPRADRAW CR<sup>®</sup> 170 - 210 (file reference B3.1). Since formability requirements vary it may be advisable in the case of new applications to seek Mittal Steel South Africa's advice before ordering.

**Ageing**

Commercial steels, like most other steels, are susceptible to ageing or age hardening. Refer to Data Sheet: Cold Rolled Products (file reference B1).

**Surface texture**

Commercial steels are available in 'smooth' or 'normal' surface texture as set out in Data Sheet: Cold Rolled Products (file reference B1). Other surface textures may be available on enquiry.

**Dimensions**

Table 2. Available dimensions. Commercial Quality and SAE/AISI 1006 - 1012.

| Thickness <i>t</i><br>(mm) | Width<br>(mm) |
|----------------------------|---------------|
| $0,40 \leq t < 0,50$       | 800 - 1250    |
| $0,50 \leq t < 0,60$       | 800 - 1300    |
| $0,60 \leq t \leq 2,00$    | 800 - 1800    |

Note:

1. Thicknesses and Widths are available in increments in accordance with Price List 130.

**Dimensional tolerances**

Refer to Data Sheet: Cold Rolled Product Tolerances (file reference B1.1).

**Coil inside diameter**

The standard inside diameter is 508mm (610mm on enquiry).

**Corrosion prevention**

Refer to Data Sheet: Cold Rolled Products (file reference B1).

**Certification**

An analysis certificate is supplied.

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## Supply conditions

Cold rolled commercial steel sheet is supplied in terms of Price List 130 and Mittal Steel South Africa's General Conditions of Sale.

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