

Data sheet: B3.1.1

Cold Rolled Steel Sheet for Drawing and Forming

Drawing quality CR[®] 210

General Description

Cold rolled steel sheet for drawing and forming applications is produced by Mittal Steel South Africa.

The DRAWING QUALITY CR[®] 210 specification may be welded by most standard welding processes.

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

The DRAWING QUALITY CR[®] 210 grade compare with other international specifications as follows:
Table 1. Equivalent specifications

Applicable standards	Deep Drawing
Mittal Steel South Africa	DRAWING QUALITY CR [®] 210
EN 10130	DC04
DIN 1623	St14

Chemical composition

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

Specification	C max	Mn max	P max	S max	Si max	Al min
DRAWING QUALITY CR [®] 210	0,08	0,40	0,030	0,030	0,03	0,015

Mechanical properties

Table 3. Mechanical properties (4) in the skin passed condition.

Specification	Maximum yield strength ¹ (Mpa)	Tensile strength (MPa)	Minimum elongation ² (%)	Bar r ³	Bar n ³	r ₉₀ ³	n ₉₀ ³
DRAWING QUALITY CR [®] 210	210	270 - 350	38	-	-	1,6 min	0,18 min

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

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

Notes:

1. When the thickness t is $0.5\text{mm} < t \leq 0.7\text{mm}$ the value for the yield strength is increased by 20 MPa. For thicknesses $t \leq 0.5\text{mm}$ the value is increased by 40 MPa.
2. When the thickness t is $0.5\text{mm} < t \leq 0.7\text{mm}$ the minimum value for the elongation is reduced by 2 percentage points. For a thickness $t \leq 0.5\text{mm}$ the minimum value is reduced by 4 percentage points.
3. The values of r_{90} and n_{90} or Bar r and Bar n only apply for thicknesses $0.6 \leq t < 1.2\text{mm}$. The Bar r values and Bar n values for thicknesses $t \geq 1.2\text{mm}$ are available on enquiry.
4. For design purposes the lower limit of yield strength for DRAWING QUALITY CR[®] 210 may be assumed to be 140 Mpa.
5. The tensile test is carried out as described in EN 10002 Part 1 using type 2 specimens (initial gauge length $L_0 = 80\text{mm}$). Yield strength is determined by the 0,2% off-set method. The test pieces are taken perpendicular to the direction of rolling.

Strain ageing

The DRAWING QUALITY CR[®] steel is stabilised and therefore guaranteed to be strain ageing resistant for a period of six months from the time of despatch. No deterioration in mechanical properties or ductility due to strain ageing will take place during this period.

Temper rolling

All steels are normally supplied in the temper rolled (skin passed) condition.

Surface texture

DRAWING QUALITY CR[®] material may be supplied in standard surface texture with 'light matt', 'normal' or 'matt' surfaces as set out in Data Sheet: Cold Rolled Products (file reference B1).

Dimensions

Table 4. Available dimensions.

Thickness t (mm)	Width (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

Notes:

1. Thicknesses and Widths are available in increments in accordance with Price List 130.
2. Within the ranges shown in the above table, certain specific sizes are Standard Items (refer to Price List 130). Standard Items are preferentially priced and are available in smaller quantities than non-standard items.

Dimensional tolerances

Tolerances on shape and dimensions are given in Data Sheet: Cold Rolled Product Tolerances (file reference B1.1).

Coil inside diameter

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

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Corrosion prevention

Unless adequately protected, cold rolled sheet is susceptible to corrosion, and customers are advised to take precautions as set out in Data Sheet: Cold Rolled Products (file reference B1).

Certification

Test and analysis certificates are supplied.

Supply conditions

DRAWING QUALITY CR[®] 210 is supplied in terms of Price List 130 and Mittal Steel South Africa's General Conditions of Sale.

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