

Data sheet: C2.2

## Tinplate: DWI

### DWI electrolytically coated tinplate

#### General description

DWI tinplate is single reduced cold rolled steel substrate, electrolytically coated with tin, and produced from continuously cast steel specifically for the manufacture of two-piece drawn and wall ironed cans.

As far as possible, DWI tinplate coils are produced to suit the customer's process. Customers are therefore advised to consult Mittal Steel South Africa in order to obtain material that will best suit their purposes.

#### Chemical Analysis (substrate)

Table 1. Chemical composition of substrate (ladle analysis, percent)

Specification	C max	Mn max	P max	S max	Si max
TS 240 (DWI-Beverage)	0,08	0,40	0,020	0,022	0,03
TS 280 (DWI-Food)	0,04	0,30	0,020	0,022	0,04

#### Mechanical properties

A number of different mechanical properties may be determined for tin mill products, however, no single mechanical test can measure all the factors which may affect fabrication characteristics.

For DWI material, the test that is considered to provide the best guide to mechanical properties is the tensile test.

Table 2. Tensile guide

Specification	Yield / 0.2% Proof Stress (MPa)		Tensile Strength (MPa)		Annealing route
	Nominal	Tolerance	Nominal	Tolerance	
TS 240 (DWI-Beverage)	240	± 40	350	± 40	Batch
TS 280 (DWI-Food)	285	± 45	380	± 40	Continuous

#### Surface finish

Light grit, un-reflowed surface finish (aim surface roughness of 0,65 to 1,15µm R<sub>a</sub>) is applied.

For further information, contact:

Mittal Steel South Africa Limited, PO Box 2, Vanderbijlpark 1900. Toll free number 0800 005043, Fax (016) 889-0070  
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## Tin coatings

Tin coatings which are used for DWI material are determined after consultation with the customers.

## Passivation

A passivation treatment is applied to increase the resistance of the tin coating to tarnishing. The following treatments are available:

- a. **Passivation code 311:** A cathodic sodium dichromate treatment with a nominal chromium level in the range of 4 to 9 mg/m<sup>2</sup> per surface (This is available from No 1 Electrolytic Tinning line only).  
This passivation coating is normally utilised for DWI Food Can Stock.
- b. **Passivation code 300:** A sodium dichromate chemical treatment with a nominal chromium level in the range of 1 to 3 mg/m<sup>2</sup> per surface.  
This passivation coating is normally utilised for DWI Beverage Cans.

## Oiling

In order to reduce chafing between wraps, DWI tinplate is oiled with dioctyl sebacate (DOS) with a nominal coating of 2,0 to 6,0mg/m<sup>2</sup> per side. Because the oil is of an unstable nature and reacts with the tin coating, the thickness of the oil layer cannot be verified after a lapse of 24 hours from the time of application.

## Dimensions

TABLE 3. Available dimensions

Specification	Thickness (mm)	Width (mm)
TS 240 (DWI-Beverage)	0,24 - 0,33	778 - 1032
TS 280 (DWI-Food)	0,29 - 0,31	936

## Coil inside diameter

Tinplate coils are supplied with an inside diameter of 420mm +0-6mm.

## Dimensional tolerances

### 1. Thickness

Thickness is measured by micrometer (hand or continuous reading). No reading will deviate from nominal by more than +3 or -3 %.

The difference in thickness between points 6mm and 75mm from an edge should not exceed 0,008mm.

### 2. Width

Deviation from the specified width will not exceed -0+3mm at any point for side trimmed material.

### 3. Shape

The coil will be suitable for unimpaired feeding into the cupper.

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## Supply conditions

### SITA

DWI tinplate is supplied in SITA (Systeme Internationale Tinplate Area). One SITA consists of 100 square metres of tinplate.

$$\text{Formula: } \frac{\text{Coil length (m)} \times \text{ordered width (m)}}{100} = \text{SITA}$$

### Mass

DWI material is supplied in terms of Price List 155 with Mittal Steel South Africa's General Conditions of Sale applying

### Lap welds

Cutting and rejoining operations are unavoidable during coil production. Lap welds will therefore be present to maintain optimum coil masses and will be flagged and marked by means of a punched hole, 15 to 50 mm from the lap weld. There will be a maximum of two welds per coil.

### Inner and outer wraps

Freedom from mechanical damage on the outer and inner wraps, within 10 meters of each end is not guaranteed.

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