

# COLD ROLLED FULL HARD (UNANNEALED) PRODUCTS (CRFH STEELS)

Date updated: 02 December 2016



**Duferco**  
Duferco Steel Processing

# COLD ROLLED FULL HARD STEELS – COLD ROLLED UNANNEALED/AS-ROLLED

Cold rolled full hard steel (CRFH) is a product that is supplied directly after cold-reduction rolling, without any annealing to soften the steel. This product is utilized for applications that do not require any formability beyond very limited bending and /or roll forming. The product contains small amounts of residual cold rolling oil on the surface.

## 1. Product Data

Material:	Mild Steel Grade commercial quality CRFH
Coil weight range:	15.0 - 25.0 mt (for gauges <0.30mm; 0.0118", maximum of 8mt will be supplied)
Specific Coil Weight:	18 kg/mm
Maximum Coil OD:	1880 mm
Coil ID:	508 mm (610mm available by request)
Surface finish:	Bright to semi bright (0.25 – 0.75 Ra; 10 – 30 micro inches)

## 2. HRC Qualities available

SAE J403 1006 & SAE J403 1008 (certifies chemical composition only)

JIS G3141 SPCC1

## 3. Product dimensional tolerances and surface characteristics (only applicable to JIS G3141 specification)

### 3.1. Thickness tolerance (mm)

Nominal thickness (t),mm	Tolerances for a nominal width (w),mm		
	630 ≤ w < 1000	1000 ≤ w < 1250	1250 ≤ w < 1600
t < 0.25	±0.03	±0.03	
0.25 ≤ t < 0.40	±0.04	±0.04	
0.40 ≤ t < 0.60	±0.05	±0.05	±0.06
0.60 ≤ t < 0.80	±0.06	±0.06	±0.06
0.80 ≤ t < 1.00	±0.06	±0.07	±0.08
1.00 ≤ t < 1.25	±0.07	±0.08	±0.09
1.25 ≤ t < 1.60	±0.09	±0.10	±0.11
1.60 ≤ t < 2.00	±0.11	±0.12	±0.13

### 3.2. Width tolerance

Width (w),mm	Tolerances (mm)	
	Lower	Upper
$w < 1250$	0	7
$w \geq 1250$	0	10

**Stricter width tolerances may be agreed upon on enquiry**

### 3.3. Surface characteristics

**3.3.1.** The product shall be free from defects detrimental to further processing.

**3.3.2.** The product shall be suitable for further processing, such as coating process or annealing process.

4. Mechanical properties (only applicable to JIS G3141 SPCC1 designation)

**4.1.** The minimum Rockwell B hardness will be 85 HRB.

5. Test Certificates/reports

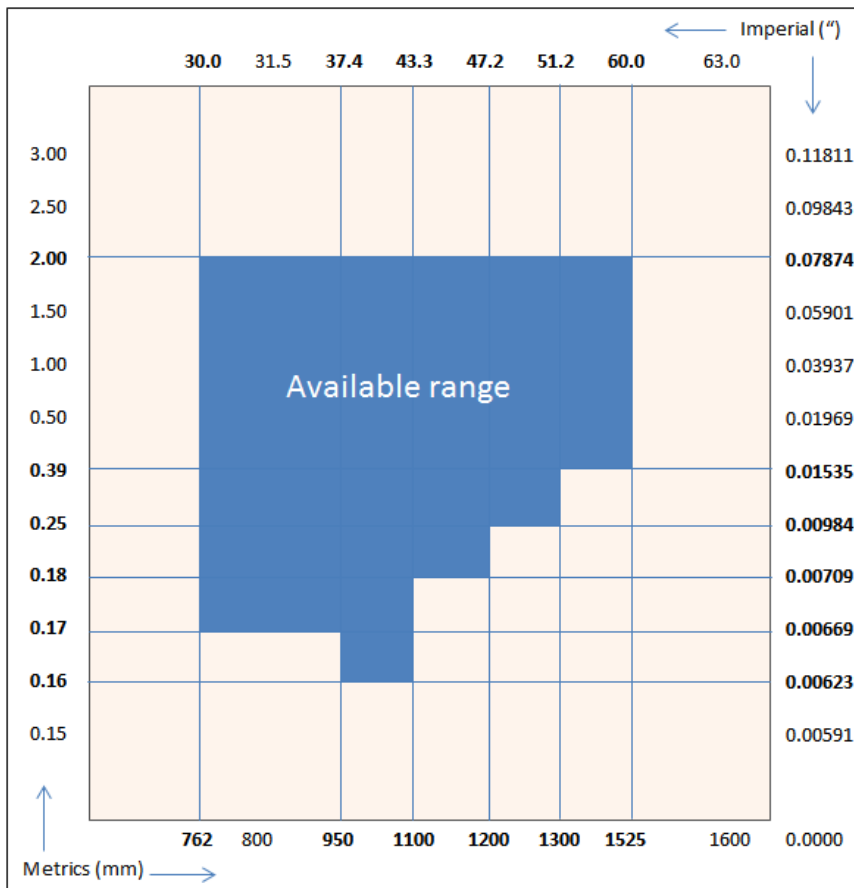
**5.1.** Test certificate accompanies each final product produced and may be supplied to the Customer on enquiry; as prescribed by EN 10204:2004 Type 3.1 specification standard.

**5.2.** Information available on the test certificates / reports:

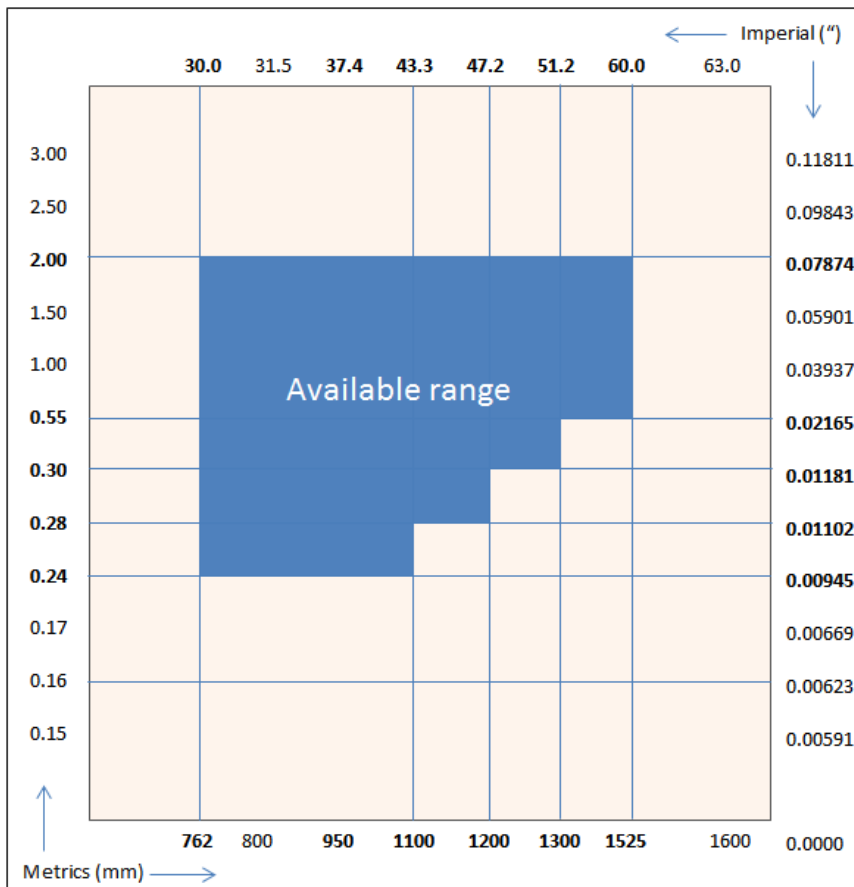
- Customer order detail
- Material quality
- Material identification number
- Dimensional characteristics
- Chemical composition
- Mechanical properties results (only for JIS G3141 SPCC1 designation)
- Net mass (Mt)

6. Applicable product dimension range (based on JIS G3141 nominal gauge)

6.1.SAE J403 1006 & JIS G3141 SPCC1



6.2.SAE J403 1008



**7. Additional information when ordering cold rolled full hard material**

- 7.1.** The product may include off-gauge and unrolled portion coil ends; a request may be made to remove the off-gauge ends in order to facilitate processing through the customer' operations.
- 7.2.** Typical unrolled portion and off-gauge portion is approximately 12 meters and 20 meters; respectively (for coils with tail-end cut back to gauge).
- 7.3.** Oil residue: less than 300 mg/m<sup>2</sup>
- 7.4.** Iron fines: less than 50 mg/m<sup>2</sup>
- 7.5.** Flatness profile is controlled within a maximum of 25 I-units.
- 7.6.** Steel sleeves may be added to the ID when nominal gauges of less than or equal to 0.30mm (0.0098") for coils with no unrolled portions on the ID.