



ArcelorMittal

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Sestao

## UD steels "hot rolled" (Direct Use)

The UD PRODUCTS (Direct Use products) range brings another concept in the use of Hot Rolled Black steel in low thicknesses, reducing the limitations for its DIRECT USE and eliminating the preparation steps.

The thickness reduction capability and control of the CSP mill together with shape control possibilities of the pickling line allow to provide this UD PRODUCTS range which stands out from classical flat hot rolled products.

These qualities are manufactured from more than 60% of high quality recycled steel.

### Properties

Guaranteed flatness in coil, Restricted and/or asymmetric thickness tolerances, Minimum thickness deviation along the length of the coil, Good profile control, Improved surface aspect due to final inspection, Coil ends cropping (head and tail), Wide range of qualities available, Steels suitable as substrates for coating processes and transformations.

### Advantages

> **Higher output** due to a reduction of material loss, coil head and tail cropping is not necessary, and a reduction of scrap in edge trimming processes in slitting lines. Higher metres / transformed tonnes ratio.

> **Higher productivity** due to the reduction of de-coiling times and the threading to the lines, the reduction of leveller setup times due to the product reproducibility and the improvement of the slitting line speed reliability allowing to get the maximum working speed and making the sheets stacking operation easier, improving the final packing quality.

> **Finished Product Reliability** (Sheets and Strip). These steels are virtually free of internal stresses and coil break, have a minimised out-of-squareness (perfect rectangle formed by the ordered width and length dimensions can be superimposed into the sheets delivered) and an improved surface aspect.

These three factors are key for Cost Reduction but other advantages can be added in the work environment such as:

- Employee safety improvement due to the reduction of lines manual handling.
- Improvement of handling operations due to the uniformity of coil edges and the lack of telescopicity.

### Applications

Leading sectors where industrial operation automation is very important.



Jacques Van den Bergh

### ArcelorMittal Sestao's offer

Direct Use Steels (UD) are available only Hot Rolled Black.

Thickness range varies from 1,00 mm to 2,00 mm depending on the grade.

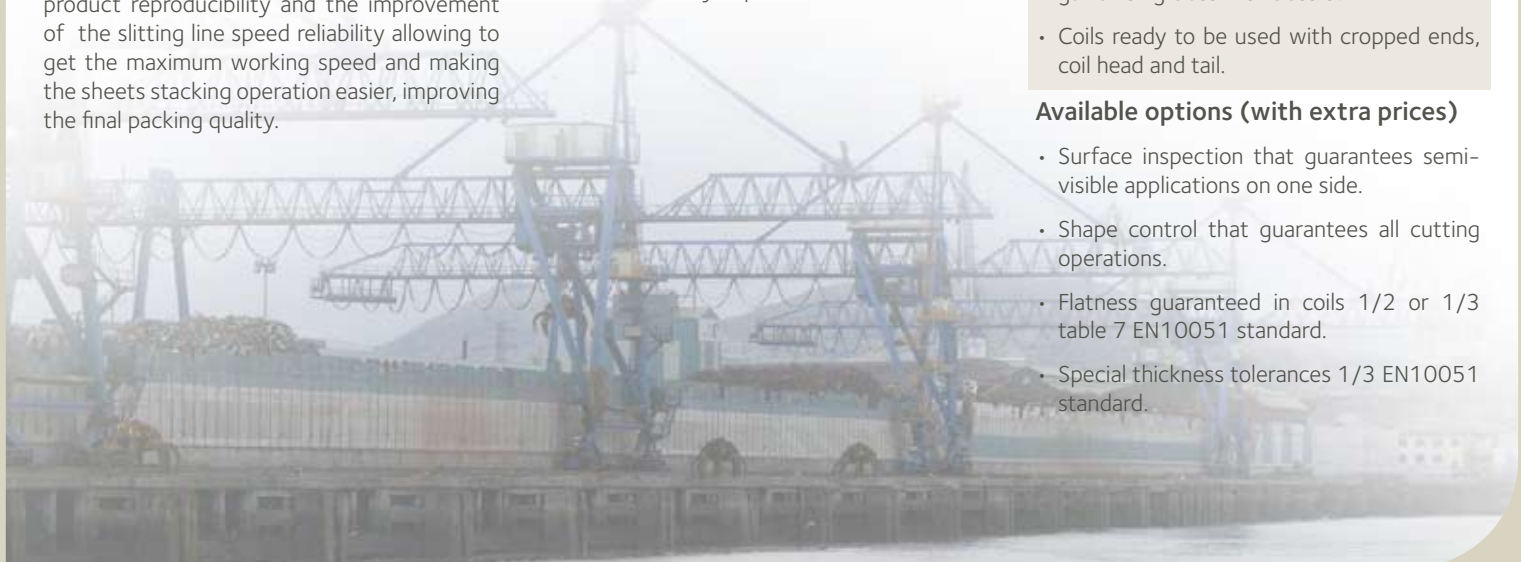
Available qualities represent a wide range under continuous development.

#### Basic Offer

- Guaranteed flatness in coils 2/3 table 7 EN10051 standard.
- Restricted tolerances on thickness 1/2 EN10051 standard (by default) or Asymmetric tolerances on thickness 2/3 EN10051 (must be specified on the order).
- Chemical analysis that guarantees galvanising class 1 or class 3.
- Coils ready to be used with cropped ends, coil head and tail.

#### Available options (with extra prices)

- Surface inspection that guarantees semi-visible applications on one side.
- Shape control that guarantees all cutting operations.
- Flatness guaranteed in coils 1/2 or 1/3 table 7 EN10051 standard.
- Special thickness tolerances 1/3 EN10051 standard.



## Qualities

Drawing	Structural Steels	High Strength Low Alloy Steels	High Strength Low Alloy Steels	Atmospheric Corrosion Resistant Steel
ACB 11 UD	ACB 235 Jx UD	ACB 280 UD	ACB 460 UD	ACB S355 J2W UD
ACB 12 UD	ACB 275 Jx UD	ACB 315 UD	ACB 500 UD	
ACB 13 UD	ACB 355 Jx UD	ACB 355 UD	ACB 550 UD	
		ACB 380 UD		
		ACB 420 UD		

## Dimensions

### COLD FORMING AND DRAWING STEELS

Thickness (mm)	Min width	ACB 11 UD	ACB 12 UD	ACB 13 UD
		Max width		
$1,00 \leq th \leq 1,19$	845	1020	-	-
$1,20 \leq th \leq 1,29$		1250	1020	1020
$1,30 \leq th \leq 1,34$			1350	1350
$1,35 \leq th \leq 1,49$				
$1,50 \leq th \leq 1,79$				
$1,80 \leq th \leq 1,99$		1550	1550	1550
2,00				

### STRUCTURAL STEELS

Thickness (mm)	Min width	ACB 235 Jx UD	ACB 275 Jx UD	ACB 355 Jx UD
		Max width		
$1,10 \leq th \leq 1,34$	845	1020	-	-
$1,35 \leq th \leq 1,39$			1275	
$1,40 \leq th \leq 1,49$		1400		1280
$1,50 \leq th \leq 1,79$				1550
$1,80 \leq th \leq 1,99$				
2,00				

### HIGH STRENGTH LOW ALLOY STEELS

Thickness (mm)	Min width	ACB 280 UD	ACB 315 UD	ACB 355 UD	ACB 380 UD	ACB 420 UD	ACB 460 UD	ACB 500 UD	ACB 550 UD
		Max width							
$1,10 \leq th \leq 1,19$	845	1020	1020	1020	-	-	-	-	-
$1,20 \leq th \leq 1,34$		1275	1275	1250					
$1,35 \leq th \leq 1,49$					1300	1300	1275	1275	
$1,50 \leq th \leq 1,79$		1020							
$1,80 \leq th \leq 1,89$		1270							
$1,90 \leq th \leq 1,99$		1300	1250						
2,00		1550	1550	1550	1390	1350	1370		

### ATMOSPHERIC CORROSION RESISTANT STEEL

Thickness (mm)	Min width	ACB S355 J2W UD
		Max width
$1,50 \leq th \leq 1,79$	845	1250
$1,80 \leq th \leq 1,99$		1280
2,00		1500

## Mechanical Properties

Guaranteed according to EN quality standard

## Chemical Properties

Based on cast analysis data

### COLD FORMING AND DRAWING STEELS

	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Al (%)	B (%)	Galvanisation
ACB 11 UD	≤0,070	≤0,35	≤0,024	≤0,020	≤0,030	≥0,018	-	Class 1
ACB 12 UD	≤0,060	≤0,30	≤0,020	≤0,020	≤0,030	≥0,018	≤0,010	Class 1
ACB 13 UD	≤0,060	≤0,30	≤0,020	≤0,020	≤0,030	≥0,018	≤0,010	Class 1

### STRUCTURAL STEELS

	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Al (%)	Nb (%)	V (%)	Galvanisation
ACB 235 Jx UD	≤0,070	≤0,40	≤0,025	≤0,020	≤0,030	≥0,018	≤0,008	≤0,008	Class 1
ACB 275 Jx UD	≤0,075	≤0,70	≤0,025	≤0,020	≤0,030	≥0,015	≤0,025	≤0,010	Class 1
ACB 355 Jx UD	≤0,190	≤1,20	≤0,025	≤0,020	≤0,030	≥0,018	≤0,012	≤0,010	Class 1

### HIGH STRENGTH LOW ALLOY STEELS

	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Al (%)	Nb (%)	V (%)	Galvanisation
ACB 280 UD	≤0,070	≤0,40	≤0,025	≤0,015	≤0,030	≥0,015	≤0,005	≤0,015	Class 1
ACB 315 UD	≤0,070	≤0,40	≤0,025	≤0,015	≤0,030	≥0,015	≤0,005	≤0,040	Class 1
ACB 355 UD	≤0,070	≤0,40	≤0,025	≤0,015	≤0,030	≥0,015	≤0,005	≤0,050	Class 1
ACB 380 UD	≤0,075	≤0,80	≤0,025	≤0,015	≤0,030	≥0,015	≤0,025	≤0,045	Class 1
ACB 420 UD	≤0,075	≤0,80	≤0,025	≤0,015	≤0,030	≥0,015	≤0,030	≤0,050	Class 1
ACB 460 UD	≤0,075	≤0,80	≤0,025	≤0,015	≤0,030	≥0,015	≤0,030	≤0,090	Class 1
ACB 500 UD	≤0,070	≤0,90	≤0,025	≤0,015	≤0,030	≥0,015	≤0,030	≤0,110	Class 1
ACB 550 UD	≤0,070	≤1,15	≤0,025	≤0,015	≤0,030	≥0,015	≤0,050	≤0,135	Class 1

### ATMOSPHERIC CORROSION RESISTANT STEEL

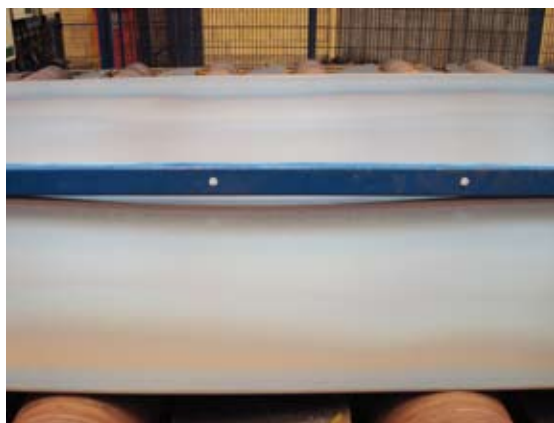
	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Al (%)	Cu (%)	Ni (%)	Cr (%)	Galvanisation
ACB 355 J2W UD	≤0,075	≤1,00	≤0,030	≤0,020	≤0,500	≥0,020	≤0,550	≤0,550	≤0,800	Class 3



## TOLERANCES ON FLATNESS FOR STRETCHED LEVELLED COILS

Flatness must be measured on sheets not subjected to any levelling process

Nominal Thickness (mm)	Nominal Width (mm)	Normal Flatness Tolerance (mm) 2/3 EN10051	Restricted Flatness Tolerance (mm) 1/2 EN10051	Special Flatness Tolerance (mm) 1/3 EN10051
≤2,00	≤1200	12	9	6
	>1200 and ≤1500	13	10	7
	>1500	17	13	9



Before Stretch Levelling process.



After Stretch Levelling process.



Coil with uncropped ends.



Coil with cropped ends.