

Technical Data Sheet  
TDS-07-82

## Robusta® Medium 2D Swing Gate

### 1 Scope

This technical data sheet specifies requirements for Robusta® Medium swing gates with Nylofor® 2D infill.

The gate consists of different components:

- Gate posts with quick fix fence connection system (Hinge and latch post)
- Wing with welded Nylofor® 2D infill panel
- Accessories (Hinges, lock-system, ground bolt)

There are 2 types: Single Robusta® Medium swing gates (figure 1) and double Robusta® Medium swing gates (figure 2).

Robusta® Medium swing gates are CE labelled, in accordance with EN 13241-1.



**Figure 1: Single Robusta® Medium swing gate**

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**Figure 2: Double Robusta® Medium swing gate**

### **1.1 Normative References**

- EN 13241-1: Industrial, commercial and garage doors and gates - Product standard - Part 1: Products without fire resistance or smoke control characteristics.
- EN 10219-1: Cold formed welded structural hollow sections of non-alloy and fine grain steels – Part 1: technical delivery conditions.
- ISO 16120-2: Non-alloy steel wire rod for conversion to wire – Part 2: Specific requirements for general purpose wire rod.
- ISO 1461: Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods.
- ISO 22034-2: Steel wire and wire products - Part 2: Tolerances on wire dimensions.
- EN 10223-7: Steel wire and wire products for fences - Part 7: Steel wire welded panels – for fencing.
- ISO 9227: Corrosion tests in artificial atmospheres; salt spray tests.
- ISO 16474-3: Paints and varnishes – Methods of exposure to laboratory light sources – Part 3: Fluorescent UV lamps.

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## Robusta® Medium 2D Swing Gate

### 1.2 Definitions

- Nominal wire diameter: The diameter in mm to designate the wire.
- Real wire diameter: The average value of the minimal and the maximal diameter, measured in the same section of a straight piece of wire, by means of a micrometer accurate to 0,01 mm.
- Mesh sizes: The distance measured between the centres of two neighbouring wires.

## 2 Raw materials

### 2.1 Steel used for the posts and wing frame

The posts and wing frame are made out of construction steel: Type S235 JRH class 1, in accordance with EN 10219-1.

### 2.2 Wire rod used for the Nylofor® 2D infill panels

Chemical composition: See table 1

<b>Table 1 : Chemical composition</b>	
Element	%
C	≤ 0,10
Si	≤ 0,30
Mn	≤ 0,70
P	≤ 0,035
S	≤ 0,035

The designation of the wire rod is based on grade C9D or C7D – ISO 16120-2.

### 2.3 Zinc (Zinc used for hot dip galvanisation bath)

In accordance with ISO 1461.

### 2.4 Polyester

The polyester is free from Lead and Cadmium.

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## Robusta® Medium 2D Swing Gate

### 3 Properties

#### 3.1 Dimensions and tolerances

##### 3.1.1 Wing and posts

See tables 2 and 3:

**Table 2: Dimensions Robusta® Medium Swing Gates**

SINGLE SWING GATES

Width	Height	Gate post	Distance between posts	Free passage	Center-center C-C	Sapcode RAL 6005	Sapcode RAL 7016	Hot dip galvanized
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			
1000	X 800	60 x 60 x 2 x 1400	1030	930	1090	7052001	7052010	7052094
	X 1000	60 x 60 x 2 x 1600	1030	930	1090	7052002	7052012	7052095
	X 1200	60 x 60 x 2 x 1800	1030	930	1090	7052004	7052013	7052096
	X 1400	80 x 80 x 2 x 2000	1030	930	1110	7052005	7052015	7052097
	X 1600	80 x 80 x 2 x 2200	1030	930	1110	7052006	7052018	7052098
	X 1800	80 x 80 x 2 x 2400	1030	930	1110	7052007	7052019	7052099
	X 2000	80 x 80 x 2 x 2600	1030	930	1110	7052008	7052020	7052100
1500	X 800	60 x 60 x 2 x 1400	1550	1450	1610	7052056	7052071	7052101
	X 1000	60 x 60 x 2 x 1600	1550	1450	1610	7052065	7052072	7052102
	X 1200	60 x 60 x 2 x 1800	1550	1450	1610	7052066	7052073	7052103
	X 1400	80 x 80 x 2 x 2000	1550	1450	1630	7052067	7052074	7052104
	X 1600	80 x 80 x 2 x 2200	1550	1450	1630	7052068	7052075	7052105
	X 1800	80 x 80 x 2 x 2400	1550	1450	1630	7052069	7052076	7052106
	X 2000	80 x 80 x 2 x 2600	1550	1450	1630	7052070	7052077	7052107

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**Table 3: Dimensions Robusta® Medium Swing Gates**

DOUBLE SWING GATES								
Width	Height	Gate post	Distance between posts	Free passage	Center-center C-C	Sapcode RAL 6005	Sapcode RAL 7016	Hot dip galvanized
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			
3000	X 800	60 x 60 x 2 x 1400	3070	2930	3130	7052078	7052085	7052108
	X 1000	60 x 60 x 2 x 1600	3070	2930	3130	7052079	7052086	7052109
	X 1200	60 x 60 x 2 x 1800	3070	2930	3130	7052080	7052087	7052110
	X 1400	80 x 80 x 2 x 2000	3070	2930	3150	7052081	7052088	7052111
	X 1600	80 x 80 x 2 x 2200	3070	2930	3150	7052082	7052091	7052112
	X 1800	80 x 80 x 2 x 2400	3070	2930	3150	7052083	7052092	7052113
	X 2000	80 x 80 x 2 x 2600	3070	2930	3150	7052084	7052093	7052114
4000	X 1000	80 x 80 x 2 x 1600	4110	3970	4190	7064323	7064329	7064335
	X 1200	80 x 80 x 2 x 1800	4110	3970	4190	7064324	7064330	7064336
	X 1400	80 x 80 x 2 x 2000	4110	3970	4190	7064325	7064331	7064337
	X 1600	80 x 80 x 2 x 2200	4110	3970	4190	7064326	7064332	7064338
	X 1800	80 x 80 x 3 x 2400	4110	3970	4190	7064327	7064333	7064339
	X 2000	80 x 80 x 3 x 2600	4110	3970	4190	7064328	7064334	7064340

Frame section of the wing: 40 x 40 x 1,5 mm

All other dimensions and tolerances are specified in the corresponding technical drawings, available on request.

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### 3.1.2 Panel

The bright Nylofor® 2D infill panel is welded on the inside of the gate frame before hot dip galvanising.

The panel is cut and welded at the individual wires.

#### 3.1.2.1 Wire diameters and tolerances

See table 4:

<b>Table 4: Wire diameters and tolerances (Before galvanising)</b>		
	Horizontal wire (mm)	Vertical wire (mm)
Nylofor® 2D infill panel	5,50 ± 0,05	4,50 ± 0,05

The tolerances in accordance with ISO 22034-2, class T3.

#### 3.1.2.2 Tensile strength of the wires

Vertical and horizontal wires: Min. 500 N/mm<sup>2</sup>.

#### 3.1.2.3 Mesh sizes

Mesh sizes: The distance measured between the centres of two neighbouring wires.

See table 5 :

<b>Table 5 : Mesh sizes and tolerances</b>	
Distance between the horizontal wires	200 ± 4,0 mm
Distance between the vertical wires	50 ± 3,0 mm

The tolerances are in accordance with the European standard EN 10223-7.

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### 3.1.2.4 Weld shear strength

Weld shear strength is tested on four welds selected at random from one transverse wire of the panel.

The minimum average weld shear strength value meets the required 50% of the breaking strength of the wire as per EN 10223-7.

### 3.1.2.5 Panel dimensions

Height of the panel: See technical drawing.

Tolerance on the panel height:  $\pm 2$  mm

Width of the panel: See technical drawing.

Tolerance on the panel width:  $\pm 2$  mm

All other dimensions are specified in the corresponding technical drawings, available on request.

## 4 Coating

### 4.1 Metallic coating

Wing with welded infill panel and posts are hot dip galvanized according ISO 1461.

Article and its thickness	Local coating thickness (minimum) <sup>a</sup>	Local coating mass (minimum) <sup>b</sup>	Mean coating thickness (minimum) <sup>c</sup>	Mean coating mass (minimum) <sup>d</sup>
	$\mu\text{m}$	$\text{g}/\text{m}^2$	$\mu\text{m}$	$\text{g}/\text{m}^2$
Steel > 6 mm	70	505	85	610
Steel > 3 mm to $\leq$ 6 mm	55	395	70	505
Steel $\geq$ 1,5 mm to $\leq$ 3 mm	45	325	55	395
Steel < 1,5 mm	35	250	45	325
Castings $\geq$ 6 mm	70	505	80	575
Castings < 6 mm	60	430	70	505

An excellent corrosion protection is obtained through the thick layer of zinc covering the entire surface, including the cutting edges and the welds of the fabrication. Inherent to this process is the possible appearance of some visual surface roughness.

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### 4.2 Polyester coating

#### Thickness polyester coating:

The total layer is minimum 60 µm thick.

The polyester thickness is the average of 10 measurements done over 1 gate wing / post.

**Standard colour:** Green RAL 6005 and RAL 7016.

Other standard colours are available and can be found in the technical data sheet TDS-99-03. (Polyester coating).

#### Adhesion:

Make two scratches by means of a hard metal pointed graving tool, penetrating through the metal and intersecting at an angle of  $30^\circ \pm 5^\circ$ . Lift a  $30^\circ$  peak with the point of a knife.

The coating shall not be able to be lifted from the metal by more than 5 mm.

#### Resistance of the polyester to saltspray:

Make a diagonal cross by means of a hard metal pointed graving tool, penetrating through the metal. Test in accordance with ISO 9227. After 1000 h there shall be no corrosion beneath the polyester or loss of adhesion in excess of 10 mm from the diagonals.

**Resistance against UV:** In accordance with ISO 16474-3.

After 1000 h QUV and after washing with pure water, the colour difference, expressed as  $\Delta E^*$  is maximum 3.

Loss of gloss: After 1000 hours max. 50 % of the original one, measured after being washed with pure water.

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### 5 Accessories

#### 5.1 Hinges

##### Hinges:

The hinges are adjustable.

The hinges are made out of hot dip galvanized steel.

The hinges allow the gate leaves to open up to 90° in the opening direction.

Hinge 160 mm is used in combination with post sections 60 x 60 and 80 x 80 mm.



**Figure 3**

For wing profiles with dimensions 40 x 40 x 1,5 mm:

At the bottom and top of the horizontal wing tube close to posts, there is a cap mounted with reinforced aluminium and plastic.

(See figure 4)

In the middle of the aluminium profile there is a hole for mounting the adjustable hinge in it.



**Figure 4**

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## Robusta® Medium 2D Swing Gate

### 5.2 Quick fix fence connection system

#### Quick fix fence connection system:

The quick fix fence connection system is made out of stainless steel, quality 304, number 1.4301 in accordance with EN 10088-3.



**Picture 1: Quick fix fence connection system**

### 5.3 Ground bolt

#### Ground bolt:

For double swing gates, the ground bolt is mounted by means of a "plug connection" which allows invisible installation.

The ground bolt is made out of construction steel and afterwards hot dip galvanized in accordance with ISO 1461.

The housing is made from Aluminium and afterwards polyester coated in the colour of the gate. Standard colours: RAL 6005 and RAL 7030.



**Picture 2: Ground bolt with housing**

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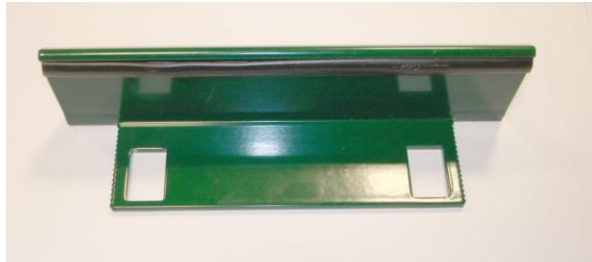
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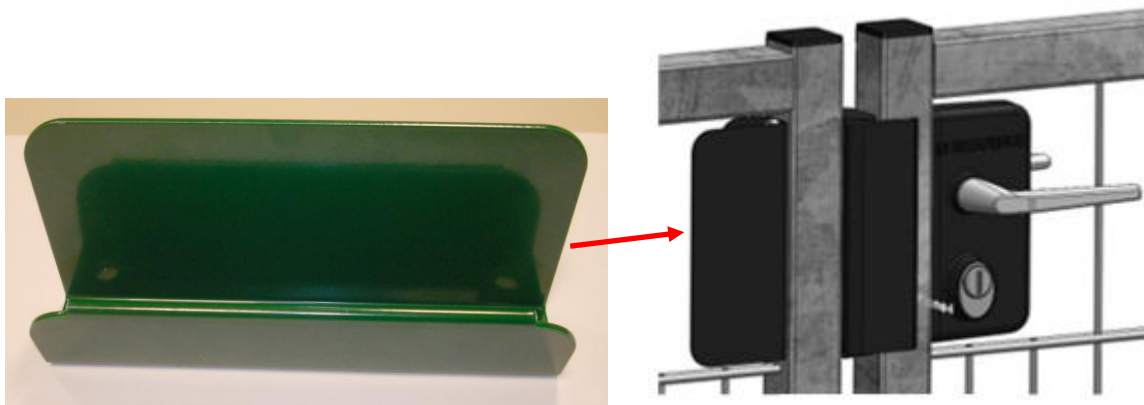
### 5.4 Slamplate

#### Slamplate:

Type Secura: Standard colours RAL 6005 and RAL 7030



**Picture 3: Slamplate used for single and double Robusta® Medium 2D swing gate**



**Picture 4 and figure 5: Pull box, only used for double Robusta® Medium 2D swing gate**

The anchoring system is made out of stainless steel.  
The lock receiver is made out of aluminium

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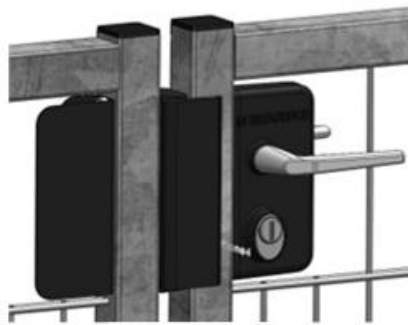
### 5.5 Lock system

#### Lock System:

The lock is not adjustable.  
The lock is supplied with aluminium handles and 2 keys.  
The 25 mm long night pin, assures secured locking.

All metal parts of the lock system are made out of stainless steel or coated steel to assure good corrosion resistance.

Standard colours: RAL 6005 and RAL 7030.



**Figure 6: Lock system**

### 5.6 Post cap

#### Post cap:

On each post there is black HDPE – standard, weatherproof and UV-resistant plastic cap mounted.

Dimensions: 60 x 60 or 80 x 80 mm according to the dimensions of the gate posts.



**Figure 7: Post cap**

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## Robusta® Medium 2D Swing Gate

### 6 Packaging

Each gate is wrapped with shrink foil and separately packed on a wooden pallet.  
See picture below.



**Picture 5**

Dimensions of the wooden pallets: 1200 x 1150, 1600 x 1560 and 1600 x 2100 mm.

Each gate is delivered with a separate accessory box.

Each gate is foreseen with a product identification label, mentioning: See picture 6

- Production order number
- Sapcode
- Description gate type
- Colour
- Quantity

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**Picture 6: Position of the product identification label**

## 7 CE-marking and Declaration of Performance

### CE-marking and Declaration of Performance

These gates are provided with a **CE label**. This means Betafence guarantees the gate has been **produced** following the **CE Regulations**, as specified in the EU Construction Products Regulation (N° 305/2011).

A specific **Declaration of Performance** (DoP) is available for this type of gate with number DoP- Beta-011. The number is written on the CE label and the contents of this Declaration of Performance can be consulted and printed from the web page:

<https://www.betafence.com/en/ce-documentation>

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