

### 1 General

This document sets out the specifications and test methods used at our company for the production and surface treatment of twin wire panels 8-6-8 and 6-5-6.

The twin wire panels we manufacture are welded from bright wires and are then hot dip galvanised and in some cases given a polyester powder coating. All production processes carried out under our own quality management and checked in our own laboratories.

#### 1.1. Uses for Twin Wire Panels

The twin wire panels can be used in the following market sectors:  
(The level of security does of course depend in part on the pole and the pole-mat connection).

##### **TWP 8-6-8, 50 x 200 mm mesh.**

- Airports
- Military sites
- Prisons
- Public / governmental buildings
- Railway tracks, shunting sites and stations
- Sport stadiums and sports fields
- Industrial sites
- Private sector

##### **TWP 6-5-6, 50 x 200 mm mesh.**

- Airports
- Public / governmental buildings
- Railway tracks, shunting sites and stations
- Sport fields
- Industrial sites
- Private sector
- DIY shops and garden centres

### 2 References of standards applied

The following internal and European standards are used on a day-to-day basis:

- |                    |   |
|--------------------|---|
| • EN 10223-7:2002  | Steel wire and wire products for fences- part 7 steel wire welded panels for fencing  |
| • EN 10218-2:2012  | Steel wire and wire products – General part 2: Wire dimensions and tolerances   |
| • EN10244-2:2009:  | Steel wire and wire products – Nonferrous metallic coatings on steel wire – Zinc or Zinc alloy coatings                     |
| • EN ISO 1461      | Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods                         |
| • ISO 12944-2:1998 | Paints and Varnishes – Corrosion protection of steel structures by Protective paint systems – Classification of Environment |

- ISO 12944-6:1998                      Paints and Varnishes – Corrosion protect of steel structures by protective paint systems – Laboratory test methods
- ISO 6270-1:2001                      Paints and varnishes – Resistance to Humidity
- ISO 4628                                  Paints and varnishes – Evaluation of degradation
- ISO 11341:2004                      Paints and varnishes – Artificial weathering and exposure to artificial radiation – Exposure to filtered xenon-arc radiation
- ISO 9227:2012                      Corrosion test in artificial atmospheres – Salt spray tests
- Balak                                      Drawings, tolerances and weights applicable to the TWP 8-6-8 & 6-5-6 produced by Balak.
- Balak                                      Internal quality manual
- Balak                                      Internal quality control system for thermal galvanisation + polyester powder coating of double rod mats

### **3            Raw materials**

#### **3.1.        Wire rod**

The purchased wire rod is obtained from certified suppliers in the quality B 10 or ST37. The wire rod must have a minimum and a maximum Si value specifically for the application of hot dip galvanisation.

#### **3.2.        Zinc**

The zinc that is processed meets the requirements of ISO 1461, with the exception of layer thickness.

#### **3.3.        Polyester powder coating**

The polyester powder coating bears a 'QUALICOAT' label, guaranteeing the highest industrial standard.

### **4            Production of the double rod mat**

Balak conducts all processes, such as wire drawing, the cutting and straightening of bars and the welding of the twin wire panel under its own management. The standards referred to under point 2 are operated.

#### **4.1.        Wire diameter + tolerances**

See annexes: Drawing, tolerances and weights of Balak twin wire panels 8-6-8 & 6-5-6

#### **4.2.        Wire strength**

Both the vertical and the horizontal bars have wire strength between 500 and 750 N/mm<sup>2</sup>.

#### **4.3. Dimensions, tolerances and weights of the overall panel, fly ends and individual mesh**

See annexes: Drawing, tolerances and weights of Balak twin wire panels 8-6-8 & 6-5-6

#### **4.4. Weld strength**

In conformity with the standard laid down in ISO 10223-7

### **5 Hot dip galvanisation of the panel**

All of our panels are hot dip galvanised in conformity with the standard ISO 1461, with the exception of the minimum zinc layer thickness in  $\mu$ . The average zinc thickness is achieved in accordance with the standard. Note: See also "Internal quality control system for hot dip galvanisation + powder coating of twin wire panels."

### **6 Polyester powder coating**

The twin wire panels that we coat in the colours RAL 6005, RAL 6009, RAL 7016 and RAL 9005 are coated with polyester powder delivered with a Qualicoat label. This guarantees the highest industrial standard.

Note: See also "Internal quality control system for hot dip galvanisation + powder coating of twin wire panels."

### **7 Delivery method**

The TWP 8-6-8 is packed per 25 panels. This applies to all refined mats. For the delivery of self color panels, these are packed per 50 panels.

The TWP 6-5-6 is packed per 30 panels. This applies to all refined mats. For the delivery of self color panels, these are packed per 60 panels.

### **8 Test protocol**

#### **8.1. Purchase of raw materials**

All purchased wire rod must be accompanied by a certificate stating the chemical and mechanical composition as agreed in advance with the supplier.

Procurement of zinc: All purchased zinc must be accompanied by a certificate stating the chemical and mechanical composition as agreed in advance with the supplier.

Procurement of powder coating all powder is accompanied by a Qualicoat certificate.

#### **8.2. Wire drawing**

At our wire drawing department we use a checklist for each drawing line for each shift. See also the annex "Checklist drawing line number 1: Morning shift" as an example. Permanent checks are also carried out on the diameter and ovality using a laser guided measurement device.

At our straitening and cutting department we use a checklist R. (No. is the machine number).

### **8.3. Twin wire panel production**

At our welding department we work with the panel production checklist. A check is carried out hourly as shown in the list. As well as the checks at the department, shear tests are also carried out at our laboratory to determine the welding shear strength.

### **8.4. Hot dip galvanisation and polyester powder coating**

See also "Internal quality control system hot dip galvanisation + powder coating of twin wire panels." Balak Coatings conducts all of the specific tests at its own laboratories. We work in accordance with the provisions of the various ISO standards.

We trust that the above will meet your information requirements.

Balak Fences N.V.

V. Riepen,  
*Head of Quality Assurance*

Annexes: upon request