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**PRETORIA METAL PRESSINGS**  
a division of Denel (Pty) Ltd

## **SPECIFICATION FOR Ø 7,5mm STAINLESS STEEL ROD BASED ON ALLOY WN 1.4104 (DIN EN10088-3)**

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AMENDMENT HISTORY SHEET

ISSUE	DETAILS	ECP No	DONE BY	DATE
1	Specification retyped in new format.	E2/047/03MC	I.P.	03-05-07
2	Change tensile strength to 700 MPa.	E2/195/04MC	I.P.	04-11-22
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## 1. SCOPE

- 1.1 This specification covers stainless steel rod alloy WN 1.4104 that conforms to this specification.

## 2. APPLICABLE DOCUMENTS

ASTM E8  
DIN EN10088-3

## 3. REQUIREMENTS

### 3.1 General material requirements

The material shall be supplied as cold drawn, soft annealed and ground rods.

### 3.2 Product characteristics

- 3.2.1 The material shall be supplied with plain ends in lengths of 3 m  $\pm$  5 cm.  
+ 0,0

- 3.2.2 The diameter shall be 7,5 mm - 0,022 mm.

- 3.2.3 The straightness deviation shall not exceed 1,5 mm/meter.

- 3.2.4 Out of roundness shall not exceed 0,01 mm.

### 3.3 Chemical, mechanical and metallurgical properties

#### 3.3.1 Chemical composition (Cast analysis)

ELEMENT	SPECIFICATION (%)
Carbon (C)	0,10 - 0,17 maximum
Silicon (Si)	1,0 maximum
Manganese (Mn)	1,50 maximum
Sulphur (S)	0,15 - 0,35 AIM : 0,22 - 0,35
Phosphorus (P)	0,040 maximum
Chromium (Cr)	15,50 - 17,50
Molybdenum	0,20 - 0,60

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3.3.2 Mechanical properties

Tensile strength: 700 MPa maximum (AIM: 680 MPa max).

3.3.3 Metallurgical properties

The material must be in the annealed condition.

3.4 Workmanship

3.4.1 The material must be free from cracks and eddy current tested in the as delivered condition.

3.4.2 Cracks, piping and porosity are not acceptable.

3.4.3 The material must be free from rust, kinks and handling marks.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection

4.1.1 Unless otherwise specified in the contract or order, the supplier is responsible for the performance of all inspection requirements as specified herein.

4.1.2 Except as otherwise specified, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements.

4.1.3 The purchaser or his representative reserves the right of inspection of Laboratory Certificates of raw materials and components used for the manufacture of the material.

4.1.4 The supplier shall be responsible for making available to the purchaser all facilities necessary if required, for inspection of the material.

4.1.5 The supplier will be responsible for the implementation of an applicable quality management system to assure the appropriate quality of the product. The purchaser reserves the right to audit the supplier's production facilities at all times to ascertain whether quality requirements are being met.

4.2 Special tests and examinations

Eddy current test for cracks.

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#### 4.3 Quality conformance inspection

##### 4.3.1 Lot information

- 4.3.1.1 A lot shall consist of one or more batches of material produced by one manufacturer in accordance with the same specifications under one continuous set of operating conditions.
- 4.3.1.2 If the quantity is such that more than one cast is required, material of the same cast shall be grouped together. Each case or bundle shall be clearly identifiable as to the relevant cast number.
- 4.3.1.3 The supplier shall ensure that all deliveries to the end user are fully traceable by lot number and that identification records be supplied to the end user to match lot numbers with inspection records.

#### 4.4 Test methods

Tensile testing:       ASTM E8.

### 5. PREPARATION FOR DELIVERY

#### 5.1 Packing

- 5.1.1 To be strapped in bundles suitable for forklift handling using 4 evenly spaced steel straps. The mass shall not exceed 1 000 kg, unless otherwise agreed between the supplier and purchaser.
- 5.1.2 In the case of an overseas supplier, the bundles shall be packed in a seaworthy condition using suitable wooden boxes secured by steel straps. The bruto mass of the strapped boxes may not exceed 2 000 kg.
- 5.1.3 If containers are used for transportation of the material, open top containers must be used. The wooden boxes must be properly stacked in the container with spaces of  $\pm 150$  mm between them.

#### 5.2 Package marking

All bundles, boxes and / or containers are to be legibly and durably marked with the following details on suitable labels:

5.2.1 Document and order number.

5.2.2 Name of supplier.

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5.3 Documentation for delivery

The following documents must be forwarded with each consignment of material:

- 5.3.1 The original specification which accompanied the order in the case of a single consignment or the final consignment of staggered deliveries.
- 5.3.2 A certificate of conformance / analysis stating all the results of the tests conducted by the supplier during manufacture and final acceptance.
- 5.3.3 Certificate of acceptance issued by the end user or his duly representative or a letter from the end user for the release of the consignment for shipment in the case of an overseas supplier.
- 5.3.4 The supplier's delivery note shall clearly state the relevant order and document number.

6. NOTES

If the supplier of the material is not the original manufacturer, the full name and address of the manufacturer must be supplied in writing with the submission of a tender.

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