

# Technical Terms of Delivery

## Scandicast SIA



Doc. no: PROC.002.2019	Prep. by: QA. Man. <i>Macay</i>	Approved by: Man.dir <i>A</i>	Rev: 0	Date: 2019.02.12	Page: 1 of 3
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### 1. SCOPE

These TTD apply as standard for deliveries of castings (cast blanks) in grey iron and ductile iron, from Scandicast SIA, hereinafter Supplier.

The terms apply to castings produced by mechanical moulding in natural sand and are a supplement to the standard EN 1559-1 General Technical conditions of delivery and EN 1559-3 Part 3: Additional requirements for iron castings.

### 2. TERMS IN ADDITION TO THESE TTD

Terms in addition to these TTD must be agreed between the Purchaser and Supplier in connection with the inquiry/quotation/order. If the Purchaser has his own standards with special requirements in addition to EN, the document must state this. The standards or relevant extracts from the standard must be sent to Supplier in such cases.

NLG 03 applies for other terms.

### 3. TECHNICAL TERMS OF DELIVERY

#### 3.1 Chemical composition

The material in the finished casting is supplied in accordance with iron grade properties in the standard agreed with the Purchaser and confirmed in our order confirmation.

If the alloy has no EN no., reference is made to Supplier material standards.

#### 3.2 Mechanical properties

Castings meet the requirements and standards specified in EN with regard to hardness, elongation, tensile strength and yield point.

If the castings are to be approved by a classification company, the requirements and standards of the classification company apply.

If the alloy is not specified in EN, Supplier material standards apply.

### 3.3 Tolerances

Castings are supplied in accordance with the standards specified in EN ISO 8062-3. Dimensional casting tolerance grade CT9. Method – Sand cast, machine moulding.

#### 3.4 Patterns provided by Purchaser

Supplier is not liable for any dimensional errors caused by pattern equipment, when this is supplied by the Purchaser. If the Purchaser wants Supplier to check the dimensions, this is done by agreement. The patterns must be marked with the relevant identification.

If the pattern equipment does not meet Supplier production requirements, any repairs will be charged to the Purchaser by agreement.

### 4. SURFACE

Castings are delivered clean from moulding and core sand. Funnel, feeders, grades and other superfluous material are removed. The castings are shot-blasted before the funnel is cut and they are grinded. Surface roughness A2-A3 level according to ISO EN 1370.

### 5. INTERNAL DEFECTS

Castings are delivered free of visible pores, blowholes and contraction cavities that may indicate internal defects.

#### 5.1 Welding repairs

By agreement with the Purchaser, Supplier is allowed to weld-repair castings.

### 6. MARKING

Unless agreed otherwise with the Purchaser or specified on drawings, Supplier marks the castings with ladle charge number in accordance with its internal routine. Transcript of ladle charge number YYMMDDXX: YY- last two digits of year of production, MM – month of production; DD – date of production; XX – ladle sequence in production per day. This is in order to ensure satisfactory traceability.

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### 7. CHECKS, TESTS AND INSPECTIONS

Via systematic quality control and a final inspection, Supplier ensures that the castings meet the requirements agreed with the Purchaser.

By agreement with the Purchaser, Supplier can carry out the following checks/tests:

#### 7.1 Chemical composition

An analysis sample is cast from the same melt as the castings. The sample is analysed by Supplier or by an accredited laboratory.

#### 7.2 Mechanical properties

Sample rods are tested by Supplier in a certified test machine or at an accredited laboratory.

The following test results can be reported:

Brinell - hardness [HBW]

Elongation (A5) [%]

Tensile strength ( $R_m$ ) [MPa]

Yield strength ( $R_{p0.2}$ ) [MPa]

Impact resistance [J]

#### 7.3 Dimension control

Dimension control report can be executed by request from the Purchaser.

#### 7.4 Ultrasonic control

Ultrasonic control can be executed by request from the Purchaser, and in accordance to 2 principals:

##### 7.4.1 Uncertified ultrasonic control

A control without any demands to the operator or/and the equipment, and which the result is to be considered as a guiding and not-guaranteed result. The control does not fulfil demands stated in different standards for this control method. Normally no inspection report/certificate is included.

##### 7.4.2 Certified ultrasonic control

A certified ultrasonic control is accomplished in accordance to EN 473, level 2 or 3. Accept criteria's must be agreed on with the Purchaser.

The result of a certified ultrasonic test will normally be compared against EN 12680-3.

The certificate of an accomplished control will follow the delivery.

#### 7.5 Liquid penetrant

A liquid penetrant control can be executed by request from the Purchaser, and in accordance to 2 principals:

##### 7.5.1 Uncertified liquid penetrant control

A control without any demands to the operator or/and the equipment, and which the result is to be considered as a guiding and not-guaranteed result. The control does not fulfil demands stated in different standards for this control method. Normally no inspection report/certificate is included.

##### 7.5.2 Certified liquid penetrant control

A certified liquid penetrant control is accomplished in accordance to EN 473, level 2 or 3. Accept criteria's must be agreed on with the Purchaser.

A certificate of an accomplished control will follow the part in a form of an inspection report.

### 8. DOCUMENTATION

#### 8.1 Certificates

By agreement with the Purchaser, the following certificates are supplied in accordance with EN 10204:2005:

Certificate	Standard
Work certificate	EN 10204-2.1
Material certificate	EN 10204-2.2
Acceptance certificate	EN 10204-3.1

EN 10204-3.2 by DNV GL / Lloyd's Register of Shipping  
ABS



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### 8.2 Concessions

If deviations are discovered, the castings are only delivered to the Purchaser by agreement. The deviation report, describing the quantity of affected items and type of defects, is sent with the castings. The castings are marked in accordance with the deviation report.

### 8.3 First Article Inspection (FAI)

In connection with the first casting and after pattern changes to serial castings and/or particularly demanding castings, a test sample is supplied by Supplier. This must be agreed with the Purchaser. The number of test samples and the scope of checks/tests are specified in the quotation/order/order confirmation.

Check/test results are sent to the Purchaser with the castings. Test samples must be approved by the Purchaser before ordinary production. The approval must be in writing.

### 8.4 Statistical control

If random sample checks are required, the standard and AQL value must be agreed with the Purchaser.

## 9. PACKING AND SHIPMENT

### 9.1 Quantity of units

Unless agreed otherwise with the Purchaser, Supplier can deliver  $\pm 10\%$  of the quantity in the order.

### 9.2 Packaging

Castings are packed on certified wooden pallets with frames according to ISPM-15. Other packaging must be agreed with the Purchaser.

### 9.3 Labelling

The shipment is labelled with the sender and the Purchaser's name and address.

A packing note is enclosed. The packing note states the article number, quantity, weight and Purchaser order number.

## 10. OBLIGATIONS AND LIABILITY

If there is no confirmed agreement between the Purchaser and Supplier, Supplier has no obligations and liability beyond these TTD and NLG 03.

## 11. ORDER AND VALIDITY OF DOCUMENTS

If any disagreement should arise on account of discrepancies between the order, order confirmation, these TTD and relevant standards, the order of validity is as follows:

1. Order confirmation
2. These TTD
3. Standards and specifications referred to in the order.