

SPECIFICATION S016			Cast Iron Buoy Mooring Sinkers	
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Revision	Date	Written by	Checked by	Approved by

1 Scope

This specification comprises the manufacture, supply, testing and inspection of cast iron buoy sinkers.

Conditions of contract and delivery requirements are covered by a separate commercial specification.

2 Reference Drawings and Standards

The Sinker and Lewis shall be sized and formed in accordance with the relevant TH Drawing(s) listed below:

Cast Iron Mooring Sinkers

Drg. No. YBD/4

Where called for all sinkers and lewis shall conform to the recommendations of the following international and British Standards:

BS EN 1561 (also identified as EN-JL1020): Founding. Grey cast irons

BS EN ISO 6892-1: Metallic materials. Tensile testing. Method of test at ambient temperature

BS EN 10083-1: Steels for quenching and tempering

BS EN ISO 6506-1: Metallic materials. Brinell hardness test. Test method.

BS 3416: Bitumen-based coatings for cold application

3 Material Specification

The main sinker block is to be Grey Cast Iron GJL-150 to BS EN 1561

The sinker bows are to be bent from solid steel bar, 28 Mn6 +QT conforming to BS EN 10083-1 or U3 to Lloyds Rules.

Tensile test pieces from both the Cast Iron and the steel are to be tested in an independent approved test house as shown in.

4 Heat Treatment

Heat treatment to be in accordance with, and meet the requirements of BS EN 10083-1 or U3 to Lloyds rules.

A Thermal history report shall be produced for the batch.

Test pieces from finished items are to have a Brinell hardness number in the range 179 – 255.

The sinker loop is to be evenly heated to 200°C so that upon pouring of the melt and cooling of the sinker undue shrinkage stresses are not set up in the cast iron.

5 Manufacture and Finish

After casting all surface slag and any surplus or rough projecting edges are to be removed and the casting left clean and true to shape. Each sinker is to have its nominal weight indicated on the upper surface of the block by figures 75mm in height, e.g. 3 tonnes, cast integral with the block.

6 Testing

Test pieces for the sinker block and loop shall be tested by an independent approved test house.

A minimum of one test piece per batch relating to a Certificate of Conformity shall be tested.

Tensile tests shall comply with BS EN ISO 6892, and a Test Report being produced in accordance with section 17.

Brinell hardness tests shall comply with BS EN ISO 6506-1, and a Test Report being produced in accordance with section 9.

Chemical and Mechanical properties must be reflected in the reports as applicable.

The weight of the sinker shall be established by the use of calibrated equipment.

Trinity House reserves the right to undertake a factory inspection of the sinkers upon completion of manufacture. The Inspector is to be given, where possible, two weeks notice prior to the commencement of any testing.

7 Marking of Sinker Loop

The nominal weight is to be cast in accordance with Drg. No. YBD/4, sheet 1.

The sinker loop shall be legibly stamped with 5mm lettering indicating the following:

Manufacturer's identification mark or symbol
Manufacturer's conformity certificate number
Date of conformity inspection

NB Trinity House reserve the right to select at random a sinker to be cross sectioned on site for detailed inspection of both the bow and integrity of the casting. This expense shall be borne by the purchaser provided the sinker is found to comply fully with this specification.

8 Finished Treatment

Each sinker shall be blast cleaned and coated with a pitch free underwater coating for steel (black) compliant with BS 3416.

9 Certificate of Conformity

The manufacturer is to confirm, by issue of a Certificate of Conformity, that all sinkers conform to this specification, drawings and standards.

The certificate shall also include the following original information:

Mill Certificate, for stock steel used (sinker loop only)
Heat Treatment Thermal History Report (sinker loop only)

Tensile Test Report / Certificate (sinker loop and casting)

Brinell Hardness Test Report / Certificate (sinker loop and casting)

Separate reports / certificates supplied must be traceable to the Certificate of Conformity.

A maximum of 25 sinkers of the same size, type and material may be covered by one certificate.

Upon delivery, a Trinity House Inspector shall inspect the sinkers; any sinker found not complying with the requirements of this specification may be subject to rejection.

10 Wood Patterns

Trinity House will supply the wooden patterns for the sinker blocks.

Arrangements for delivery and return will be by agreement, at the time of order.

The manufacturer is responsible for repairing any damage to the pattern whilst in their possession.