



Baoding Guokun Machinery Co., Ltd

Address: 777 Chaoyang South Street, Baoding City, 071000, Hebei, China

Management Specification for Test Samples and Blocks

一、 Purpose

To ensure timely provision of test specimens that meet relevant standard requirements to the spectral analysis laboratory and mechanical testing laboratory, this specification is formulated.

二、 Responsibilities

2. 1 The Minister of Biotechnology is responsible for the design of test block patterns and molds to ensure that the size of the test blocks continues to meet relevant standards or customer requirements. The size of the sand casting test block is shown in the attached figure

2. 2 The sand casting modeling team leader is responsible for scheduling the production of sand casting test blocks and ensuring that the relevant markings meet the requirements.

2. 3 The gas welding team leader is responsible for the post-processing and heat treatment of the test blocks, ensuring that the test blocks with qualified external dimensions and heat treatment that meets the process requirements are provided within the specified time.

三. Scope

This scope applies to all pressure bearing valve castings manufactured in the factory, including the body, valve plate, and upper valve cover.

四、 Production requirements

4. 1 Test block size

The test block mold is made according to the general requirements for cast steel parts for pressure parts in ASTM A703/703M, and the detailed dimensions are shown in the attached figure.



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Ensure that the test block can meet the processing requirements of both ASTM A370 and JIS Z 2201 standard specimens simultaneously.

Ensure that one test block can produce two tensile specimens or four impact specimens.

4. 2 Quantity of test blocks

Conventional materials, one sample is made for each melting furnace.

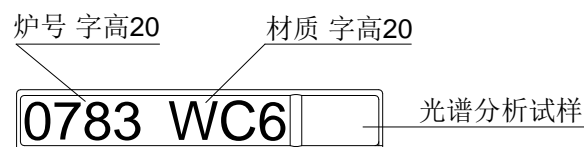
Low temperature cast steel (as shown in Table 1) or materials with special requirements (specified by the customer), two test blocks are made for each melting furnace, one for processing tensile specimens and one for processing impact test specimens.

ASTM	LCB	LCC	LC1	A352-LC2	LC3
JIS	SCPL1	—	SCPL11	SCPL21	SCPL31

4. 3 Sample production requirements

Sand casting: Molding worker determines the number of test blocks based on the material and output (number of furnaces) scheduled for the day.

Marking: The wooden mold worker placing material, furnace number, and other casting characters at the bottom of the test block, as shown in Figure 1:



图一 试块示意图

After the pouring is completed, the test blocks are placed in zones according to the furnace number. The precision casting and polishing team leader arranges the cleaning of the test blocks and stamps the material and furnace number on the test blocks based on the casting records (refer to Figure 1).

4. 4 Post processing

4. 4. 1 Collection of test blocks



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4. 4. 1 The test blocks cast the previous night need to be cleaned and cut within three working days, and are the responsibility of the precision casting and polishing team leader and the gas welding team leader.

4. 4. 2 Spectral analysis sampling

The gas welding team leader will hand over the collected test blocks to the spectral analyzer for sampling, and the analyzer will cut and sample according to the cutting marks on the test blocks. Return the remaining sample to the gas welding team leader.

4. 4. 3 Heat treatment

The sample should be subjected to heat treatment using the same process as the casting it represents in the heat treatment furnace. The gas welding team leader is responsible for filling in the relevant information (furnace number, material quantity, process requirements) on the document. After heat treatment, check the documents for any errors.

4. 4. 4 Test Sample placement

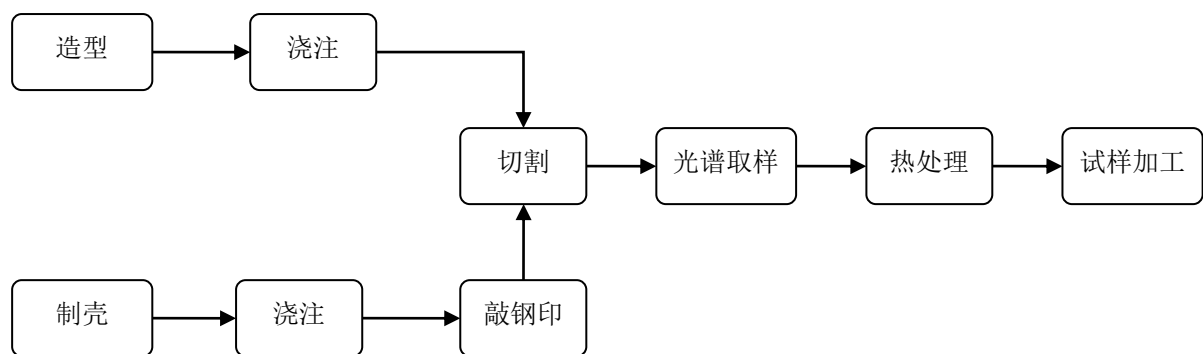
Set the sample placement area and arrange them in the order of furnace numbers.

4. 4. 5 Preservation of test blocks

Two small test pieces can be cut from one test piece, with one piece processed into a tensile specimen (or impact specimen) and the remaining piece kept as a backup. The backup retention period is one year.

五、Control flowcharts

如图二所示:



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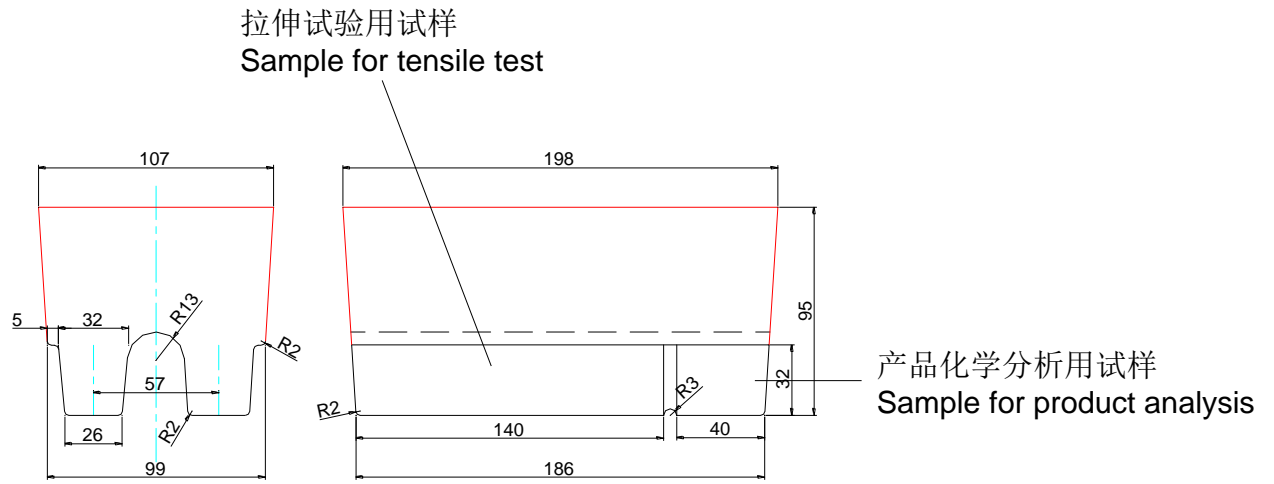
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图二 试块制作控制流程图



Standard Test Coupon for Casting(ASTM A703/703M FIG.2)

图三 砂铸试块示意图