



## TEST REPORT

No. : SHIN1407029741ML

Date : Jul 22, 2014

Page: 1 of 6

CUSTOMER NAME: JIANGYIN HUAZHENG METAL TECHNOLOGY CO.,LTD.  
ADDRESS: XIANGYANG INDUSTRIAL ZONE, HUASHI TOWN, JIANGYIN  
CITY,JIANGSU PROVINCE, CHINA

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name : Grinding balls  
Product Specification :  $\varnothing$  60mm  
Product or Lot No. : 20140626  
Manufacturer : Jiangyin Huazheng Metal Technology Co.,Ltd.  
Material and Mark : HZ-B2  
Test Required : Chemical Composition Analysis, Impact Test, Hardness Test,  
Metallographic Analysis  
Date of Receipt : Jul 17, 2014  
Testing Start Date : Jul 17, 2014  
Testing End Date : Jul 22, 2014  
Test result(s) : For further details, please refer to the following page(s)

Signed for  
SGS-CSTC Standards Technical  
Services ( Shanghai ) Co., Ltd.

Kelly Shi  
Authorized signatory



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## 1. Chemical Composition Analysis:

Test Method: OES

Element	C	Si	Mn	P	S	Cr	Ni	Cu
Result ,%	0.75	0.22	0.76	0.018	0.004	0.57	0.02	0.02

## 2. Impact Test:

Test Method: ASTM A370-13

Test item	Test condition	Absorbed energy (J)
Charpy Impact	Specimens: Charpy none-notch	14
	Dimension of specimens: 55mm×10mm×10mm	8.9
	Temperature: Ambient	10.1

## 3. Hardness Test:

Test Method: ASTM E18-14

Test item	Test position	Result		
HRC	Core	61.4	62.3	61.8
	1/4R	62.3	62.1	62.2
	1/2R	62.4	63.4	63.4
	3/4R	62.8	62.6	63.0
	Subsurface	62.4	62.4	62.0



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## 4. Metallographic Analysis:

Reference Standard: ASTM E3-11

Etching Reagent: 3% nitric acid alcoholic solution

Step 1. Sampling from main body of material;

Step 2. Mounting, Cleaning, polishing and etching;

Step 3. Observing with the microscope.

Test result(s):

Test location	Microstructure of the sample
Surface	Partial decarburization of the sample, shown in Fig.1 martensite and residual austenite, shown in Fig.2,
Core	Acicular martensite and residual austenite, shown in Fig.3

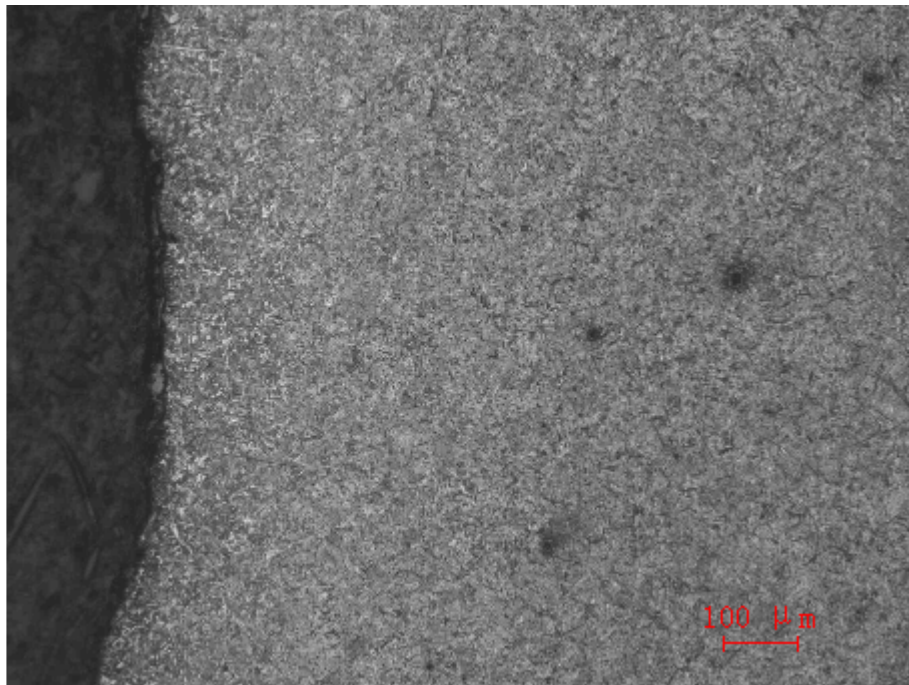


Fig.1 Microstructure of the sample (Surface) 100x



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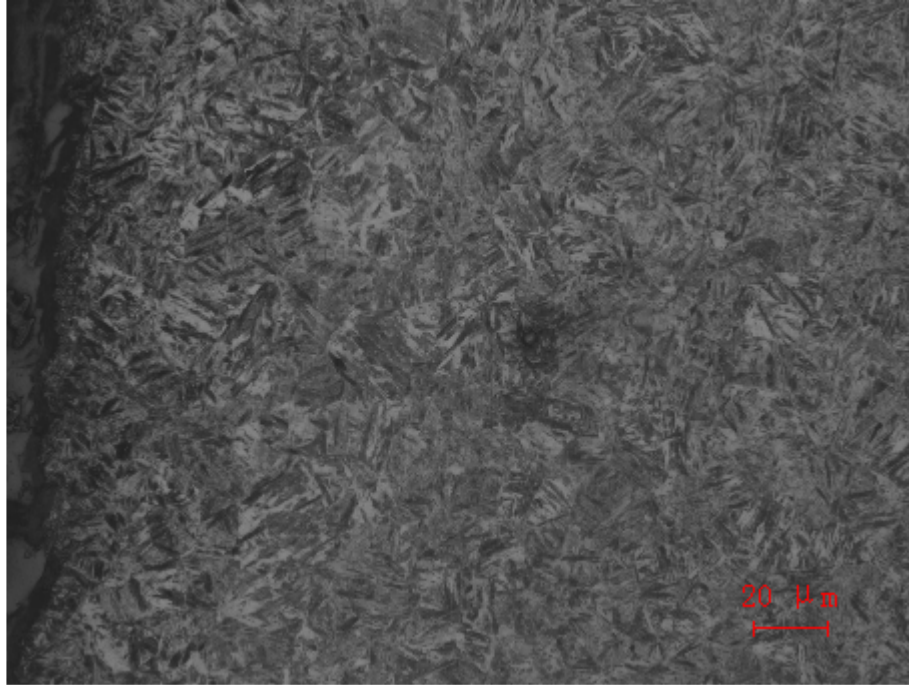


Fig.2 Microstructure of the sample (Surface) 500x



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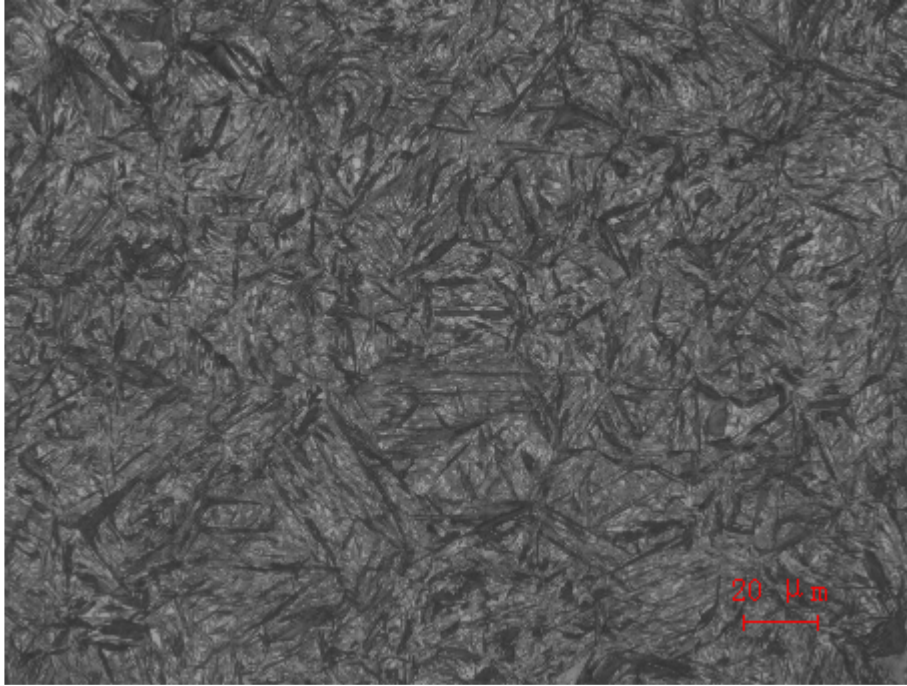


Fig.3 Microstructure of the sample (Core) 500x



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Sample photo

\*\*\*\*\* End of report\*\*\*\*\*



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