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GB/T 34895-2017

General rules for the metallographic examination of heat treatment

热处理金相检验通则

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard by the National Standardization Technical Committee heat treatment (SAC/TC75) and focal point. The main drafting units of this standard. National Daojian and daily metal tools Quality Supervision and Inspection Center, Beijing Institute of Electrical and Mechanical Services, Shanghai Machinery Manufacturing Technology Institute Co., Ltd., Beijing Special Equipment Testing Center, Dalian Jiaotong University, Tianjin Heat Treatment Testing Center Co., Ltd., long Spring Track Co., Ltd., Jiangsu Fengdong Heat Treatment and Surface Modification Engineering Research Co., Ltd., Guangdong Shichuang Metal Technology Co., Ltd. Limited, Beijing Heng Zhiyou Technology Development Center. The main drafters of this standard. Bi Geping, Li Qiao, Ren praise, Tan Wenhua, Lei Min, Li Zhiqiang, Wen Lian, Song Baojing, Shi Yousen, Dong Xiaohong, To Jianhua, Huang Wen Niu, Chen Xiaoyu. Heat treatment Metallographic examination General

1 Scope

China's national general rules for metallographic examination of heat treated parts. Metallography is how a heat treatment is actually judged. Hardness testing says the part reached a hardness; it does not say whether the structure that produced it is the one intended, and two parts of identical hardness can behave completely differently in service. Sectioning the part, mounting, grinding, polishing and etching it, and looking at what the microscope shows answers the questions hardness cannot: is the martensite fine or coarse, how much retained austenite is present, has the surface decarburised, is the case depth right, has grain growth occurred, are there carbides at the grain boundaries. Each of those is a specific failure waiting to happen. What a general rules document has to fix is the preparation, because metallography is a technique in which the specimen is easy to alter while preparing it - overheating during grinding tempers the very structure being examined - and an artefact looks exactly like a defect.

This standard specifies the workpiece before and after heat treatment and heat treatment process metallographic examination of personnel, related equipment, sample sampling,

sample preparation, organization Display, tissue test, metallographic photo production, the original records, sample disposal, metallurgical site inspection, inspection reports and safety and environmental protection and other technical requirements. This standard applies to the optical metallographic microscope heat treatment metallographic examination.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 7232 metal heat treatment process terminology

GB/T 13298 metal microstructure test method

GB/T 15749 quantitative metallographic determination

GB/T 17455 non-destructive testing of the surface of the metallographic complex type technology

GB/T 27476.1 Testing laboratory safety Part 1. General

GB/T 27476.2 Testing laboratory safety Part

3 Terms and definitions

GB/T 7232 as defined in the following terms and definitions apply to this document.

3.1 Metallographic examination metalographicexamination Metallographic microscopy of metal or alloy macrostructure or microstructure analysis to determine the size of a variety of organizations, the number of Volume, shape and distribution characteristics of the method.

3.2 Metallographic complex technology metalographicreplica The complex (negative) technique of obtaining the microstructure of the metal parts of a component by a method of bonding a prefabricated composite material to a sample. [DL/T 652-1998]

3.3 Quantitative metallographic quantitativemetalography A class of metallographic techniques for quantitatively characterizing the microstructure of materials using stereology and image analysis techniques.

Note. Quantitative metallography includes the determination of grain size, the content of each phase, the size, number, shape and distribution characteristics of the second phase and so on.

3.4 Image analysis imageanalysis Experimental techniques for extracting quantitative information such as geometric information and optical density from the image.