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Code for design of steel pipe extrusion engineering

挤压钢管工程设计规范

(English Translation)

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1 General

1.0.1

In order to standardize the design of extruded steel pipe engineering projects, promote the improvement of my country's extruded steel pipe technology and equipment level, and ensure the quality of the project, this specification is formulated.

1.0.2

This code is applicable to the engineering design of extruded steel pipes for new construction, reconstruction and expansion.

1.0.3

Extruded steel pipe projects for new construction, reconstruction and expansion shall fully implement the national industrial development policy and implement the guidelines of high quality, high efficiency, energy saving and environmental protection.

1.0.4

The engineering design of extruded steel pipes shall not only comply with this specification, but also comply with the current relevant national standards.

2.0.1 Expanding

The process of using tools to expand the existing small inner hole of the steel billet to the inner hole required for extrusion production.

2.0.2 Piercing

Put the solid billet into the perforated cylinder and use the upsetting rod to upset the billet to fill the perforated cylinder, and then use the tool to punch a through hole with the required inner diameter in the center of the solid billet.

2.0.3 Extruding

The steel pipe billet is placed in a container composed of an extrusion cylinder, an extrusion die, a mandrel and an extrusion pad, and the extrusion force is exerted by the extrusion rod to force the metal to flow out along the gap formed by the extrusion die and the mandrel, thereby extruding A method of producing steel pipes.

2.0.4 Unit mill set

In order to complete the products specified in the product outline, all process equipment from raw material preparation to finished products.

2.0.5 Annual necessary production time of mill set

The actual production time required to complete the annual output specified in the product outline.

2.0.6 Duty ratio of mill set

The percentage of the unit's annual actual working time to the unit's annual effective working time.

2.0.7 Online on line

Compared with a certain process of the continuous operation of the extrusion production line, the workpiece can reach the process from the extrusion production line or from the process to the extrusion production line without the help of lifting and transportation equipment and human transportation.

2.0.8 Manual inspection visual examination

The method of observing the inner and outer surfaces of steel pipes with the naked eye or with the help of low-power magnifying glasses, endoscopes and other simple tools to find defects on the inner and outer surfaces of steel pipes.

2.0.9 Nondestructive inspection

The general term for methods of detecting defects without compromising the performance and integrity of the inspected material or finished product.

2.0.10 Ultrasonic inspection

A non-destructive testing method that utilizes ultrasound to detect internal and surface defects in materials.

2.0.11 Eddy current inspection

It is a flaw detection method that generates eddy current in a conductive test piece and detects the change of eddy current to detect defects.

2.0.12 on line solution treatment on line solution treatment A heat treatment method that uses the waste heat of extruded steel pipes to rapidly cool to obtain a supersaturated solid solution.

3 Basic Regulations

3.0.1

The name of the extrusion unit should be expressed as "xxxMN extrusion unit". Among them, "xxx" should represent the nominal extrusion force of the extruder.

3.0.2

Extrusion machine should choose the specifications in Table 3.0.2.

3.0.3

The working system of the extrusion unit should be designed according to the continuous working system.

3.0.4

The annual effective working time of the extrusion unit should not be less than 5000h, and the annual actual working time should not be less than 4000h.

3.0.5

The load rate of the extrusion unit should not be lower than 80%.

3.0.6

The extruded steel pipe project should be equipped with glass mat processing facilities, and the facilities should meet the processing needs of glass mats of various specifications for the extrusion unit.

3.0.7

The extruded steel pipe project should be equipped with physical and chemical inspection facilities, and the facilities should meet the inspection requirements of product standards.

3.0.8

The source, repair and assembly of the production tools and molds should be specified during the design.

3.0.9

The processing or repairing equipment for special-purpose production tools and molds shall carry out capacity calculation in the design, and the processing capacity of special-purpose production tool and mold processing equipment shall be able to meet the needs of the unit.

4.1 Horizontal extrusion

4.1.1

The raw material for horizontal extrusion can be cast billet, rolled billet and forged billet, and the cross section of the billet should be round.

4.1.2

The chemical composition, height structure, etc. of raw materials shall comply with the current national regulations on steel pipe product standards.

4.1.3

There should be no defects such as folds, ears, cracks and shrinkage cavities on the surface and inside of raw materials.

4.1.4

The overall dimensions should meet the extrusion process requirements.