YHX

Product Inspection Procedures
Shaanxi Ehisen Technology Co., Ltd.

Q/YHX08-2019
Replace Q/YHX08-2018

Controlled

Cathodic protection with titanium strip and titanium mesh anode

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Introduction

This standard is formulated for the third time.

This standard is drafted by the technical department of Shaanxi Ehisen Technology Co., Ltd.

This standard drafting department: R & D center, complete equipment and technology department.

Drafters of this standard: Miao Lei, Ren Chao.

Reviewer of this standard: Xue Liang.

This standard approved by: Xu Boshi.

Previous releases of the standard replaced by this standard are: Q/YHX08-2018.

1.Scope

This standard is applicable to the metal anode coating with soil, fine sand and groundwater as the working environment, Ir as the main coating body and titanium as the matrix.

2.Reference Standards

The terms in the following documents become terms of this Standard by reference to this Standard. For dated references, all subsequent revisions (excluding errors) or revisions shall not apply to this Standard. However, parties to an agreement under this standard are encouraged to study whether to use the most recent version of these documents. For undated references, the latest version of the document applies to this standard.

GB/T3620 Titanium and titanium alloy grades and chemical composition

GB/T3621 Titanium and titanium alloy sheet

HMTS/ CH-3-06-1999 Product Standard for chloro-iridium acids, precious metal compounds

Q/XB1921-2006 Chloro-iridium acid

NACE STANDARD TM0108-2008 Testing of Catalyzed Titanium Anodes for Use in soils or Nature Waters.

3.Terminology

Reinforcement life

Life of anodic coating electrolytic reaction in Na_2SO_4 solution in specified concentration at specified current density and temperature.

4.Technical requirement

4.1 Product specifications

Product specifications and anode dimensional tolerances shall be in accordance with Table 1

4.2 The matrix of metal anode strip and conductive strip shall be made of titanium material, and its chemical composition shall conform to GB/T3620-2007

Rule. The mechanical properties of the conductive strip shall comply with the provisions of GB/3621-2007.

4.3 The electrochemical properties of the anode coating shall comply with the provisions of Table 3.

4.4 Appearance requirements for anode coatings

Table 1 Product brand, type and material

Coating	Specification Substrate	Material
TJ-G	6.35±0.20 mm*0.635± 0.07mm*152(76)m±1m	TA1 or TA2
Conduction Band	12.7± 0.30mm *0.9± 0.1mm*152(76)m±1m	TA1 or TA2

Table 2 Titanium mesh belt product brand, type, material

Coating	Specification Substrate	Material
TJ-F	1.3±0.20mm*10±2mm*76m±1m 1.3±0.20mm*13±2mm*76m±1m 1.3±0.20mm*19±2mm*76m±1m Note: Mesh size: 2.5mm*4.6mm*0.6mm	TA1 or TA2

Table 3 Technical requirements for anode coatings

Project	Technical Index
Enhanced life (h)	Titanium band ⩾ 120 Titanium mesh belt ⩾ 50

$$\boldsymbol{Actual\ life\ (h)} = \frac{\text{Enhanced life (h)} * 15000\ (\text{A}/m^2)}{\text{Maximum output current}\ (\text{A}/m^2)}$$

4.4.1 The anode surface should be free of pollution and impurities.

4.4.2 For the anode, there shall be no more than two scratches per meter of anode, each scratch shall be less than 10mm in length and 2mm in width, and the depth shall not expose the substrate.

4.4.3 For each meter of anode surface scratches shall not exceed two, each scratch area is less than 5mm^2 .

4.5 Requirements for the bonding state of the anode coating The bonding state of the coating surface: The coating is qualified if it is bent 180 degrees around the ϕ20 metal rod without peeling.

5.Test methods

5. 1 Test piece requirements

5.1.1 The main test method used in this standard is sampling and testing of products with the furnace.

5.1.2 Take two samples from each batch of products

5.1.3 Sampling size is 200*6.35*0.635mm

5.2 Anode dimensions are measured with standard measuring tools (tape measure, ruler, vernier caliper, etc.).

5.3 The precious metal content is controlled by the actual amount of ingredients.

5.4 The enhanced life test was carried out according to the conditions in Table 4.

Table 4 Conditions of enhanced life test

Dielectric	Current Density (A/m^2)	Temperature (℃)
1 mol/ L Na_2SO_4Solution	15000	25+5

5.5 The appearance of the anode coating must be checked with the naked eye.

5.6 The bonding state of the coating surface shall be checked in accordance with Article 4.5 of this standard.

6.Check the rules

6.1 The anode shall be inspected by the quality department of the supplier or the department entrusted by the supplier to ensure that the product quality

meets the provisions of this standard, and fill in the product quality certificate.

6.2 The Demander may inspect the received products according to the provisions of this Standard. If the inspection results are not in conformity with the provisions of this Standard, the Demander shall, within one month from the date of receipt of the products, propose to the Supplier for settlement through negotiation.

6.3 Batch: The anodes produced by the same batch of ingredients constitute a batch.

6.4 Check items

Product delivery inspection items

(1) Anode size check

(2) Anodic coating appearance inspection

(3) Check the bonding state of the anode coating surface

(4) Enhanced life test

(5) chemical composition analysis of the substrate

Enhanced life test due to a long cycle, so there is no data when leaving the factory (if the user needs to supplement later). Chemical composition analysis of the substrate is based on the feed material list.

6.5 Anode coating appearance inspection and anode size inspection shall be carried out on the anode product; Other test items to check the sample.

6.6 Checking decision rules

If the test piece inspection data does not conform to the technical index value of the factory inspection item, it is allowed to take a double number of test pieces from the sample to which the test piece belongs for reinspection of the unqualified item. If a sample still does not meet the requirements, the batch of anodes is disqualified.

7.Marking, packaging, storage and transportation

7. 1 Signs

7.1.1 The following marks or labels shall be printed or affixed on qualified products:

a. The supplier's quality department checks and prints

b. Product brand

c. Batch number

d. Day period

7.1.2 The following marks shall be marked on the product packaging:

a. Supplier label

b. Product name

c. Quantity

7.2 Packaging, transportation and storage

7.2. 1 Transport mark:

The packing cases are marked with words such as "Do not turn upside down" or "fragile".

7.2.2 Packaging and transportation

a. The product should be wrapped in soft materials or packaging paper before packing.

b. Make packing cases according to delivery requirements.

c. The anode should be gently put into the box. Between the electrodes and the electrodes and the packing box, the soft foam board should be used to isolate and tighten the electrodes to prevent them from moving relative to each other or bouncing due to bumps during loading and unloading.

7. 2. 3 Storage and transportation

a. The product shall be handled with care in loading and unloading and transportation.

b. Do not roll or hit the package.

c. Wrap the product with soft material or wrapping paper before storage.

7.2.2 Certificate of Quality

Each batch of products should be accompanied by a product quality certificate, which includes:

a. Supplier name.

b. Product name.

c. Product brand, specification Product batch number, number of pieces.

d. The required analysis, inspection results and the seal of the quality department.

e. This standard No.

f. Packing (storage) date.

8. Contents of the order (or contract)

The order form (or contract) for titanium anodes listed in this standard shall include the following:

a. Product type.

b. Product brand.

c. Product quantity.

d. This standard number.