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**Corrosion test method of corrosion resistant steel for cargo oil
tanks**

原油船货油舱用耐蚀钢腐蚀性能测试方法

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Foreword

This document complies with the provisions of GB/T 1:1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

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Corrosion of corrosion-resistant steel for cargo tanks of crude oil tankers Performance testing methods

1 Scope

This document specifies the sampling, sample preparation, and simulation for testing the corrosion resistance of corrosion-resistant steel and its welded joints used in cargo oil tanks of crude oil tankers:

Test equipment for plate working conditions and simulated inner floor working conditions, test conditions, test steps, test results and evaluation, and test reports:

This document is applicable to the corrosion performance testing of corrosion-resistant steel and its welded joints used in cargo tanks of crude oil tankers:

Note: Corrosion-resistant steel and welded joints used in crude oil tankers' cargo tanks refer to upper deck corrosion-resistant steel, inner bottom plate corrosion-resistant steel and welded joints used in crude oil tankers' cargo tanks:

2 Normative reference documents

GB/T 622

GB/T 629

GB/T 1266

GB/T 6682

GB/T 9258

GB/T 10123

GB/T 16545-2015

3 Terms and definitions

The terms and definitions defined in GB/T 10123 and the following apply to this document:

3:1 corrosion loss corrosion loss The average corrosion thinning of the sample calculated based on the corrosion weight loss of the sample, the surface area of the sample and the material density:

4 Overview and requirements

4:1 Overview 4:1:1 The cargo tank of a crude oil tanker includes upper deck, longitudinal bulkhead and inner bottom plate: The top space of the cargo oil tank will form a complex corrosive environment, including Including H₂O and H₂S volatilized from crude oil, as well as gases containing components such as N₂, O₂, SO₂ and CO₂: The temperature on the upper deck of the cargo oil tank varies with the outside The boundary temperature changes obviously, and the crude oil loaded in the tank has a huge heat capacity, which makes the temperature of the mixed gas in the tank very stable: Therefore, during the day, inside and outside the cabin When the temperature difference is small, the lower surface of the upper deck in the cabin is dry: At night, the temperature of the gas in the cabin is high and the temperature outside the cabin is low: Formations containing H₂S and Condensed water containing SO₂ and other components is highly corrosive: If the upper deck of the cargo oil tank is in this dry-wet cycle for a long time, the lower surface will corrode:

serious: The longitudinal bulkhead is mainly in contact with crude oil and has slight corrosion: The cargo oil bilge is mainly composed of sedimentary water separated from crude oil, in which a large amount of acid is dissolved

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