Guideline No.: U-01(201510)

U-01

MARINE WEATHERTIGHT SINGLE-LEAF STEEL DOORS

Issued date: October 20,2015

Foreword

CCS Product Inspection and Testing Guideline (hereinafter referred to as this Guideline) contains the technical requirements, inspection and testing criteria related to classification and statutory survey of marine products to be applied for CCS approval/inspection.

This Guideline frees the users to adopt other test methods and requirements which are equivalent to or are stricter than this Guideline.

This Guideline is published and updated by CCS, and is released at http://www.ccs.org.cn. Your comments or suggestions are welcomed and may be sent to our email addressed mp@ccs.org.cn.

Historical version and release date: U01(201510) October 20, 2015

Main change: New Release

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MARINE WEATHERTIGHT SINGLE-LEAF STEEL DOORS

1 Application

This Guideline applies to inspection of weathertight single-leaf steel doors used for access openings of enclosed superstructures and deckhouses (including companionways) on decks above freeboard.

2 Normative references

(1) Regulation 12, Annex I of Annex B to the Protocol of 1988 Relating to the International Convention on Load Lines, 1966;

(2) ISO 6042-1998 Ships and marine technology – Weathertight single-leaf steel doors;

(3) 4.3.3.3, PART ONE of CCS Rules for Classification of Sea-going Steel Ships.

3 Terms and definitions

(1) Nominal size is the net inner size L × B of the doorframe, L being the inner length, B being the inner breadth. It is also called size of door opening.

(2) Clipping device is the locking device of a closed door, permanently attached to the door, capable of being operated at both sides of the door and securing with gasket the weathertightness of the door.

(3) Gasket is a material with certain elasticity to secure the weathertightness of the door.

4 Plans and documents

4.1 The following plans and documents are to be submitted for approval:

(1) Main performance specifications;

(2) General arrangements;

(3) Drawing of door plating;

(4) Drawing of doorframe;

(5) Drawing of hinges;

(6) Drawing of clipping device;

(7) Arrangement of clipping device and hinges;

(8) List of physical and chemical properties of materials of main parts;

(9) Type test programme.

4.2 The following plans and documents are to be submitted for information:

(1) Product instructions and nameplate;

5 Materials and components

Materials and components are to comply with relevant requirements of CCS Rules.

6 Design and technical requirements

6.1 The design and technical requirements are to comply with 2 and this paragraph of this Guideline.

6.2 Main components are to be manufactured with steels approved by CCS or other equivalent materials. Gasket is to be made of oil-resistant and aging-resistant rubber with ultimate tensile strength not less than 15 Mpa, aging coefficient being 0.8 and Shore hardness being 30 ~ 40.

7 Type test

7.1 Selection of typical samples

The door with maximum specification (size of door opening) and manufactured according to approved plans is to be selected as typical sample.

7.2 Type test items and requirements are given in Table 7.1

Table 7.1

No.	Inspection/test items	Inspection/test method	Technical requirements

1	Examination of surface quality	Visual examination	1. No burr or cracking is allowed on the door plating, doorframe and fittings, which are to be uniform in appearance and free from obvious surface defects. 2. After anti-corrosion treatment of the surface of door plating, doorframe and fittings, anticorrosive primer is to be coated thereon

Continued Table 7.1

No.	Inspection/test items	Inspection/test method	Technical requirements
2	Dimension measurement	Dimensions are to be measured with well calibrated instruments	The results of measurement are to comply with the requirements of the plans and technical documents: 1. The deviation of length and breadth of door plating and doorframe is ±2 mm and the distortion (the distance between the midpoints of the diagonals) is not to exceed 2 mm. 2. The straightness of door plating and doorframe is not to exceed 1 mm/m
3	Examination and test of signs of opening and closing directions of the door	The door is to be tested for opening and closing and the signs are to be examined	1. The direction of opening of the door is to be consistent with the direction of the sign. 2. The door is to be capable of being closed normally and opened flexibly, not being too tight or too loose. 3. The number and location of clips are to be consistent with the plans
4	Pressing test	The edges of the doorframe are to be chalked evenly, and the door is to be secured tightly with clips	1. When the door is closed, the gasket is to be pressed in together with the edges of the doorframe to a depth of 2 mm. 2. The width of continuous pressing contact is to be more than 5 mm
5	Hose test (tightness test of contact between doorframe and gasket)	The door is to be installed on a simulated bulkhead and washed for 5 min by a nozzle of not less than 12 mm in diameter and with a pressure of at least 0.2 MPa, from a distance not less than 1.5 m	The tested surface is to be free from water

8 Unit/batch inspection

8.1 Sampling ratio is 10% of every type/specification.

8.2 The inspection is to cover all items in Table 7.1 4% of every type/specification (at least two doors) are to be selected as samples for hose test.