

Guideline No.N-02 (201510)



**U-02**

# **HATCH COVER SEALING STRIP**

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## **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](mailto:mp@ccs.org.cn).

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## **HATCH COVER SEALING STRIP**

### **1 Application**

The Guideline applies to the approval and inspection on the marine hatch cover sealing strip.

### **2 Basis for approval and inspection**

2.1 Chapter 1, Part Two of *CCS Rules for Materials and Welding* (2009);

### **3 Plans and documents**

3.1 The applicant should submit the following plans and technical documents as per the requirement of the item together with the *Approval Application*:

Factory profile (including factory history and present status), description on product manufacturing history, and relevant report and certificate (if the product is subject to professional verification and identification).

3.2 Quality management document - The manufacturer should formulate quality control plan for the products in the approval scope and submit it for CCS review and approval. The quality control plan should describe the quality assurance and control method during production as per the technical requirements or standards of product. The quality control plan should involve the inspection plan, and reflect especially the inspection and test requirement of CCS standards.

3.3 List of production equipment

3.4 List of test equipment

3.5 Technical condition of product

3.6 Product picture

3.7 List of names, specifications/grades and physiochemical properties of main raw materials

3.8 Product factory test program

3.9 Product type test program

3.10 Main process documents

3.11 Product operation manual

3.12 Samples of product identification and inspection certificate

### **4 Type test**

4.1 Type test items should include the following generally:

- (1) Appearance inspection
- (2) Physical performance inspection

4.2 Specific requirements

- (1) The appearance quality must meet the requirements of Table 1

**Appearance quality**

**Table 1**

No.	Test items	Technical requirement
1	Crack	Not allowed
2	Section blister	Not allowed
3	Impurities	The length/width and depth of the impurity cannot exceed 1.5 mm and 0.5 mm respectively, and the impurity existing at two places within one meter are not allowed.
4	Pock	The length, width and depth of any pock cannot exceed 0.5 mm.
5	Torsional deformation	Obvious torsional deformation is not allowed.
6	Unevenness	The depth/height, width and length of the unevenness cannot exceed 0.5mm, 1 mm and 5 mm respectively, and the unevenness existing at two places within one meter are not allowed.
7	Joint defect	Relative dislocation between joints cannot exceed 1 mm.

- (2) The physical performance must meet the requirements of Table 2.

**Physical performance**

**Table 2**

No.	Item	Technical index
1	Hardness (Shore A)	Meet the technical requirement of product
2	Tensile strength MPa $\geq$	8
3	Elongation at break % $\geq$	360
4	Tear strength $\geq$ KN/m	Meet the technical requirement of product

**Table 2 (continued)**

No.	Item	Technical index

After hot air aging (70°C ×168 h)		
5	Hardness (Shore A) ≤%	±10.
6	Change rate of elongation at break ≤%	-35
7	Change rate of tensile strength ≤%	-25
8	Change rate of tear strength ≤%	-15
9	Anti-ozone aging	Meet the technical requirement of product
10	Sealing strip performance	The compression set (70°CX168 h, compression amount: 25%) and compression stress should meet the technical requirement of product.

(3) The physical properties of the sponge should meet the following requirement:

**Physical property of sponge Table 3**

Item	Index
Compression set (23°CX70h, compression amount: 50%, max.: %)	45
Apparent density g/cm <sup>3</sup>	0.35.-0.7

**5 Unit/batch inspection**

5.1 The initial inspection items should be those specified in Tables 1 and 2.

5.2 The routine delivery inspection should be conducted as per the requirements of Articles 1, 2, 3 and 4 of Tables 1 and 2.

**6 Sampling prescription**

6.1 One batch of not more than 500 kg should be taken from the same type of products manufactured with the same machine and on the same shift for inspection as per Items 1-4 of Tables 1 and 2.

6.2 During normal production, all items listed in Tables 1 and 2 should be inspected annually.

**7 Reference standards**

7.1 GB/T528 Determination on Tensile Property of Vulcanized Rubber and Thermoplastic Rubber

7.2 GB/T531 Shore A Hardness Test Method on Vulcanized Rubber

7.3 GB/T3512 Test Method on Hot Air Aging of Rubber

7.4 GB/T5723 Sample and Product Size Determination for Vulcanized Rubber and Thermoplastic Rubber Test