
International Standard



4089

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Shipbuilding — Inland navigation — Sealing rubber for covers of cargo hatches

Construction navale — Navigation intérieure — Joints d'étanchéité pour panneaux de cales à marchandises

First edition — 1979-06-01

iTeh STANDARD PREVIEW
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UDC 629.122.011.51

Ref. No. ISO 4089-1979 (E)

Descriptors : shipbuilding, inland navigation, seals (stoppers), hatches, rubber products, equipment specifications.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4089 was developed by Technical Committee ISO/TC 8, *Shipbuilding*, and was circulated to the member bodies in February 1977.

It has been approved by the member bodies of the following countries :

Austria	France	Poland
Belgium	Germany, F. R.	Romania
Brazil	India	Spain
Bulgaria	Italy	Turkey
Czechoslovakia	Japan	Yugoslavia
Finland	Mexico	

The member bodies of the following countries expressed disapproval of the document on technical grounds :

United Kingdom
USA

Shipbuilding — Inland navigation — Sealing rubber for covers of cargo hatches

0 Introduction

This International Standard is intended to promote the production of reliable sealing rubber for covers of cargo hatches, the implementation of optimum methods of testing of covers, and the facilitation of their operation and repairs.

1 Scope and field of application

This International Standard specifies the type, principal dimensions and technical requirements for the sealing rubber for covers of cargo hatches of various types of inland vessels and water craft.

The packing is intended to ensure water and weathertightness in rectilinear sections along the perimeter and in joints between adjacent panels of cargo hatch covers.

This International Standard does not apply to special rubber packings intended to create heat-insulating labyrinths.

2 Definitions

2.1 Hatch covers are considered watertight if they remain impermeable under the effect of water under pressure resulting from overrunning waves.

2.2 Hatch covers are considered weathertight if they are impermeable to water in conditions of heavy rain and spray.

3 Type and dimensions

3.1 Rectangular sealing rubber shall correspond to the dimensions given in the following table.

Dimensions in millimetres

Dimensional type	Dimensions of packings $h \times w$
1	42 × 30
2	42 × 67
3	42 × 87
4	42 × 107
5	32 × 67

where h = height; w = width.

3.2 The packing groove may have either a rectangular or a trapezoidal section.

4 Technical requirements

4.1 The sealing rubber shall recover its original shape after compression of 8 ± 2 mm by a packing rim (a strip of thickness up to 20 mm or a bar of diameter up to 30 mm) for 1 month.

The value of the residual deformation shall be minimal and shall not impair the tightness of the sealing rubber.

4.2 The sealing rubber shall ensure weather and watertightness without losing its physical and mechanical properties within the temperature range from -30 to $+70$ °C.

4.3 The sealing rubber shall be oil resistant.

4.4 The sealing rubber working areas and the areas which are exposed to the influence of the external surroundings shall be resistant to both sunlight and ozone.

4.5 The grade of rubber used shall permit reliable glueing, vulcanization or other methods of connecting the separate elements of the packing to one another and their fixation in the grooves of the sections of a hatch cover.

Density, mechanical strength and other characteristics of rubber not specified in this International Standard shall meet the requirements of the appropriate International Standards.

4.6 Fastening of the sealing rubber in place shall be done by glueing, vulcanization or any other reliable method.

5 Tests

5.1 Watertightness

The test for watertightness shall be carried out with a water jet directed at the cover from a hose with a nozzle of diameter not less than 16 mm at a pressure of 100 kPa, which corresponds to a water jet not less than 10 m high thrown upwards at the place of test.

The watering shall be carried out at a distance of 1 to 3 m from the area being tested.

The speed of movement of the nozzle along the perimeter of the sealing rubber shall be not more than 2 m/min.

The test shall be carried out at temperature above 0 °C. It is admissible to carry out the tests at air temperatures below 0 °C, in which case the temperature of the water shall be 15 to 20 °C.

The result of the test is satisfactory if no traces or drops of water are found on the inside surfaces of the cover in the tested areas after the test.

5.2 Weathertightness

The test for weathertightness shall be carried out by watering of the cover from a nozzle with the head and the speed of movement along the joints as specified in 5.1, the water jet being directed vertically upwards to create an imitation of heavy rain.

The result of the test is satisfactory if no traces of water are found on the inside surfaces of the cover in the tested areas after the test.

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