



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 40530-2021

**Ships and marine technology - Safety valve for cargo tanks of
LNG carriers - Design and testing requirements**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents" Drafting.

The translation method used in this document is equivalent to the adoption of ISO 18154.2017, Safety of Cargo Tanks of Ships and Offshore Technology Liquefied Natural Gas Carriers

Valve design and test requirements".

The Chinese documents that have consistent correspondence with the normatively cited international documents in this document are as follows.

---GB/T 28778-2012 pilot operated safety valve (ISO 4126-4.2004, MOD)

1 Scope

This document specifies the design, test and inspection methods of diaphragm pilot operated safety valves.

The safety valve in this document is applicable to the cargo tank of LNG carriers to keep the pressure in the tank below the maximum allowable working pressure.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

This document.

ISO 4126-4 Overpressure protection safety equipment Part 4. Pilot operated safety valve (Safety devices for protection against

excessive pressure - Part 4. Pilot operated safety valves)

IMO Code for Construction and Equipment of Ships Carrying Liquefied Gas in Bulk (IGC Code) [The International Code for the Con-

struction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)]

API STD 527 pressure relief valve sealing performance (Seat Tightness of Pressure Relief Valves)

ASMEB16.34 flange, thread and welding connection valve (Valves-Flanged, Threaded and WeldingEnd)

3 Terms and definitions

The following terms and definitions apply to this document.

The URLs of the termbases used by ISO and IEC for standardization are as follows.

3.1

Blowdown

The difference between the set pressure and the return pressure.

Note. The opening and closing pressure difference is usually expressed as a percentage of the set pressure. When the set pressure is less than 3 bar, it is expressed in bar.

3.2

Flowarea

The cross-sectional area of the flow path between the inlet end and the valve seat (excluding the area of the curtain) is used to calculate the theoretical flow rate without any resistance.

3.3

Opening height lift

The actual stroke of the main disc from the closed position.

3.4

Pilot operated safety valve

An automatic device composed of a main valve and a pilot valve.

Note. The guide only responds to the fluid pressure without any external force and controls the operation of the main valve. When the fluid pressure rises to the set point, the valve opens. When fluid