

Internal combustion engines supplied with low pressure gas

■ Summary of Major Amendments

Related Rules/Guidance	Effective date
Guidance Pt 5, Annex 5-7-1	1 Jul. 2019 (Date of the application for type approval)

■ Major Amendments

○ Reason for Amendments

The existing Guidance Pt 5, Annex 5-7-1 (Control and Safety Systems for Dual Fuel Diesel Engines) was issued when marine dual fuel engines were mainly of the 4-stroke type, operated according to the Diesel cycle and supplied with gas at high pressure (300~350 bar). Since then, 4-stroke dual fuel engines supplied with low pressure gas (typically 5~6 bar) have been placed on the marine market and extensively used on LNG carriers and on various types of gas-fuelled ships. It was therefore proposed to develop the requirements for internal combustion engines supplied with low pressure gas.

○ Amendments

- The risk analysis is to be conducted and gives provisions regarding the scope of the analysis and the different systems and equipment that need to be analyzed.
- The gas piping system on the engine is to be designed according to the “double wall” arrangement or, where permitted by the IGF Code, to the “alternative” single wall arrangement, when the engine is installed in an ESD-protected machinery space.
- The principle of a gas detection in the crankcase with an alarm before 100% LFL required by the IGC Code (reg. 16.7.3.3 and 13.6.17) has not been

retained.

- The table for alarms and safeties for dual fuel engines and gas only engines is newly added.
- The specific requirements for dual fuel engines, gas only engines and pre-mixed engines are newly added.
- The requirements for type approval, shop trials and on-board tests are newly added.

○ **Impact Analysis**

- ✓ Indication of any impact on and/or contribution to safety, security or environmental protection
 - : Contributing to the safety of ships that install internal combustion engines supplied with low-pressure gas.

- ✓ Indication of any impact on net and gross scantlings
 - : N.A