

F20 Inert Gas Systems

(1974)

(Rev.1

1983)

(Rev.2

1987)

(Rev.3

May 1998)

(Corr.

Sept 2001)

(Rev.4

May 2004)

(Rev.5

Nov 2005)

(Rev.6

May 2012)

(Rev.7

May 2015)

F20.1 General Requirements

F20.1.1 All types of inert gas systems are to comply with the following:

- .1 Plans in diagrammatic form are to be submitted for appraisal and should include the following:
 - details and arrangement of the inert gas generating plant including all control and monitoring devices;
 - arrangement of the piping system for distribution of the inert gas.
- .2 An automatic control capable of producing suitable inert gas under all service conditions is to be fitted.
- .3 Subsequent surveys are to be carried out at the intervals required by the Classification Society Rules.

F20.2 Requirements for All Systems on Tankers, including Chemical Tankers, to which SOLAS regulation II-2/4.5.5.1 applies

F20.2.1 An inert gas system complying with the applicable requirements of Ch. 15 of the FSS Code, as amended by MSC.367 (93), is to be fitted on tankers to which SOLAS regulation II-2/4.5.5.1 applies. In applying the applicable requirements of Ch. 15 of the FSS Code, any use of the word "Administration" therein is to be considered as meaning the relevant Classification Society. The inert gas system is to be operated in accordance with SOLAS regulation II-2/16.3.3, as amended by MSC.365(93). In applying SOLAS regulation II-2/16.3.3.2, paragraph 2.2.1.2.4 of Ch. 15 of the FSS Code is to be complied with.

NOTES:

1. Rev.6 is to be applied by IACS Societies on ships contracted for construction on or after 1 July 2013.
2. Rev.7 is to be applied by IACS Societies on ships constructed on or after 1 January 2016.
3. The "contracted for construction" date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of "contract for construction", refer to IACS Procedural Requirement (PR) No. 29.

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(cont)**F20.3 Additional Requirements for Nitrogen Generator Systems on Tankers, including Chemical Tankers, to which SOLAS regulation II-2/4.5.5.1 applies**

F20.3.1 The following requirements apply where a nitrogen generator system is fitted on board as required by SOLAS regulation II-2/4.5.5.1. For the purpose, the inert gas is to be produced by separating air into its component gases by passing compressed air through a bundle of hollow fibres, semi-permeable membranes or adsorber materials.

F20.3.2 In addition to the applicable requirements of Ch. 15 of the FSS Code, as amended by MSC.367(93), the nitrogen generator system is to comply with SOLAS regulations II-2/4.5.3.4.2, 4.5.6.3 and 11.6.3.4.

F20.3.3 A nitrogen generator is to consist of a feed air treatment system and any number of membrane or adsorber modules in parallel necessary to meet paragraph 2.2.1.2.4 of Ch.15 of the FSS Code, as amended by MSC.367(93).

F20.3.4 The nitrogen generator is to be capable of delivering high purity nitrogen in accordance with paragraph 2.2.1.2.5 of Ch.15 of the FSS Code, as amended by MSC.367(93). In addition to paragraph 2.2.2.4 of Ch.15 of the FSS Code, as amended by MSC.367(93), the system is to be fitted with automatic means to discharge "off-spec" gas to the atmosphere during start-up and abnormal operation.

F20.3.5 The system is to be provided with one or more compressors to generate enough positive pressure to be capable of delivering the total volume of gas required by 2.2.1.2 of the FSS Code, as amended by MSC.367(93). Where two compressors are provided, the total required capacity of the system is preferably to be divided equally between the two compressors, and in no case is one compressor to have a capacity less than 1/3 of the total capacity required.

F20.3.6 The feed air treatment system fitted to remove free water, particles and traces of oil from the compressed air as required by 2.4.1.2 of Ch.15 of the FSS Code, as amended by MSC.367(93), is also to preserve the specification temperature.

F20.3.7 The oxygen-enriched air from the nitrogen generator and the nitrogen-product enriched gas from the protective devices of the nitrogen receiver are to be discharged to a safe location* on the open deck.

F20.3.8 In order to permit maintenance, means of isolation are to be fitted between the generator and the receiver.

*) "safe location" needs to address the two types of discharges separately:

1. oxygen-enriched air from the nitrogen generator - safe locations on the open deck are:
 - outside of hazardous area;
 - not within 3m of areas traversed by personnel; and
 - not within 6m of air intakes for machinery (engines and boilers) and all ventilation inlets.
2. nitrogen-product enriched gas from the protective devices of the nitrogen receiver - safe locations on the open deck are:
 - not within 3m of areas traversed by personnel; and
 - not within 6m of air intakes for machinery (engines and boilers) and all ventilation inlets/outlets.

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(cont)**F20.4 Nitrogen /Inert Gas Systems Fitted for Purposes other than Inerting Required by SOLAS Reg. II-2/4.5.5.1 and 4.5.5.2**

F20.4.1 This section applies to systems fitted on oil tankers, gas tankers or chemical tankers to which SOLAS regulations II-2/4.5.5.1 and 4.5.5.2 do not apply.

F20.4.2 Paragraphs 2.2.2.2, 2.2.2.4, 2.2.4.2, 2.2.4.3, 2.2.4.5.1.1, 2.2.4.5.1.2, 2.2.4.5.4, 2.4.1.1, 2.4.1.2, 2.4.1.3, 2.4.1.4, 2.4.2.1 and 2.4.2.2 of Ch.15 of the FSS Code, as amended by MSC.367(93), as applicable apply to the systems.

F20.4.3 The requirements of section F20.3 apply except paragraphs F20.3.1, F20.3.2, F20.3.3 and F20.3.5.

F20.4.4 Materials used in inert gas systems are to be suitable for their intended purpose in accordance with the Rules of the Classification Society.

F20.4.5 All the equipment is to be installed on board and tested under working conditions to the satisfaction of the Surveyor.

F20.4.6 The two non-return devices as required by paragraph 2.2.3.1.1 of Ch.15 of the FSS Code, as amended by MSC.367(93) are to be fitted in the inert gas main. The non-return devices are to comply with 2.2.3.1.2 and 2.2.3.1.3 of Ch.15 of the FSS Code, as amended by MSC.367(93); however, where the connections to the cargo tanks, to the hold spaces or to cargo piping are not permanent, the non-return devices required by paragraph 2.2.3.1.1 of Ch.15 of the FSS Code, as amended by MSC.367(93) may be substituted by two non-return valves.

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