Regulation of 27 December 2016 concerning amendments to Regulations on the construction of ships and amendments to other regulations

Legal basis: Laid down by the Norwegian Maritime Authority on 27 December 2016 under the Act of 16 February 2007 No. 9 relating to ship safety and security (Ship Safety and Security Act) sections 2, 6, 9, 11, 21, 28a, 29, 30 and 45, cf. Formal Delegation of 16 February 2007 No. 171, Formal Delegation of 31 May 2007 No. 590 and Formal Delegation of 19 August 2013 No. 1002.

I

Regulations of 1 July 2014 No. 1072 on the construction of ships are amended as follows:

Section 3 first paragraph should read:

(1) SOLAS consolidated edition 2014, chapter II-1, as amended by MSC.365(93) *and MSC.392(95)*, shall apply as regulation for:

a) cargo ships of 500 gross tonnage and upwards engaged on foreign voyages;
b) passenger ships engaged on foreign voyages.

II

Regulations of 1 July 2014 No. 1099 on fire protection on ships are amended as follows:

Section 2 first paragraph (a) should read:

a) the International Convention for the Safety of Life at Sea, 1974 (SOLAS), consolidated edition 2014, chapter II-2, as amended by MSC.365(93), MSC.380(94) *and MSC.392(95).*

III

Regulations of 5 September 2014 No. 1191 on a safety management system for Norwegian ships and mobile offshore units are amended as follows:

Section 1 first paragraph (b) should read:

b) *passenger ships using fuel with a flashpoint of less than 60°C, which are certified to carry more than 12 passengers*;

Section 1 first paragraph current subparagraphs (b) to (f) become subparagraphs (c) to (g).

Section 3 new third paragraph should read:

Mobile offshore units not transiting from one area to another as part of the unit's normal operational concept, are exempt from the requirements of this section.

Section 4 new sixth paragraph should read:

Mobile offshore units not transiting from one area to another as part of the unit's normal operational concept, are exempt from the requirements of this section.

IV

Regulations of 22 December 2011 No. 1523 on qualifications and certificates for seafarers are amended as follows:

Section 19 sixth paragraph should read:

(6) For renewal of certificates of proficiency, cf. Annex I table B-1/2, a valid medical certificate for employees on board ship and completed approved refresher safety course is required. Further conditions for renewal are laid down in the specific provisions on certificates of proficiency.

Section 69 should read:

Section 69 Requirements for training and qualifications for seafarers assigned specific duties on ships using fuel with a flashpoint of less than 60°C.

(1) Seafarers assigned specific duties and responsibilities associated with the care of, use of or in emergency response to fuel on board ships using fuel with a flashpoint of less than 60°C, shall no later than 1 July 2018 hold a certificate of proficiency in basic training for service on ships using fuel with a flashpoint of less than 60°C.

(2) The certificate of proficiency in basic training for service on ships using fuel with a flashpoint of less than 60°C may be issued to candidates who, in addition to having completed basic safety training, cf. section 9, have completed basic training which covers the competences of Annex IX table A-V/3-1.

(3) Competence as referred to in the second paragraph shall be demonstrated as set out in Annex IX table A-V/3-1 column 3 of the proficiencies specified in column 2 in accordance with the evaluation criteria specified in column 4.

(4) Seafarers holding a certificate of proficiency as required by section 57 or 58 satisfy the requirements of the first paragraph.

(5) Seafarers who have three months of seagoing service in the period from 1 January 2013 to 31 December 2017 on a ship using fuel with a flashpoint of less than 60°C and who can document training which covers the competences of Annex IX table A-V/3-1, satisfy the requirements for certificate of proficiency pursuant to the second paragraph. Applications for the issue of the certificate of proficiency pursuant to this paragraph, cf. second paragraph, must be submitted to the Norwegian Maritime Authority by 1 January 2018.

(6) The certificate of proficiency required pursuant to this provision may be renewed when the candidate can document a specially arranged refresher course or three months of seagoing service over the last five years. The seagoing service shall include duties and responsibilities as referred to in the first paragraph and shall be served on a ship using fuel with a flashpoint of less than 60 °C or in a position which includes equivalent tasks on a gas tanker.

New section 69 a should read:

Section 69 a Requirements for training and qualifications for seafarers with immediate responsibility for the care and use of fuels with a flashpoint of less than 60°C

(1) Masters, engineer officers and personnel with immediate responsibility for the care and use of fuels and fuel systems on ships using fuel with a flashpoint of less than 60°C, shall no later than 1 July 2018 hold a certificate of proficiency in advanced training for service on ships using

fuel with a flashpoint of less than 60°C.

(2) The certificate of proficiency in advanced training for service on ships using fuel with a flashpoint of less than 60°C may be issued to candidates who, in addition to meeting the requirements for the issue of a certificate of proficiency pursuant to section 69, have:

- *a) completed approved advanced training which covers the competences of Annex IX table A-V/3-2;*
- *b) completed one month of approved seagoing service that includes three bunkering operations on board ships using fuel with a flashpoint of less than 60°C. Two of the three bunkering operations may be replaced by approved simulator training, if the simulator training forms part of the training pursuant to subparagraph a of this paragraph.*

(3) Competence as referred to in the second paragraph shall be demonstrated as set out in Annex IX table A-V/3-2 column 3 of the proficiencies specified in column 2 in accordance with the evaluation criteria specified in column 4.

(4) Masters, engineer officers and personnel as referred to in the first paragraph who hold a certificate of proficiency pursuant to section 58, satisfy the requirements of the first paragraph of this provision when they have:

- *a) three months of seagoing service during the last five years on ships using fuel with a flashpoint of less than 60°C or on gas carriers carrying fuels with a flashpoint of less than 60°C; or*
- *b) taken part in three bunkering operations on board ships using fuel with a flashpoint of less than 60°C. Two of the three bunkering operations may be replaced by:*
  - *i. approved simulator training that forms part of the training required pursuant to the second paragraph (a); or*
  - *ii. three completed loading operations on board a gas carrier.*

(5) Masters, engineer officers and personnel who have three months of seagoing service in the period from 1 January 2013 to 31 December 2017 on a ship using fuel with a flashpoint of less than 60°C and who can document training which covers the competences of Annex IX table A-V/3-2, satisfy the requirements for the certificate of proficiency pursuant to the second paragraph. Applications for the issue of the certificate of proficiency pursuant to this paragraph, cf. second paragraph, must be submitted to the Norwegian Maritime Authority by 1 January 2018.

(6) The certificate of proficiency required pursuant to this provision may be renewed when the candidate can document a specially arranged refresher course or three months of seagoing service over the last five years. The seagoing service shall include responsibility for the care and use of fuel and fuel systems on ships using fuel with a flashpoint of less than 60°C or in a position which includes equivalent tasks on a gas carrier.

Table B-I/2 is amended as follows:

A new row with the following text is added below the row with the requirements pursuant to regulation V/2.

V/3	*Certificate of Proficiency - For masters, officers, ratings and other personnel on ships using fuel with a flashpoint of less than 60°C*	*No*	*Yes*	*Yes*

Appendix IX should read:

Table A-V/3-1
Specification of minimum standard of competence in basic training for ships using fuel with a flashpoint of less than 60°C

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Contribute to the safe operation of a ship using fuel with a flashpoint of less than 60°C	Design and operational characteristics of ships using fuel with a flashpoint of less than 60°C Basic knowledge of ship using fuel with a flashpoint of less than 60°C, their fuel systems and fuel storage systems: .1 fuels addressed by the IGF Code .2 types of fuel systems subject to the IGF Code .3 atmospheric, cryogenic or compressed storage of fuels on board ships using fuel with a flashpoint of less than 60°C .4 general arrangement of fuel storage systems on board ships using fuel with a flashpoint of less than 60°C .5 hazard zones and areas .6 typical fire safety plan .7 monitoring, control and safety systems aboard ships using fuel with a flashpoint of less than 60°C Basic knowledge of fuels and fuel storage systems' operations on board ships using fuel with a flashpoint of less than 60°C: .1 piping systems and valves .2 atmospheric, compressed or cryogenic storage .3 relief systems and protection screens	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Communications within the area of responsibility are clear and effective Operations related to ships using fuel with a flashpoint of less than 60°C are carried out in accordance with accepted principles and procedures to ensure safety of operations

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	.4 basic bunkering operations and bunkering systems .5 protection against cryogenic accidents .6 fuel leak monitoring and detection Basic knowledge of the physical properties of fuels on board ships using fuel with a flashpoint of less than 60°C, including: .1 properties and characteristics .2 pressure and temperature, including vapour pressure/temperature relationship Knowledge and understanding of safety requirements and safety management on board ships using fuel with a flashpoint of less than 60°C		
Take precautions to prevent hazards on a ship using fuel with a flashpoint of less than 60°C	Basic knowledge of the hazards associated with operations on ships using fuel with a flashpoint of less than 60°C, including: .1 health hazards .2 environmental hazards .3 reactivity hazards .4 corrosion hazards .5 ignition, explosion and flammability hazards .6 sources of ignition .7 electrostatic hazards .8 toxicity hazards .9 vapour leaks and clouds .10 extremely low	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Correctly identifies, on a Safety Data Sheet (SDS), relevant hazards to the ship and to personnel, and takes the appropriate actions in accordance with established procedures Identification and actions on becoming aware of a hazardous situation conform to established procedures in line with best practice

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	temperatures .11 pressure hazards .12 fuel batch differences Basic knowledge of hazard controls: .1 emptying, inerting, drying and monitoring techniques .2 anti-static measures .3 ventilation .4 segregation .5 inhibition .6 measures to prevent ignition, fire and explosion .7 atmospheric control .8 gas testing .9 protection against cryogenic damage (LNG) Understanding of fuel characteristics on ships using fuel with a flashpoint of less than 60°C as found on a Safety Data Sheet (SDS)		
Apply occupational health and safety precautions and measures	Awareness of function of gas-measuring instruments and similar equipment: .1 gas testing Proper use of specialized safety equipment and protective devices, including: .1 breathing apparatus .2 protective clothing .3 resuscitators .4 rescue and escape equipment	Examination or assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures and safe working practices designed to safeguard personnel and the ship are observed at all times Appropriate safety and protective equipment is correctly used First aid dos and don'ts

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	Basic knowledge of safe working practices and procedures in accordance with legislation and industry guidelines and personal shipboard safety relevant to ships using fuel with a flashpoint of less than 60°C, including: .1 precautions to be taken before entering hazardous spaces and zones .2 precautions to be taken before and during repair and maintenance work .3 safety measures for hot and cold work Basic knowledge of first aid with reference to a Safety Data Sheet (SDS)		
Carry out firefighting operations on a ship using fuel with a flashpoint of less than 60°C	Fire organization and action to be taken on ships using fuel with a flashpoint of less than 60°C Special hazards associated with fuel systems and fuel handling on ships using fuel with a flashpoint of less than 60°C Firefighting agents and methods used to control and extinguish fires in conjunction with the different fuels found on board ships using fuel with a flashpoint of less than 60°C Firefighting system operations	Practical exercises and instruction conducted under approved and truly realistic training conditions (e.g. simulated shipboard conditions) and, whenever possible and practicable, in darkness	Initial actions and follow-up actions on becoming aware of an emergency conform with established practices and procedures Action taken on identifying muster signals is appropriate to the indicated emergency and complies with established procedures Clothing and equipment are appropriate to the nature of the firefighting operations The timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions Extinguishment of

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
			fire is achieved using appropriate procedures techniques and firefighting agents
Respond to emergencies	Basic knowledge of emergency procedures, including emergency shutdown	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The type and impact of the emergency is promptly identified and the response actions conform to the emergency procedures and contingency plans
Take precautions to prevent pollution of the environment from the release of fuels found on ships using fuel with a flashpoint of less than 60°C	Basic knowledge of measures to be taken in the event of leakage/spillage/ venting of fuels from ships using fuel with a flashpoint of less than 60°C, including the need to: .1 report relevant information to the responsible persons .2 awareness of shipboard spill/leakage/venting response procedures .3 awareness of appropriate personal protection when responding to a spill/ leakage of fuels addressed by the IGF Code	Examination or assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures designed to safeguard the environment are observed at all times

Table A-V/3-2

Specification of minimum standard of competence in advanced training for ships using fuel with a flashpoint of less than 60°C

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
Familiarity with physical and chemical properties of fuels aboard ships using fuel with a flashpoint of less than 60°C	Basic knowledge and understanding of simple chemistry and physics and the relevant definitions related to safe bunkering and use of fuels used on board ships using fuel with a flashpoint of less than 60°C, including: .1 the chemical structure of different fuels used on board ships using fuel with a flashpoint of less than 60°C .2 the properties and characteristics of fuels used on board ships using fuel with a flashpoint of less than 60°C, including: .2.1 simple physical laws .2.2 states of matter .2.3 liquid and vapour densities .2.4 boil-off and weathering of cryogenic fuels .2.5 compression and expansion of gases .2.6 critical pressure and temperature of gases .2.7 flashpoint, upper and lower flammable limits, auto-ignition temperature .2.8 saturated vapour pressure/reference temperature .2.9 dewpoint and bubble point .2.10 hydrate formation .2.11 combustion	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Effective use is made of information resources for identification of properties and characteristics of fuels addressed by the IGF Code and their impact on safety, environmental protection and ship operation

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	properties: heating values .2.12 methane number/ knocking .2.13 pollutant characteristics of fuels addressed by the IGF Code .3 the properties of single liquids .4 the nature and properties of solutions .5 thermodynamic units .6 basic thermodynamic laws and diagrams .7 properties of materials .8 effect of low temperature, including brittle fracture, for liquid cryogenic fuels Understanding the information contained in a Safety Data Sheet (SDS) about fuels addressed by the IGF Code		
Operate controls of fuel related to propulsion plant and engineering systems and services and safety devices on ships using fuel with a flashpoint of less than 60°C	Operating principles of marine power plants Ships' auxiliary machinery Knowledge of marine engineering terms	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Plant, auxiliary machinery and equipment is operated in accordance with technical specifications and within safe operating limits at all times
Ability to safely perform and monitor all operations related to the fuels used on board ships using fuel with a flashpoint of less than 60°C	Design and characteristics of ships using fuel with a flashpoint of less than 60°C Knowledge of ship design, systems, and equipment found on ships using fuel	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service	Communications are clear and understood Successful ship operations using fuels addressed by the IGF Code are

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	with a flashpoint of less than 60°C, including: .1 fuel systems for different propulsion engines .2 general arrangement and construction .3 fuel storage systems on board ships using fuel with a flashpoint of less than 60°C, including materials of construction and insulation .4 fuel-handling equipment and instrumentations on board ships: .4.1 fuel pumps and pumping arrangements .4.2 fuel pipelines .4.3 expansion devices .4.4 flame screens .4.5 temperature monitoring systems .4.6 fuel tank level-gauging systems .4.7 tank pressure monitoring and control systems .5 cryogenic fuel tanks temperature and pressure maintenance .6 fuel system atmosphere control systems (inert gas, nitrogen), including storage, generation and distribution .7 toxic and flammable gas-detecting systems .8 fuel Emergency Shut Down system (ESD)	experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	carried out in a safe manner, taking into account ship designs, systems and equipment Pumping operations are carried out in accordance with accepted principles and procedures and are relevant to the type of fuel Operations are planned, risk is managed and carried out in accordance with accepted principles and procedures to ensure safety of operations and to avoid pollution of the marine environment

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	Knowledge of fuel system theory and characteristics, including types of fuel system pumps and their safe operation on board ships using fuel with a flashpoint of less than 60°C .1 low pressure pumps .2 high pressure pumps .3 vaporizers .4 heaters .5 pressure build-up units Knowledge of safe procedures and checklists for taking fuel tanks in and out of service, including: .1 inerting .2 cooling down .3 initial loading .4 pressure control .5 heating of fuel .6 emptying systems		
Plan and monitor safe bunkering, stowage and securing of the fuel on board ships using fuel with a flashpoint of less than 60°C	General knowledge of ships using fuel with a flashpoint of less than 60°C Ability to use all data available on board related to bunkering, storage and securing of fuels addressed by the IGF Code Ability to establish clear and concise communications and between the ship and the terminal, truck or the bunker supply ship Knowledge of safety and emergency procedures for operation of machinery, fuel and control systems for ships using fuel with a flashpoint of less than 60°C Proficiency in the	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved simulator training .3 approved training programme .4 approved laboratory equipment training or witnessing bunker operation	Fuel quality and quantity is determined taking into account the current conditions and necessary corrective safe measures are taken Procedures for monitoring safety systems to ensure that all alarms are detected promptly and acted upon in accordance with established procedures Operations are planned and carried out in accordance with fuel transfer manuals and

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	operation of bunkering systems on board ships using fuel with a flashpoint of less than 60°C, including: .1 bunkering procedures .2 emergency procedures .3 ship-shore/ship-ship interface .4 prevention of rollover Proficiency to perform fuel system measurements and calculations, including: .1 maximum fill quantity .2 On Board Quantity (OBQ) .3 Minimum Remain On Board (ROB) .4 fuel consumption calculations Ability to ensure the safe management of bunkering and other operations related to fuel with a flashpoint of less than 60°C concurrent with other onboard operations, both in port and at sea		procedures to ensure safety of operations and avoid spill damage and pollution of the environment Personnel are allocated duties and informed of procedures and standards of work to be followed, in a manner appropriate to the individuals concerned and in accordance with safe working procedures
Take precautions to prevent pollution of the environment from the release of fuels from ships using fuel with a flashpoint of less than 60°C	Knowledge of the effects of pollution on humans and environment Knowledge of measures to be taken in the event of spillage/leakage/ venting	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Procedures designed to safeguard the environment are observed at all times
Monitor and control compliance with legislative requirements	Knowledge and understanding of relevant provisions of the	Assessment of evidence obtained from one or more of	The handling of fuels on board ships using fuel with a flashpoint

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	International Convention for the Prevention of Pollution from Ships (MARPOL), as amended and other relevant IMO instruments, industry guidelines and port regulations as commonly applied Proficiency in the use of the IGF Code and related documents	the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training	of less than 60°C complies with relevant IMO instruments and established industrial standards and codes of safe working practices Operations are planned and performed in conformity with approved procedures and legislative requirements
Take precautions to prevent hazards	Knowledge and understanding of the hazards and control measures associated with fuel system operations on board ships using fuel with a flashpoint of less than 60°C, including: .1 flammability .2 explosion .3 toxicity .4 reactivity .5 corrosivity .6 health hazards .7 inert gas composition .8 electrostatic hazards .9 pressurized gases .10 low temperature Proficiency to calibrate and use monitoring and fuel detection systems, instruments and equipment on board ships using fuel with a flashpoint of less than 60°C Knowledge and understanding of dangers of non-compliance with	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Relevant hazards to the ship and to personnel associated with operations on board ships using fuel with a flashpoint of less than 60°C are correctly identified and proper control measures are taken Use of flammable and toxic gas detection devices are in accordance with manuals and good practice

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	relevant rules/regulations Knowledge and understanding of risk assessment method analysis on board ships using fuel with a flashpoint below 60°C Ability to elaborate and develop risk analyses related to risks on board ships using fuel with a flashpoint of less than 60°C Ability to elaborate and develop safety plans and safety instructions for ships using fuel with a flashpoint of less than 60°C Knowledge of hot work, enclosed spaces and tank entry including permitting procedures		
Apply occupational health and safety precautions and measures on board a ship using fuel with a flashpoint of less than 60°C	Proper use of safety equipment and protective devices, including: .1 breathing apparatus and evacuating equipment .2 protective clothing and equipment .3 resuscitators .4 rescue and escape equipment Knowledge of safe working practices and procedures in accordance with legislation and industry guidelines and personal shipboard safety, including: .1 precautions to be taken before, during and after repair and maintenance work on fuel systems addressed in the IGF Code .2 electrical safety (reference to IEC 60079-	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	Appropriate safety and protective equipment is correctly used Procedures designed to safeguard personnel and the ship are observed at all times Working practices are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns First aid dos and don'ts

Column 1	Column 2	Column 3	Column 4
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**
	17) .3 ship/shore safety checklist Basic knowledge of first aid with reference to a Safety Data Sheets (SDS) for fuels addressed by the IGF Code		
Knowledge of the prevention, control and firefighting and extinguishing systems on board ships using fuel with a flashpoint of less than 60°C	Knowledge of the methods and firefighting appliances to detect, control and extinguish fires of fuels addressed by the IGF Code	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience .3 approved simulator training .4 approved training programme	The type and scale of the problem is promptly identified, and initial actions conform with the emergency procedures for fuels addressed by the IGF Code Evacuation, emergency shutdown and isolation procedures are appropriate to the fuels addressed by the IGF Code

V

These amendments enter into force on 1 January 2017.