

Appendix I

Regulatory Requirements for Active Systems Associated with Fire

The HSC Code subdivides Active Design Systems in 4 groups of which only the first three have been considered for project purposes, namely:

- 1) Part A - GENERAL;
- 2) Part B - REQUIREMENTS FOR PASSENGER CRAFT;
- 3) Part C - REQUIREMENTS FOR CARGO CRAFT.

This subdivision has been followed in the summary table that is structured as follows. In the first column (**ID**) an identification number is given. In the second column (**Name**) the name of the component/system is reported. In the third column (**Characteristics**), the distinguishing features of the component/system are provided. In the fourth column (**Notes**), additional information (if any) are given. The last column (**Priority**) is left blank for the moment and will indicate the relative priority of ADS.

Parameter			Notes	Priority
ID	Name	Characteristics		
PART A - GENERAL				
1	Heat detector	Distance between centers	Max. 9 m	
		Floor area per detector	Max. 37 m ²	
		Distance away from bulkhead	Max 4.5 m	
		Temperature to operate	Before T>78 °C but not until T>54 °C	
2	Smoke detector	Distance between centers	Max. 11 m	
		Floor area per detector	Max. 74 m ²	
		Distance away from bulkhead	Max 5.5 m	
		Time to operate	Before smoke density > 12.5% obscuration per meter but not until 2% obscuration per meter.	
		Position of discharge nozzles	Min.: uniform distribution of medium	
		Means to close all openings which may admit air		
		Means that allow gas to escape		
3	Fixed fire extinguishing systems	Quantity of medium (gas) extinguishing system	Min.: sufficient to provide 2 independent discharges; if there are local-fire-suppression systems, a second discharge need not be required (refer to Guidelines for the approval of water-based local application of fixed fire-suppression systems)	
		Quantity of medium available to protect several spaces	No more than the largest quantity required for any one space so protected	
		Check of the quantity of fire-extinguishing medium in the stowage container	Safe / unsafe	
		Means for automatically giving audible warning of the release of medium	Audible period: min. 20 s, max. suitable period	
		Accessibility of means of control		
		Activation of means of control	Simple or not	
		Instructions relating to the operation of the system	Clear / not clear	

Parameter			Notes	Priority
ID	Name	Characteristics		
PART A - GENERAL				
4	Fixed fire extinguishing systems for special category space and ro-ro space	Spacing and location of detectors		
		Arrangement of manually operated call points	Min. 1 is placed close to each exit from such spaces	
		Distance between manually operated call points	No part of the space is more than 20 m from a manually operated call point	
		Number/arrangement of portable fire extinguishers	Min.: no point in the space is more than approximately 15 m. walking distance from an extinguisher and min. 1 is located at each access to such space	
		Number of water fog applicator	Min.: 3 in each special category space and ro-ro space	
		Number of portable foam applicator unit: air foam nozzle + fire hoses + portable tank containing foam + one spare tank	Min.: 1 for each spaces	
		Capacity of foam tank	Min. 20 liters	
		Capacity of nozzle	Min.: capable to of producing effective foam suitable for extinguishing an oil fire of 1.5 m ³ /min	
5	Carbon dioxide systems	Volume of free carbon dioxide for cargo spaces	Min. equal to 30% of the gross volume of the largest cargo spaces protected	
		Volume of free carbon dioxide for machinery spaces	Min. equal to 40% of the gross volume of the largest machinery spaces protected excluding a part of the casing or min. equal to 35% of the gross volume of the largest machinery spaces protected not excluding the casing (if cargo craft < 2000 gross tonnage, the percentage may be reduced to 35% and 30% respectively)	
		Flux of carbon dioxide for machinery spaces	Min. 85% of the gas discharged into the space within 2 minutes	
		Number of controls	Min. 2 controls; normally one is used to discharge gas from its storage containers, the other for opening the valve of the piping which conveys the gas into the spaces	
		Location of the controls	Clear / not clear	
6	Portable fire extinguishers	Number of portable fire extinguishers	Min. 5 portable fire extinguishers : control stations, public spaces, crew accommodation, corridors and service spaces	
		Availability	Ready / not ready	

		Number of extinguisher suitable for machinery spaces	Min. 1 extinguisher suitable	
Parameter			Notes	Priority
ID	Name	Characteristics		
PART A - GENERAL				
7	Fire pumps, fire mains, hydrants and hoses	Number of fire pumps	Min. 2 independently driven pump	
		Capacity of each pump	Min. 25 m ³ /h	
		Arrangement of hydrants	Any location on the craft can be reached by the water jets from two fire hoses from two different hydrants	
		Length of fire hoses	Max. length approved by the Administration	
		Availability	Ready for use near the hydrants	
		Number of fire hoses	Min. one for each hydrant	
		Number of nozzles	Min. one for each fire hoses	
		Type of nozzles	Dual purpose approved type: i.e. spray/jet type	
8	Protection of deep-fat cooking equipment:	Automatic or manual fixed fire-extinguishing system	Min: 1 for each equipment (refer to ISO 15371- Ships and marine technology - Fire extinguishing systems for protection of galley deep-fat cooking equipment - Fire tests)	
		Type of thermostat	A primary and back-up thermostat with an alarm to alert the operator	
		Type of arrangements shutting off the electrical power	Min. automatic	
		Alarm for indicating operation of the fire-extinguishing system in the galley		

Parameter			Notes	Priority
ID	Name	Characteristics		
PART B - REQUIREMENTS FOR PASSENGER CRAFT¹				
1	Fixed sprinkler system	Number of fixed sprinkler systems	Min. 1 for each public spaces, service spaces, crew accommodation areas where sleeping berths are provided, storage rooms and similar spaces (for different type and design refer to MSC.44(65))	
		Manually operated sprinkler systems	Min. divided in a number of sections of appropriate size	
		Valves for each section, start of sprinkler pumps and alarms capable of being operated from two spaces separated as widely as possible	Min. one is continuously manned control station	

Parameter			Notes	Priority
ID	Name	Characteristics		
PART C - REQUIREMENTS FOR CARGO CRAFT				
1	Automatic smoke-detection system	Number of automatic smoke-detection systems	Min. one in each cargo spaces except open deck areas or refrigerated holds	
		Presence of protection system	Min. an approved fixed quick-acting fire-extinguishing system operable from control station	
		Number of fixed sprinkler systems	Min. one each crew accommodation with sleeping berths, having a total deck area >50m ² -including corridors serving such accommodation	

¹ In category A craft only if smoking is permitted; sales shops, galleys, service spaces, ro-ro spaces and cargo spaces are fitted; the maximum number of passenger carried exceed 200 and the voyage duration at operational speed from departure port to destination when fully laden exceed 2 hours