



Electrical default	Faulty wiring to alarm system
	Clogging of sampling pipe
	Failure to reactivate detection zones
Design	Sampling pipes too large dilute smoke
External cond	Smoke ventilated away from sampling points due to weather conditions (e.g. high wind, pressure)
	Physical/mechanical damage to sample piping
External cond	Fire without smoke
Human element	Insufficient knowledge to interpret the alarm message
Human element	Competing tasks / high workload
	Atmospheric icing clogging detectors
External cond	Atypical fire event (e.g. decomposition of chemicals that release heat, smouldering)
	Corrosion impeding sampling rate
	Error in addressable alarm system
	Fault of airflow detector in the system / amount of air drawn into the system too low
Design	Numbers of sampling points and location.
	Effect of mechanical ventilation in the holds / impact on smoke spread
	Insufficient testing in the commissioning process and/or after maintenance (e.g. system not sufficiently designed)
	Smoke cooled and not buoyant enough to get to sampling pipes
	Default / wrong position of the 3 way-valve (if connected to the CO2 piping system)
	Condition of the container of fire origin
Air tightness	Air tightness of cargo hold and/or hold hatches open
	The sampling pipes are too long (e.g. due to size of ship)
	Failure of detector due to improper maintenance
	Alarm not acknowledged by crew
Air tightness	Hatch covers open (port scenario)
	Build up of explosive gases or explosion itself

# Annex H

# CARGOSAFE