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GUIDELINES FOR THE ASSESSMENT OF THERMAL PROTECTION

1 The Maritime Safety Committee, at its seventy-fifth session (15 to 24 May 2002), recognizing the need for systematised guidelines for thermal protection of crews and passengers according to environmental factors and for appropriate performance standards for additional thermal protective equipment, approved Guidelines for the assessment of thermal protection, as set out in the annex.

2 Member Governments are invited to bring the annexed Guidelines to the attention of all parties concerned, as appropriate.

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ANNEX

GUIDELINES FOR ASSESSMENT OF THERMAL PROTECTION

1 Introduction

In considering appropriate thermal protective equipment for use on ships operating in various climatic conditions, Administrations and ship operators should take into account all of the relevant risk factors, to include type of ship, type of survival craft, number of persons on board, environmental conditions in the operational area, and availability of SAR services. The purpose of these Guidelines is to provide information to assist in the assessment of the impact of environmental factors, and specifically water temperature on equipment selection. In the context of the medical threat of hypothermia, the IMO publication "A Pocket Guide to Cold Water Survival" should be referred.

2 THERMAL PROTECTIVE PERFORMANCE

In addition to the performance requirements specified in the International Life-Saving Appliance (LSA) Code, there are some data available which illustrate the performance of the equipment at different water temperatures. Thermal protective performance for the various types of equipment at these temperatures is defined as the time to reach a deep body temperature of 35°C or reduce a deep body temperature by 2°C, which is the point at which a significant degree of incapacitation is expected to occur. These data were obtained by a combination of theoretical and experimental methods. While based upon the best information available, they are provided for comparison purposes only. Individual results may vary greatly based on sea conditions, body type, etc.

Table 1: ***Thermal protective performance by type of personal life-saving appliances***

Thermal protective means. (Clothing is generally included)	**IMO minimum test requirements**			**Time (hrs) for core temperature drop of 2°C or to 35°C when exposed to water of temperature**			
	Time (h)	**Water temp. (°C)**		**0° C**	**5° C**	**10° C**	**20° C**
Lifejacket	-*	-		-	0.5 h	0.8 h	1.7 h
Thermal protective (TP) lifejacket	2 h	10		0.5 h	0.75 h	2 h	4 h
Anti-exposure suit	1 h	5		1.5 h	2 h	4 h	10 h
Immersion suit uninsulated	1 h	5		1.5 h	2 h	5 h	>12 h
Immersion suit insulated	6 h	2		6 h	>12 h	>12 h	>12 h

* No IMO requirements

3 Temperature range and geographical sectors

The sea areas subject to these temperatures vary greatly throughout the year and do not always uniformly follow specified latitudes. Table 2 illustrates the approximate variation of water temperature with latitude during the coldest months of the year in the northern and southern hemispheres. More exact information on seawater temperature can be found at www.nodc.noaa.gov/dsdt/oisst/index.html or appropriate local sources.

Table 2: ***Variation of seawater temperature with latitude***

Temperature range (^{o}C)	**Geographical sectors (degree latitude)**	
	(North)	**(South)**
Above 20	0-30	0-30
20 – 10	30-50	30-45
10 – 5	50-60	45-50
Below 5*	60-70	50-60

* All areas of icing conditions as defined in resolution A.749(18) - Code on Intact Stability, should be included in this range.