

LOOKOUTS
COMMUNICATION
ESCAPE ROUTES
SAFETY ZONES

Volusia County Fire Services Safety Gram



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Heat Stress

Heat stress may cause serious illness from heat cramps, heat exhaustion, and heat stroke. There are measures that a firefighter may use to prevent heat stress illness with physical fitness, hydration and using the rehabilitation policy.

Firefighters prevent heat disorders by improving their level of fitness and becoming acclimated to the heat. By maintaining aerobic fitness firefighters will have a well-developed circulatory system and increased blood flow. This causes the body to regulate body temperature and lower heart rate. Fit firefighters will adjust twice as fast as an unfit firefighter.

Being aerobically fit is only one of the key elements, drinking plenty of water is another element. At the beginning of the shift drink extra fluid such as; one to two cups of water, juice, or sport drink to assist you for the hot day ahead. Cooler on board apparatus must be cleaned and refreshed each day with ice and water. While working, take several fluid breaks every hour, drinking at least one quart of fluid. Drink as much as you can during the lunch break. Water is most important during work in the heat. Electrolyte sport drinks will also assist in retaining fluids, electrolytes, and maintaining energy levels.

Battalion Commanders shall be aware of the need for hydration during a motor vehicle accident, structure fire and brush fire. Commanders shall consider the circumstances of each incident and make adequate provisions early in the incident for the rest and rehabilitation for all members operating at the scene. The Incident Commander must call out a second or third alarm to meet the criteria of Incident Personnel Rehabilitation S.O.G. 103.002.

Lieutenants shall maintain an awareness of the condition of each member operating within their span of control and ensure that adequate steps are taken to provide for each member's safety and health. The command structure shall be utilized to request relief and the reassignment of fatigued crew.

There is no excuse for heat exhaustion, heat stroke, and any injuries due to fatigue on the fire ground.

Refer to Incident Personnel Rehabilitation S.O.G. 103.002.

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Dispersion level Chart

Dispersion Range 0-40 is stable air, low fire intensity, less long range spotting.

Dispersion Range 41-70 is moderate unstable air, increased fire intensity and long range spotting.

Dispersion Range 70+ is unstable air, high amount of upper lifting, intense fire activity, potential for long range spotting and plume dominated wildfires.

Fire-line Handbook Jan. '98

- F**ight fire aggressively, but provide for safety first.
- I**nitiate all action based on current and expected fire behavior.
- R**ecognize current weather conditions and obtain forecasts.
- E**nsure instructions are given and understood.
- O**btain current information on status.
- R**emain in communication with crewmembers, your supervisor, and adjoining forces.
- D**etermine safety zones and escape routes.
- E**stablish lookouts in potentially hazardous situations.
- R**emain in control at all times.
- S**tay alert, keep calm, act decisively.

NWCG Handbook 3

HEAT STRESS INDEX

TEMPERATURE °F	RELATIVE HUMIDITY								
	10%	20%	30%	40%	50%	60%	70%	80%	90%
104	98	104	110	120	132				
102	97	101	108	117	125				
100	95	99	105	110	120	132			
98	93	97	101	106	110	125			
96	91	95	98	104	108	120	128		
94	89	93	95	100	105	111	122		
92	87	90	92	96	100	106	115	122	
90	85	88	90	92	96	100	106	114	122
88	82	86	87	89	93	95	100	106	115
86	80	84	85	87	90	92	96	100	109
84	78	81	83	85	86	89	91	95	99
82	77	79	80	81	84	86	89	91	95
80	75	77	78	79	81	83	85	86	89
78	72	75	77	78	79	80	81	83	85
76	70	72	75	76	77	77	77	78	79
74	68	70	73	74	75	75	75	76	77

NOTE: Add 10°F when protective clothing is worn and add 10°F when in direct sunlight.

HUMITURE °F	DANGER CATEGORY	INJURY THREAT
BELOW 60°	NONE	LITTLE OR NO DANGER UNDER NORMAL CIRCUMSTANCES
80° - 90°	CAUTION	FATIGUE POSSIBLE IF EXPOSURE IS PROLONGED AND THERE IS PHYSICAL ACTIVITY
90° - 105°	EXTREME CAUTION	HEAT CRAMPS AND HEAT EXHAUSTION POSSIBLE IF EXPOSURE IS PROLONGED AND THERE IS PHYSICAL ACTIVITY
105° - 130°	DANGER	HEAT CRAMPS OR EXHAUSTION LIKELY, HEAT STROKE POSSIBLE IF EXPOSURE IS PROLONGED AND THERE IS PHYSICAL ACTIVITY
ABOVE 130°	EXTREME DANGER	HEAT STROKE IMMINENT!