



**50°C** Dangerously hot, especially when coupled with humidity of 80 percent or more, as is often the case in the UAE from May to September. This temperature is the equivalent of 122°F and the basis of the International Labor Organization's (ILO) standard that outdoor work halt and alternative shifts be offered. The UAE is a member of the ILO and, as such, agrees to its labor standards. In addition to adhering to the ILO's guidelines, the UAE adopted its own "Mid-Day Break" rule for workers in contracting and construction in 2005. The rule, applicable in summer months, means that between the hours of 12:30 and 3 p.m., outdoor work is prohibited in order to protect against heat exhaustion.

The labor force for construction in the UAE is vast, due to the pace of development. It is a workforce largely comprised of foreign-born laborers—from India, Bangladesh, Nepal, Sri Lanka and Pakistan—who are paid low wages, offered no benefits, and live in crowded, camp-like conditions. They often have long commutes to their workplace and limited access to food. Employers hold their passports, which is illegal, but discourages workers from filing grievances.

Before the Mid-Day Break rule was established, as many as 5000 construction workers per month were brought to the accident and emergency department of Rashid Hospital in Dubai during July and August. During summer power outages in Sharjah in 2010, a 27-year-old Indian laborer died of heatstroke shortly after being brought to an emergency ward. Heatstroke cases quadrupled and

dozens were admitted to hospitals. "Every day we receive between 30 to 50 workers suffering heat exhaustion and stroke," one hospital official reported.

Up to 60 percent of companies openly ignore the Mid-Day Break rule, which does not hinge on a specific temperature being reached, but rather a duration of heat higher than 38°C typical during summer months. The UAE has a history of not fining companies for violating the Mid-Day Break law. The ILO's 50°C standard is simply the upper limit by which the UAE government attempts to enforce the law. After three consecutive days of 50°C, night construction shifts are mandatory. In recent summers and despite global warming, the temperature has, according to local weather reports, hovered in the high-40s for weeks on end.

Heat stroke occurs when the body is unable to regulate its temperature. The body's temperature rises rapidly, the sweating mechanism fails, and the body is no longer able to cool down. Body temperature may rise to 41°C or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not provided. As a point of comparison, chocolate typically melts at 32°C, candle wax melts starting at 55°C, and the body's tissues are damaged when body temperature reaches 43°C.

Due to intense criticism and negative reports from international monitoring groups like Human Rights Watch, a few companies have hired safety managers who monitor workers' well-being while keeping the project on track. Now, a pair of Australian scientists is helping those managers become more objective in their worker safety monitoring. The researchers have launched a study to observe and document the effects of thermal stress. Using an assessment tool called the Thermal Work Limit (TWL), they have determined that most healthy people can labor under very hot conditions if they stay well hydrated and modify their pace of work according to their level of fatigue. The study, admittedly small, suggests that men of varying fitness levels and ages work harder when they arrive at the site, and remain, well-hydrated throughout the day. Despite differences in strength and endurance, well-hydrated workers maintained similar and consistent heart rates while exerting themselves in hot conditions and did not experience a rise in core body temperature. Workers most at risk were those who did not drink or had limited access to water. Workers who had inadequate sleep the night or nights before were also at risk for heat-related illness.

Next summer's heat related challenges may intensify. Construction workers laid off during Dubai's economic downturn in 2008 are increasingly desperate. Despite being homeless with little access to proper food and water, most are working odd jobs outdoors during the day and trying to get back on a construction site. They are stranded in the Emirates with no money to pay their way home, and still separated from the passports that brought them in to the country.

Contractors, whose increasing knowledge about how to keep workers healthy and productive in hot weather by providing water on the job site, must avoid exploiting a labor force that has little left to lose.