

IMPACT OF WHERE A MEASUREMENT IS TAKEN ON THE VALUE OF A HEAT STRESS INDEX

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ABSTRACT

Heat stress is an issue that affects many mines worldwide and a range of indices are used to determine the thermal comfort or safety of these environments. Heat stress indices generate a numeric values that are used to evaluate the thermal safety of hot and humid environments in mines. Heat stress indices are generated from actual measured values of properties such as air dry and wet bulb temperature, air velocity, radiant temperature and others. It is also recognized that across an airway in a mine temperature, humidity and air velocity are not constant but vary in their values. In determining a heat stress index for a location how much error is introduced by arbitrarily selecting a location to take measurements? Should all measurements be taken at the same point for a given location? This paper seeks to answer these questions.