Use of Control Banding Methods in Respirator Selection for Biohazards

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Selection of appropriate respiratory protection for biohazards which do not have published exposure limits has been the subject of much consideration over the years. Regulatory bodies and others with recognised authority have issued guidelines but these are often limited to specific hazards or workplace activities. A more generally adaptable approach is desirable.

Methods which have been exploited or proposed for selection of respiratory protection for biohazards include: reliance on expert opinion for each specific case, calculation of factors such as the probability of infection (which applies numerical data about the hazard and performance of protective equipment) or decision-making based on observed best practices. All of these methods have advantages and drawbacks.

Adoption of a control banding approach to address this need offers advantages in the simplicity of its methodology and its ready adaptability across a range of usage conditions. A control banding selection method has been developed and incorporated into the latest issue of the Canadian Standard for “Selection, Use and Care of Respirators”. This relies on selection of the type of workplace environment, assessment of the hazard level the bioaerosol poses (based on available data), and of its rate of generation and the rate of ventilation. A four-level assessment grid for each factor is used. Combination of these data through a simple algorithm gives a recommendation of an assigned protection factor from which appropriate equipment can be selected. The method has been adapted into a simple “wheel” format as a convenient aid to respirator selection.

A control banding approach is also being adopted into guidance for the province of Québec.