ACARP

Australian Coal Association Research Program

FINAL REPORT

Outbursting Scoping Study

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9.6 SEAM THICKNESS VARIATION INDEX, Mm

Seam thickness variation index is a measure of the tectonic stress which can cause local compression of the coal seam. Seam thickness variation index (Mm) is used in Bulgaria and Russia. It is based upon taking a number of measurements of seam thickness over a distance of 30 m on both sides of a roadway. The value of Mm is calculated by using the relationship (Smid et al, 1978).

$$Mm = \frac{\sqrt{\frac{1}{n}\Sigma\left(M_i^2 - \overline{M}^2\right)}}{\frac{1}{n}\Sigma Mi} \times 100 \text{ , \%} \qquad (9.14)$$

where Mi = Value of a measurement
$\overline{M}$ = Mean value
n = Number of measurement.

When pinching of seam occurs as a result of a fault, the index used is different than the above. The index then is a measure of the rate of change of seam thickness and is given by (Smid et al, 1978)

$$Z = \frac{M_{max} - M_{min}}{M_{max} \cdot l} \times 100 \text{ , \%} \qquad (9.15)$$

where M_{max} = Maximum thickness, m
M_{min} = Minimum thickness, m
l = Shortest distance