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).

\[
Mm = \left(\frac{\sum_{i=1}^{n} (M_i^2 - \overline{M}^2)}{\sum_{i=1}^{n} M_i} \right) \times 100 \%,
\]

(9.14)

where:
- \(M_i\) = 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)

\[
Z = \frac{M_{\text{max}} - M_{\text{min}}}{M_{\text{max}} \cdot l} \times 100 \%,
\]

(9.15)

where:
- \(M_{\text{max}}\) = Maximum thickness, m
- \(M_{\text{min}}\) = Minimum thickness, m
- \(l\) = Shortest distance