

D-27: Dilation associated with graphite veins: implications for graphite reserves

K V Wilbert Kehelpannala

(Geological Survey and Mines Bureau, Dehiwala)

Generally, dilation of a vein defined as the opening displacement at the crack centre was measured as the normal displacement component at the middle of the crack. The dilation of graphite veins was calculated from the veins exposed at the 170 m and 340 m levels of the Kahatagala-Kolongaha Graphite Mines (KKGm). To achieve this, thickness of all the veins, small as well as

large, exposed along these 2 levels was measured. Because the graphite veins had variable dip angles, for this calculation, the statistical mean dip angle of veins of the 2 levels was taken; for the 170 m and 340 m levels: 60° and 54°, respectively. the cumulative thickness and the calculated dilations for these 2 levels are given in the table.

<i>Level</i>	<i>Perpendicular distance between 1st & last veins</i>	<i>Cumulative thickness</i>	<i>%Dilation</i>
170 m	~ 162 m	~ 5.78 m	~ 3.57%
340 m	~ 214 m	~ 6.5 m	~ 3.04%

Taking the minimum dilation as 3%, it can be estimated that within a 100 m depth range for an area 50 x 100 m² (assuming 50 m was the average strike length of veins) of the deposit, the volume of graphite expected to be mined could be about 15,000 m³. This suggests that within each 100 m depth range roughly ~15,000 m³ of graphite could be mined from the KKGm. However, the expected volume may be higher for deeper levels because dilation seemed to increase with depth.

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