

## Effectiveness of Rolling Straight Edge for Quality Control of Asphalt Concrete Surfacing

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Today in each part of the country, road surfacing is done by Asphalt Concrete. With the increase usage of Asphalt Concrete, the necessity of Quality Management System was arisen. Hence the Quality Management System for Asphalt Pavement was developed and established in following areas;

1. Plant operation
2. Asphalt Concrete transportation
3. Paving and Compaction
4. On finished Asphalt pavement

To check the quality control on finished pavement, there are many parameters to be considered. One important parameter is Roughness value on the finished pavement. Different Technical Specifications provides various devices to quantify the Roughness value. One such method is to measure Roughness value using the Rolling Straight Edge.

Here the dominant parameter is ups and downs of the road surface. Rolling Straight Edge equipment was used to count total ups and downs (Bumps) with magnitude of a particular length. A correlation between International Roughness Index and Rolling Straight Edge measurement has been developed using statistical analysis software SPSS. Most significant parameters for the roughness were identified and modifications to the specification were made.

$IRI = 1.662 + 0.02X$ ; ( $X =$  Summation of the magnitude of the total bumps  $\geq 4$ mm)

A case study on identifying the high roughness sections of a road was made and effects of remedial measures were analyzed using the developed correlation.

**Key words:** *Roughness, International Roughness Index, Rolling straight edge*

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