Continuous Belt Asphalt Roller

The Asphalt Multi-Integrated Roller (AMIR) compacts asphalt paving mixes in the field. Its design is based on the phenomenon of construction induced cracks in asphalt pavements. It applies its compaction energy to the asphalt mix in a way that differs from existing vibratory, pneumatic, or static steel rollers. Conventional compacting equipment, such as steel vibratory rollers, while capable of achieving a specific density, induced cracks during pavement construction. These cracks are often visually apparent and are due to a mismatch between the geometry and relative rigidity of the roller and the asphalt mix.

AMIR replaces the cylindrical stiff shape of the roller with a moving flat, soft plate that produces a crack-free asphalt layer and more uniform compaction along and across the mat. It achieves the same, if not better, density with fewer passes than conventional rollers. The AMIR compactor originated in Ottawa, Canada, and since 1987. Comparative tests on asphalt specimens from conventional and AMIR compacted sections show quite significant improvements in density, tensile strength, fatigue life and resistance to moisture damage. AMIR has been used in Australia, Canada, Egypt, and Sweden.

Contact: Dr. A. O. Abd El Halim
Department of Civil and
Environmental Engineering
Carleton University
1506 West 36th Avenue
Ottawa, Ontario K15 5B6 Canada
Phone: 613-520-5789
Fax: 613-520-3951
Website: www.civeng.carleton.ca/~ahalim
Email: ahalim@ccs.carleton.ca