Technology developed for safer roads from steel industry waste

Come monsoons and accidents due to skidding of vehicles on wet and slippery roads become a major cause of death due to accidents. A technology, developed by the Indian Institute of Technology Guwahati, offers a solution that stems in the waste of the steel industry.

Dr. Rajan Choudhary, Associate Professor at Department of Civil Engineering, IIT Guwahati has developed a technology for the use of industrial waste steel slag, a by-product of steel making in open-graded asphalt friction courses (OGAFC) under the Waste Management Technologies (WMT) program of Technology Development and Transfer Division, Department of Science & Technology.

OGAFC or open-graded friction course is a thin, permeable layer of asphalt used in roads and pavements to integrate its skeleton to one of uniform aggregate size. These mixes contain a small percentage of fine aggregate, which produces a large number of air voids. The pavement consists primarily of single size coarse aggregate with high asphalt content. The aggregate skeleton is responsible for the pavement's ability to resist trucks and carry the loads without undergoing permanent deformation. It has interconnecting voids that provide improved surface drainage during rainfall. The rainwater drains vertically through the OGAFC to an underlying impermeable layer and then laterally to the daylighted edge of the OGAFC.

The technology developed by Dr. Choudhary uses the steel slag, industrial waste in the production of asphalt friction courses and also offers better skid resistance from OGAFC, thereby improving overall road safety, especially during wet weather conditions. It is currently undergoing validation and testing.

It can be used by the National Highways Authority of India, National Highways and Infrastructure Development Corporation NHIDCL, State and Central PWD, Border Roads Organisation, Ministry of Road Transport and Highways road construction agencies and is

highly favourable for use in hilly and high rainfall regions. Dr. Choudhary is further working on the technology to evaluate the performance and benefits of mixing OGAFC with different types of steel slag.