

Study of Interaction between Recycled Asphalt Pavement (RAP) Material and Virgin Material

Authors : G. Bharath, K. S. Reddy, Vivek Tandon, M. Amaranatha Reddy

Abstract : This paper presents the details of a study conducted to evaluate the interaction between recycled binder and fresh binder in Recycled Asphalt Pavement (RAP) mixes. When RAP is mixed with virgin aggregates in the presence of fresh binder there will be partial blending in a hot mix asphalt mixture. A recent approach used by some researchers for studying the degree of blending of RAP binder with virgin binder has been adopted in this study. Dense Bituminous Macadam mix of Ministry of Road Transport of India with a nominal maximum aggregate size of 19 mm was studied. Two proportions of RAP-20% and 35% and two types of virgin binders - viscosity grade VG10 and VG30 were considered. Design binder contents were determined for all the four types of mixes (two RAP contents and two virgin binders) as per Marshall mix design procedure. The degree of blending of RAP and virgin binders was evaluated in terms of the complex modulus of the binder. Laboratory test results showed that with an increase in RAP content, the degree of blending decreases. Better blending was observed for softer grade binder (VG10).

Keywords : blending, complex modulus, recycled asphalt pavement, virgin binder

Conference Title : ICIPE 2015 : International Conference on Industrial and Production Engineering

Conference Location : Prague, Czechia

Conference Dates : March 23-24, 2015