EVALUATION OF APPLICABILITY OF RESIDUAL PRODUCTS FROM SOLVENT DEASPHALTING PROCESS OF HEAVY OIL REFINING AS A BINDER FOR ASPHALT PAVEMENT

S.D. Hwang, C.M. Baek, S.L. Yang, & J.H. Im
Korea Institute of Civil Engineering and Building Technology (KICT), Goyang-Si, Gyeonggi-Do, South Korea

ABSTRACT
One of the refining process using heavy oil sources is the solvent deasphalting process (SDA). The SDA extracts most of oil components and thus, the residual products from such process contain more asphaltenes compared to the conventional asphalt binder for the road pavement. In this study, the chemical and physical properties of the residual products (SDA pitch) have been investigated in order to evaluate the applicability as a binder for the asphalt pavement. For the chemical property of the SDA pitch, the composition of SARA (Saturate, Aromatic, Resin, Asphaltene), the elementary composition, and the functional group are analyzed. For the physical property of the SDA pitch, the basic material property tests for the conventional asphalt binder, such as penetration test, softening point test, flash point test, ductility test, and rotational viscometer test, are performed. The rheological properties of the SDA pitch are also investigated using the dynamic shear rheometer (DSR).