

Bitumen performance and chemistry in solvent refined bitumen blends

Glynn Holleran¹, Irina Holleran¹ and Douglas J Wilson¹

¹The University of Auckland, 20 Symonds Street, Auckland, 1010, New Zealand

E-mail: ghol310@aucklanduni.ac.nz

Abstract. In years gone past most oil companies in Australia and New Zealand (NZ) developed experts that bridged the divide between refining and paving. This was supported by laboratories in Australia and sometimes Asia. This is no longer the case and many refineries have ceased bitumen production or closed. With the market moving towards imports and control to supply companies disconnects on bitumen passing a national specification and performance on the road. This reduces both durability and increases costs. This has been addressed by development in NZ of a performance specification for hot mix asphalt binders (including modified) and work being done on sealing grades. This paper discusses the development of the HMA specification with respect to crude sources and the development of methodologies to assess imported binders for suitability in all applications including emulsion. The conclusion is that bitumen quality may be maintained by use of these methodologies that include, chromatographic analysis, measurement of thermodynamic internal stability (Heithaus), aging, and Dynamic Shear Rheometry testing and mix performance testing in the laboratory. This forms a regime capable of use in any context and this leads to better durability of surfaces and extended service life.