

## **EFFECT OF POLYPHOSPHORIC ACID ON HIGH-TEMPERATURE PROPERTIES OF BITUMENS FROM DIFFERENT CRUDE SOURCES**

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### *ABSTRACT*

It is known that the mechanism of modification of bitumens with PPA depends strongly on the chemical composition of the base bitumen. In order to evaluate the impact of PPA on bitumens from different crude sources, three base 50/70 pen-grade bitumens with different performance grades (Reduc, Lubnor and Replan) were modified with five PPA proportions (0.0, 0.5, 1.0, 1.5 and 2.0%). The PG grading and the MSCR test were used to evaluate the effect of PPA concentration on bitumens. The high-temperature PG increased with increasing PPA proportion with different intensity depending on the base bitumen. It was observed an optimum PPA proportion for each base bitumen that leads to higher percent recoveries and lower non-recoverable compliances: 1.5% for Reduc, 1.0% for Lubnor and 2.0% for Replan. The set of rheological tests performed here showed to be an effective and practical tool to estimate the ideal PPA proportion for bitumen modification.