**Ignition oven testing**

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The ignition oven method has emerged as a more efficient technique for determining the asphalt binder content in hot mix asphalt. This method has gained popularity due to its ability to deliver accurate results in a shorter timeframe compared to traditional solvent extraction methods. Over the years, advancements in the design and functionality of ignition ovens have enhanced their temperature control and combustion conditions, leading to more consistent outcomes.

In addition to its speed and accuracy, the ignition oven procedure is straightforward and does not involve complex chemical reagents, making it easier to implement while reducing the risk associated with handling hazardous materials. Many states in the U.S. are banning the use of certain chemicals, such as solvents for binder extraction, because they pose carcinogenic risks, endangering users and the environment through potential spills and improper disposal.

Recently, Colas New Zealand has acquired a Bitumax Pro ignition oven and is in the process of determining a correction factor for various mix designs. In line with recommendations from a 2023 NCHRP report on the Implementation of Proposed AASHTO Standards for Asphalt Binders and Mixtures, the ignition oven temperature has been adjusted from 550 degrees Celsius to 426 degrees Celcius. This temperature modification is better suited for New Zealand Grey Wacke aggregates, resulting in reduced offset values and less variability in results.

For the past six months, asphalt production has routinely employed both the solvent extraction method and the ignition oven on the same production mix to assess bitumen content. The results will be compared to evaluate the accuracy and reliability of the ignition oven, thereby building confidence in its adoption.

Overall, the use of ignition ovens promotes a safer and cleaner environment by lessening reliance on hazardous chemicals and minimizing the potential environmental impacts associated with asphalt testing.