

# **Asphalt High Circularity Product**

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## **Abstract**

Embracing the concept of a Circular Economy and the goals set forth in Saudi Arabia's Vision 2030, Saudi Aramco puts into action an innovation that transforms the waste produced by used tires and plastic rejects to help build up roads. A new concept introduced by Saudi Aramco is looking to transform waste tires and plastics into a resource. The innovative concept is to turn crumb rubber and recycled plastic from waste into a form of a polymer for use in laying and maintaining roads. The objective of applying rubber and plastic is to improve durability of asphalt pavements, promote sustainability of local materials, and endorse a circular economy in the Kingdom of Saudi Arabia. Both mixtures were produced using an innovative "modified dry mix method" that had never been tried on a large-scale production previously. This method allowed the team to eliminate the process of pre-blending and conveying the asphalt and rubber/plastic, as the polymer was added directly into the hot mix asphalt plant. During 2020, two separate pilots were successfully implemented for the first time at Saudi Aramco. The sections for both pilots were 800 square meters, and 7 centimeters thick, and included asphalt pavement with a rubber content, which was increased from the standard practice of 10% of the total asphalt weight into 20%. Where the amount of plastic used was 10% of the bitumen by weight. The objective here is to present and show the high potential for the ever-expanding asphalt demand and in parallel to explore the amplified market for recycled wastes in the kingdom of Saudi Arabia.