

# Bituminous Pavement Recycling using REJUPAVE<sup>®</sup> Technology



**REJUPAVE - One Product, Many Benefits**

## ***Presentation of New Researchers and Innovations***

*February 29<sup>th</sup> 2024 , Manekshaw Centre, New Delhi: International Road Federation: India Chapter*

***Presented By:- Chaman Tulsyan, President, Verma Industries***



REJUPAVE technology has been jointly developed by CSIR-CRRI and Verma Industries.

# WHAT IS REJUPAVE® TECHNOLOGY?



- ❖ REJUPAVE® is a patented technology for recycling of bituminous pavement by utilizing high quantities of RAP. Value chain consisting the investigation, job mix design, rejuvenating and recycling of pavement
- ❖ REJUPAVE® technology uses a Liquid bio-based asphalt modifier cum rejuvenating agent
- ❖ Restores the viscoelastic characteristics of oxidized binder in the RAP, also improves the rheological properties by maintaining the Asphaltene to Maltene proportion in the bitumen



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# Why Pavement Recycling is required?



- ▶ To conserve the diminishing road construction material
- ▶ To maintain road levels within permissible boundaries
- ▶ To reduce the cost of maintenance and rehabilitation



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# Reclamation of Old Pavement



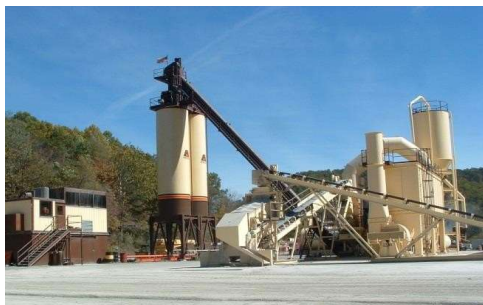
- ❑ Asphalt Mix removed from the Roadway Typically by Milling
- ❑ Milled material is called Reclaimed Asphalt Pavement (RAP)
- ❑ Contains Asphalt Binder and Aggregates
- ❑ Reutilization has Economical and Environmental Benefits



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# Recycling Procedure using REJUPAVE® Technology



**Investigations**

**Criteria for Segregation of Recycling option**

**Reclamation: Milling, Demolition & Stockpiling**

**Detailed Design and Analysis**

**Production of Recycled Bituminous Mix with REJUPAVE®**

**Laying of Recycled Bituminous Mix with REJUPAVE®**

**Quality Check/Quality Assurance of Recycled Pavement**



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# Benefits of REJUPAVE® Recycling Technology



- ❑ First indigenously developed technology for Bituminous Pavement Recycling
- ❑ Proven, economic technology for High RAP mixes - rapidly penetrates and rejuvenates; reduces virgin asphalt requirements
- ❑ 100% environment friendly and sustainable



- ❑ Eliminates the problem of increasing road levels due to overlay of HMA
- ❑ All natural: Bio-oil based, non-hazardous product; No petrochemicals used
- ❑ Reduces the energy usage
- ❑ Compatible with all asphalts



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# REJUPAVE TECHNOLOGY FILM





**“Sustainability is not just about adopting the latest energy-efficient technologies or turning to renewable sources of power. Sustainability is the responsibility of every individual every day. It is about changing our behaviour and mindset to reduce power and water consumption, thereby helping to control emissions and pollution levels.”- Joe Kaeser**

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**“Because we don’t think about future generations, they will never forget us.” – Henrik Tikkanen**

# Thank you

