EXPANDING THE APPLICATION OF RECYCLED CONCRETE AGGREGATES (RCA) IN ROAD CONSTRUCTION

What is RCA?

- Crushed concrete from demolition waste or unused structures.
- Similar to natural aggregates but may contain traces of mortar and fine materials.

Key Benefits of RCA:

- **Environmental Sustainability** – Conserves natural resources & reduces environmental impact.
- **Waste Reduction** – Diverts materials from landfills.
- **Cost-Effective** – More affordable than natural aggregates.
- **Structural Performance** – High-quality RCA is a viable alternative with strength and durability for road base, backfill, and concrete, enhanced by proper processing and mixture design.
- **LEED Contribution** – Supports sustainable construction certification.

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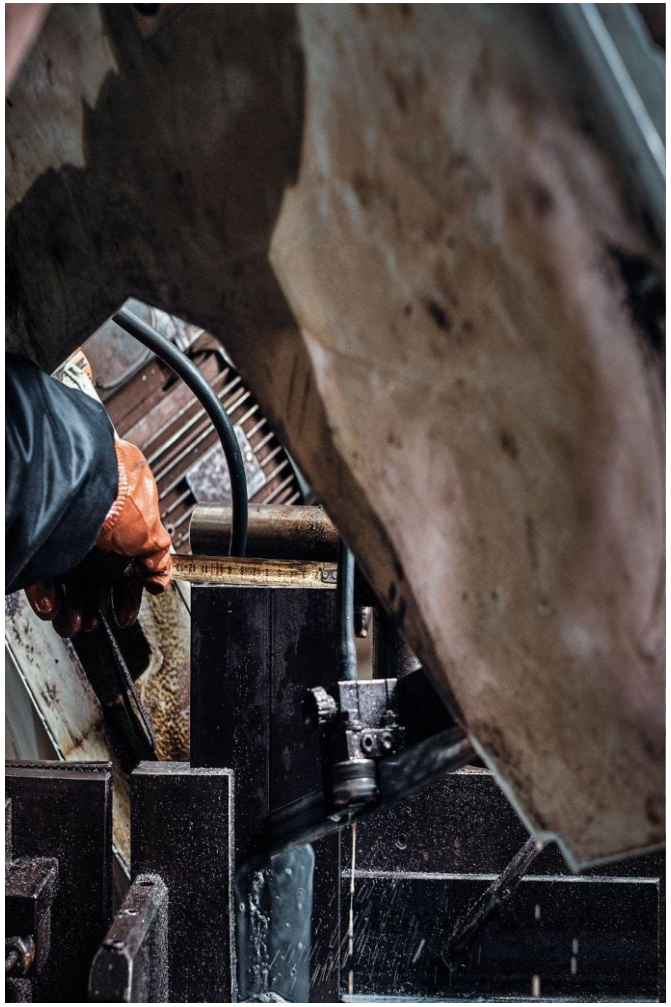
CONSIDERATIONS & CHALLENGES OF RCA



Quality & Variability:

- Influenced by source, processing methods, and contaminant levels.
- May require pre-treatments for consistency.

Limitations & Challenges:

- **Strength & Durability** – Adhered mortar can increase water absorption.
- **Gradation & Shape** – Higher fines content, variations from natural aggregates.
- **Environmental Impact** – Crushing, processing & transport require energy.
- **Regulatory Compliance** – Standards vary across regions and differ from those for conventional aggregates.

Mitigation Strategies:

- Advanced processing & quality control methods.
- Optimized mixture design to enhance performance.