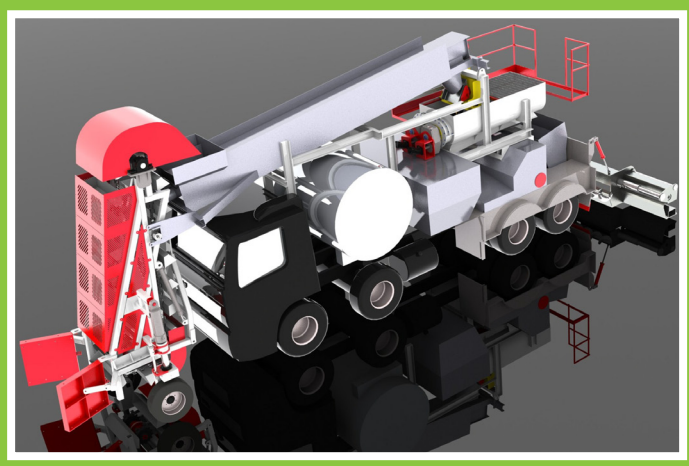
Callington Ltd
ROAD RECYCLING

Leaders in road recycling in Ireland for more than 10 years

- Savings of up to 40% on conventional rehabilitation methods
- Environmentally friendly
- Quicker turnaround in project completion
- Saves on future maintenance
- No increase in finished road levels



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What is Road Recycling?

An increasing proportion of carriageway maintenance budgeting is required merely to maintain the existing road network.

The road recycling process involves milling up the existing road materials then spreading and mixing through appropriate binding agents (bitumen emulsions) so that the new matrix forms a new roadbase for the road. Finally an appropriate new surface is applied to the carriageway.

Why Road Recycling?

The environmental and financial benefits of using existing materials makes road recycling a natural solution to carriageway maintenance and reconstruction.

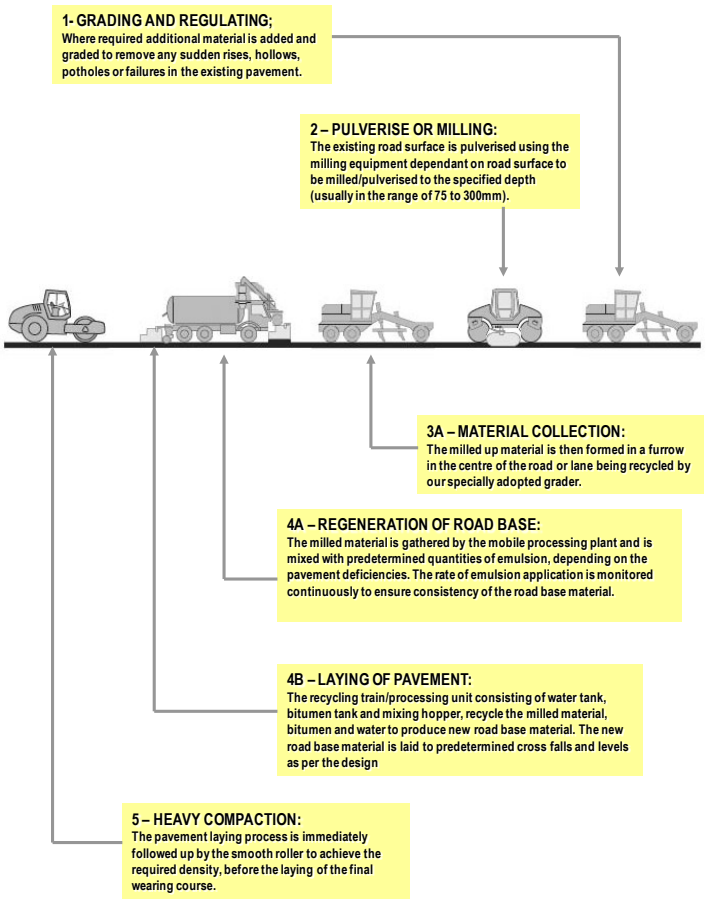
Road recycling allows vehicles to continue to use the existing roadway while fixing more miles than conventional replacement allows.

Recycling is a fast and economical reconstruction solution to damaged roads providing savings of up to 40% compared to conventional overlays.

Road recycling is an ideal solution for rehabilitation of roads that have been damaged by spells of freezing weather.

Considerable savings can be achieved through a reduction in the need for imported materials, energy and lorry movements.

The Recycling Process



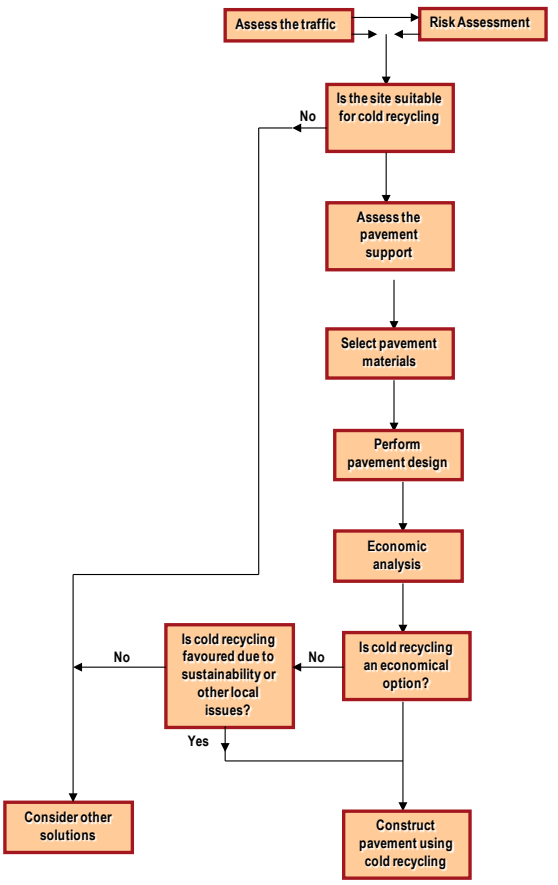
Suitability of the Cold Recycling Process

When considering the rehabilitation of a distressed road pavement the most cost–effective methods of repair tend to be project-specific. Each project is unique in terms of the structure of the existing pavement and the quality of material that make up the pavement layers. It is therefore important to use the most appropriate, practical solution for each project, taking into account the following important factors.

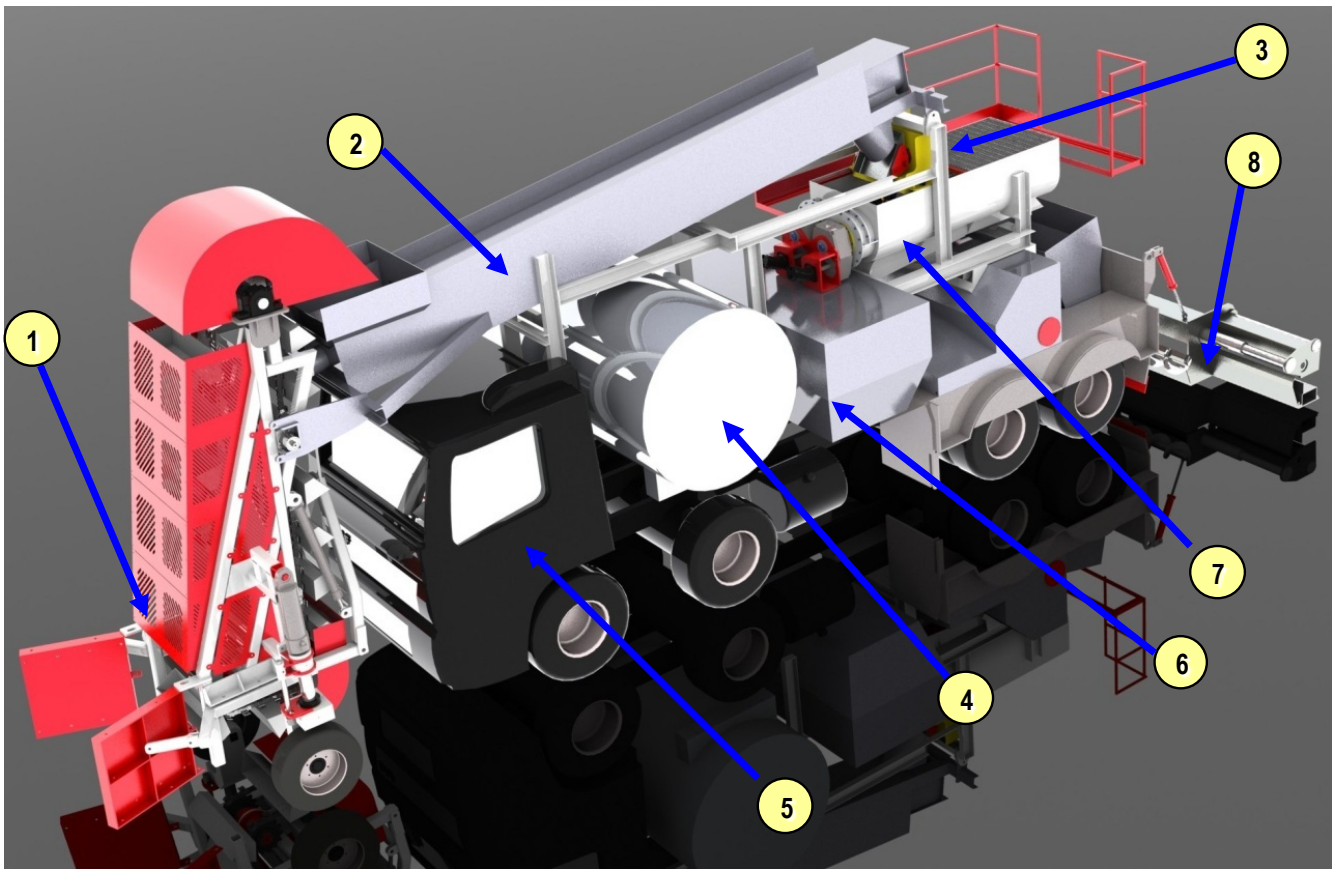
- **Locality.** The most effective rehabilitation method for a particular county or region is influenced by local government, whether the project is a highly trafficked urban street where only night work will be permitted, or a low traffic volume unsurfaced rural road that is in need of upgrading. Very different solutions and standards of service are required in these two extreme cases.

- **Physical environment.** Topography and geology should be taken into consideration when determining the most appropriate method of rehabilitation. In particular, steep grades may dictate the type of construction that is practically possible.

- **Availability of materials.** The feasibility of the various recycling options is significantly influenced by the availability of materials.



Mobile Road Recycling Plant



1 – BUCKET ELEVATOR:
Milled material is gathered by the mobile processing plant via the specially tailored bucket elevator system, which continuously collects material via a series of rotating buckets lifting a controlled amount of material into the transfer auger.

2 – TRANSFER AUGER:
The transfer auger provides for the mixing of the milled material and aggregates and transfers an even flow of material over the weighing system prior to the material entering the batching tank/hopper with twin mixer.

3 – WEIGHING SYSTEM:
The continuous monitoring of the weight of material passing over the weighing plate system, calculates and adjusts the bitumen content into the twin shaft mixer in accordance with the pre-set percentage set by the operator.

4 – EMULSION TANK:
Specially adapted storage tank for Fuarflex R emulsion, maintains the emulsion at the optimum temperature, before transferring it to spreader bar positioned above the batching tank at recycled aggregate entry point.

5 – CONTROL UNIT / OPERATOR CAB:
The operator cab contains a fully automated computerised controlling system which continuously monitories the emulsion flow and aggregate weight passing through the process. This ensures the parameters of the road recycling is within the specified boundaries. The operator enters the percentage bitumen required, presses the start button and the system takes over. All job data can be recorded if required.

6 – POWER:
Air cooled Deutz 250kW power unit containing hydraulic pumps required to power the recycling system independent of the truck engine.

7 – BATCHING TANK:
Twin shaft mixer with a throughout of 400Tonns per hour giving a continuous mix to the paving screed.

All Recycled material is monitored entering the batching tank via the weighing plate, which relays the weight information back to the emulsion flow control unit, which in turn automatically adjusts the volume of emulsion sent to the spreader bar. The spreader bar sprays the emulsion under high pressure through the incoming aggregates before being mixed in the batching tank.

The volume of emulsion added in the recycling process is predetermined based on grading and binder content of the recycled road material. Prior to commencing works the a sample of the road make up is lab tested adding varying volumes of emulsion to achieve the optimum binder material strengths.

8 – PAVER UNIT:
The paver consists of two central fixed plates and two lateral mobile plates, hydraulically operated to extend to 7m wide, sliding on two chromed telescopic cylindrical guides. The screed plate allows for different camber angles between +4.5% and -2.5%.
During operation tamper and vibrator frequency is hydraulically controlled and can be individually adjusted by two flow regulators. The smoothing plates are made of wear resisting in deformable steel and are heated by eight gas propane burners.

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Why Callington Road Recycling ?

- One of the most experienced road recycling contractors in the country.
- Indigenous Irish Company.
- We offer unparalleled customer support at the concept, design, construction and maintenance stages of a project.
- We can assist in planning recycling projects to provide a cost-efficient alternative to the traditional solutions for reconstruction and repair.
- We provide specially adopted and tailored road recycling equipment to provide the maximum efficiency and durability from the existing pavement.
- All recycled materials are crushed and mixed to predetermined and tailored emulsion quantities with additional aggregates if required to achieve the optimum results from the existing pavement material.

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