

# EVERYTHING ASPHALT

## Cold In-Place Recycling



*"Cold in-place recycling (CIR) of asphalt pavements has proven to be a viable method of rehabilitating roads that both minimizes user delay and is more environmentally sustainable"*  
 FHWA FOCUS, 2001

### Quick, Cost-Effective and Environmentally Friendly

Cold In-Place Recycling (CIR) uses a train of equipment that mills, screens, and crushes the existing asphalt pavement. Typically 3-5 inches is milled off of the pavement. An asphalt rejuvenating material is then blended with the reclaimed material and the recycled mix is laid back down to form a new pavement structure. Additional aggregate or other additives may also be blended in to correct the gradation or improve the mix. The recycled mix may be placed with a paver or it may be bladed. The mat is then compacted. After a 3-5 day curing period, a new surface (typically hot-mix asphalt (HMA) or a seal coat) may be applied. The recycling asphalt may be emulsified, cutback or a soft asphalt cement, and it may have rejuvenator oils, polymers or other additives; or it may be unmodified asphalt. The process moves quickly with minimal traffic delay. The old pavement milled at the beginning of the train is rejuvenated and re-laid at the back of the train.



### Benefits of Cold In-Place Recycling

- Aged, distressed pavements are replaced with recycled asphalt mix.
- In-place recycling reuses the existing aggregate and asphalt, reducing new raw material and hauling costs.
- Cracked pavement is removed, preventing future reflective cracking.
- Deformations such as potholes, ruts, bumps and shoved pavement are removed.
- Crowns can be re-established.
- Clearances under bridges and curb height can be restored.
- With the proper choice of materials, aged asphalt can be rejuvenated, and poor aggregate gradations can be corrected with added aggregate material.
- In-place recycling minimizes the time a lane is closed for re-construction.
- There is excellent public acceptance of recycled materials.
- The recycled pavement can, itself, be recycled when its time has come.

### Where to Use CIR

Cold in-place recycling is the ideal solution for severely distressed pavements with potholes, cracking, shoving, ruts, and/or oxidation. Recycling candidates are normally 15 to 20 years old. The pavements need to have a structurally sound base as this process does not correct base failures. The pavements should be sufficiently thick (5-6 inches) to support the equipment. The existing pavement should be analyzed and the recycled mix designed in a laboratory. It is important to understand the reason for the pavement failure, and correct any deficiencies that may pose problems for the recycled pavement. CIR can also be used for widening and upgrading pavements.

### Martin Asphalt Products for CIR

<b>AES-300</b>	High float, anionic asphalt emulsion
<b>AES-300RP</b>	High float, anionic asphalt emulsion with rejuvenating oil
<b>MS-2, MS-1</b>	Anionic medium setting asphalt emulsions
<b>CMS-2</b>	Cationic medium setting asphalt emulsion
<b>CSS-1</b>	Cationic slow setting asphalt emulsion
<b>Cyclogen® LE</b>	Cationic rejuvenating emulsion
<b>Cyclogen® ME</b>	Cationic rejuvenating emulsion
<b>ETR-1</b>	Cationic emulsified rejuvenator oil
<b>ARA-1</b>	Anionic emulsified rejuvenator oil
<b>SCM-1, SCM-2</b>	High performance cutback cold mix asphalts
<b>CM-300</b>	Non-emulsion solventless cold mix asphalt

### Martin Asphalt Makes It Easy

Through Martin Asphalt, you get **Everything Asphalt**—a full range of products for constructing, maintaining, recycling and rehabilitating your pavements. In addition, you receive technical assistance in selecting the right materials and application. The company's AASHTO Certified Laboratory makes sure the products meet your specifications. And your products are delivered both on spec and on time via Martin's Gulf Coast network of production plants, storage facilities and transportation fleet including ocean-going and inland barges, rail cars and tanker trucks. Contact us for more information on products for your stabilization projects.

[www.MartinAsphalt.com](http://www.MartinAsphalt.com)

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**800-662-0987**

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