

EVERYTHING ASPHALT

Cold and Warm Mix Asphalt



"The immediate benefit is the reduction in energy consumption required by burning fuels to heat traditional hot mix asphalt (HMA). With the decreased production temperature comes the additional benefit of reduced emissions from burning fuels, fumes, and odors generated at the plant and the paving site."

FHWA



Energy Saving, Safety, Flexibility

Emulsion cold and warm mix overlays made from asphalt emulsions and cutbacks have been used for decades, especially on rural roads. Many county engineers have found them ideal for remote locations. Warm sand mixes have also been used on high traffic volume interstates. With today's concerns about energy, fumes and emissions, cold and warm mixes are an attractive alternative.

There are several cold and warm mix processes. The mixes may be made using a stationary plant at a central location, at a portable plant in a pugmill, at a hot mix plant (run at lower temperatures) or with a blade, recycler or mix paver on the road. For all these processes, the first step is a laboratory mix design with the project aggregate. The asphalt binder is formulated to coat the aggregate and conform to the needs of the manufacturing process. An emulsion mixed cold on the road with a blade is formulated for different characteristics than an asphalt mixed warm at a central plant and transported to the job site. Cold mixes can be placed with a blade or a paver. While emulsions have traditionally been used primarily for dense-graded aggregate mixtures, relatively recent technologies including polymers have been developed for open-graded emulsion mix overlays.

While cold and warm asphalt mixes have traditionally been mostly used on local roads, current research and new technologies may make them an alternative on higher traffic volume roads. As with any overlay, the existing base or pavement should be in good condition, with repairs made to any serious distresses.

Warm Mix Asphalt

The industry has recently introduced innovative technologies for warm mix asphalt (WMA) to construct thick-lift, load-bearing asphalt pavements for base, intermediate and surface layers at lower temperatures than conventional hot mix asphalt. Mix and construction temperatures typically range from 140°F to 230°F. WMA uses Superpave hot mix asphalt (HMA) materials and design criteria. WMA technology is designed for use anywhere hot mix asphalt or traditional emulsion mixtures have been used and areas where emissions and fumes are a concern.

Cold and Warm Mix Benefits

- Cold and warm mix overlays improve the structural capacity of a road.
- Cold and warm mix production and construction conserve fuel by requiring significantly less energy.
- The lower construction temperatures reduce emissions and fumes as well as heat and burn hazards for workers.
- Cold and warm mixes can be mixed on-site, in portable plants or at a central plant.
- On-site cold mixes are ideal for remote locations.
- Emulsion cold mixes can be formulated to be stockpiled for later use.
- WMA has the same traffic-readiness, rideability, strength and stability as similarly formulated hot mix

Martin Asphalt Products for Cold and Warm Mix Asphalt

AES-300 AES-300RP	MS-2 MS-1	Anionic asphalt emulsions designed to be mixed with aggregates for cold and warm mix asphalt.
CMS-1	CSS-1h	Cationic asphalt emulsions designed to be mixed with aggregates for cold and warm mix asphalt.
SCM-1 SCM-2	CM-300 MC-30 MC-800	Cutback asphalts designed to be mixed with aggregates for cold and warm mix asphalt
PG 64-22	PG 70-22 PG 76-22	Performance Graded asphalts for plant-mixed warm mix asphalt

Martin Asphalt Makes It Easy

PG asphalt, asphalt emulsions and cutbacks for warm and cold mix, PG asphalt for HMA, tack emulsions. Through Martin Asphalt, you get **Everything Asphalt**—a full range of products for 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 the best products for your application.

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