

**Cold Mix Production in the Double Barrel**

<b>Equipment:</b>	All Double Barrel Drum Mixers	<b>Date Issued:</b>	4-29-2004
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**Warning about Cold Mix Production in the Double Barrel**

The production of cold mix using asphalt containing lighter hydrocarbons commonly called “cut back” creates a chance of fire and or explosion due to hydrocarbons evaporating during the process.

Astec neither recommends nor condones the production of cold mix because of the potential for these problems. However, Astec understands that its customers often choose to provide cold mix to the markets they serve if the market has a need for cold mix material. As such, we feel an ethical obligation to provide guidelines that minimize the risk of fire and/or explosion. The following guidelines **DO NOT** remove the risk of fire and/or explosion, but if the guidelines are used the risk is minimized.

There are basically two ways cold mix is made: 1) Conventional Method and 2) the Non-Conventional method.

**CONVENTIONAL METHOD**

1. Conventional Method – in general, this method involves partially drying the aggregate and injecting an emulsion or “cut back” in the mixing chamber. **There are two problems with this method.**
  - a. The aggregate doesn’t get totally dry; therefore, the final product can be of questionable quality.
  - b. In order to dry the aggregate as much as possible, the operator often heats the aggregate to within a few degrees of the flash point of the “cut back’s” fumes. If the aggregate exceeds the flash point a fire in the mixing chamber is likely. If this is allowed to continue the outer chamber will be damaged. **There is also the risk**

**of explosion.** To reduce the risk of fire and explosion the operator must do **ALL OF** the following:

- Keep the aggregate well below the flash point of the “cut back”. Keeping the aggregate well below the flash point of the “cut back” minimizes the production of fumes from the light ends in the “cut back”.
- Prop open or tie open the drum discharge flop gate. Propping open the drum discharge flop gate dilutes a potentially combustible mixture in the mixing chamber before it travels by the burner.
- Increase the “burner suction” to at least 0.8 inches water column. Increasing “burner suction” to 0.8 inches water column dilutes a potentially combustible mixture in the mixing chamber before it travels by the burner.

## **NON-CONVENTIONAL METHOD**

2. Non-Conventional Method -- in general the non-conventional method involves pre-drying aggregate and stockpiling the aggregate until it cools to well below the flash point of the light hydrocarbons in the emulsion or cutback. With the burner and burner blower off, the cool, pre-dried aggregate is then run through the RAP bin and mixed with the “cutback” in the Double Barrel mixing chamber. The final product is of superior quality and the process, if done correctly, is more forgiving. This method has a procedure that must be followed. **Fire and/or explosions can still occur with the non-conventional method.** Contact Astec Engineering for details.