TECHNICAL DATA

SAMPLE MUNICIPAL SPECIFICATION

A crumb rubber modifier will be used as a portion of the asphalt mix design.
The crumb rubber will comply with an ASTM 30 minus specification and be dry, free of visible debris or other contaminants. The crumb rubber surfaces will be engineered to improve the workability of the rubber-modified asphalt during handling, placement and compaction.

Rubber will be added to the asphalt mix at a rate equal to 10% of the weight of the liquid binder included in the specified mix design. The calculation of liquid asphalt cement content in the mix design will not include any asphalt cement recovered from the use of recycled asphalt pavement or recycled asphalt shingles.

Crumb rubber additions to the asphalt mix will comply with the following standards:

1. Use a separate feed system to store and feed crumb rubber by weight proportion of the liquid asphalt cement added

2. The crumb rubber feeder system will include a proportioning device that meets the following specifications:

    a. Feeder accuracy within plus or minus 6% of the amount required
    b. Automatic adjustment of rates to maintain the crumb rubber feed rates within plus or minus 10% of the amount required at all times
    c. Has a convenient and accurate means of calibration
    d. Provides in-process monitoring of feed rates, either by a digital display of outputs or a printout of feed rates over time in order to verify feed rates. The system shall report the feed in one lb. increments that will enable the user to monitor the depletion of the crumb rubber. Monitoring the system volumetrically will not be allowed.

3. With the exception of small volume projects designated as “demonstration projects” by the contracting authority, the crumb rubber feeder system will interlock with the asphaltic cement pump at the asphalt plant in order to maintain the correct proportions of liquid asphalt cement and crumb rubber for all rates of production and batch sizes. The crumb rubber feeder system will include indicators or sensing devices for the system that will interlock their output signals with asphalt plant controls so that plant

production will be interrupted if the crumb rubber output rate is not within the plus or minus 10% tolerance given above.

4. This interlock will immediately notify the operator if target crumb rubber feed rates exceed project tolerances.

5. All asphalt plant production will cease if the crumb rubber introduction rate and binder feed rates are not brought within tolerance after 60 seconds.

6. When the interlock system interrupts production and the plant has to be re-started, special requirements apply to the plant operation:
    a. The crumb rubber feeding system shall be run until a uniform feed can be observed on the output display.
    b. All mix produced before the observed uniform feed will be rejected.

7. Crumb rubber output from the crumb rubber feeder will be introduced as follows:

    a. When a batch-type plant is used:
        i. Add crumb rubber to the aggregate in the weigh hopper
        ii. Increase the batch mixing time by 15 to 20 seconds from the time the aggregate is added in order to ensure the crumb rubber is uniformly distributed before introduction of the liquid asphalt cement into the mixer.
        iii. Increase the batch wet mix time by 15 to 20 seconds to ensure that the crumb rubber modified is uniformly blended with the asphaltic cement)
    b. When a continuous or drier-drum type plant is used:

        i. Add the rubber to the aggregate and liquid asphalt cement during mixing.
        ii. Provide sufficient mixing time to uniformly disperse asphalt cement, crumb rubber and aggregate.
        iii. The point of introduction in the drum mixer will be approved by the Project Engineer prior to production.
        iv. Ensure the crumb rubber modifier will not become entrained in the exhaust system of the drier or plant and will not be exposed to the drier flame at any point after introduction.