

# Recycled Asphalt Pavement Guidelines

RAP Expert Task Group

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# Overview

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- ***General Description of RAP and Options***
- ***Process Used***
- ***Recommend Best Practices***

# RAP Sources

## *Pavement Milling*



## *Asphalt Pavement Removal*



## *Plant Waste Material*

*Recycled Asphalt Pavement Usage*

# RAP Stockpile Options



***Isolate RAP Sources***

***Blend Multiple Sources***





# RAP Processing Options

## *Screening*



## *Crushing*



## *Fractionating*



# RAP Storage Options



***Under  
Roof***

***Paved /Sloped  
Surface***





# Process at Contractor A



***Crush to ½ in.  
minus***

***Single Stockpile***



# Process at Contractor A



***Single Size RAP  
minus 1/2 in.***

***Two RAP Bins***





# Process at Contractor B



***Soil Stabilizer for  
Pre-Crushing***

***RAP after Soil  
Stabilizer***



# Process at Contractor B



***Horizontal Impact  
Crusher***

***RAP Crushed  
and Screened  
to Two Sizes  
Split on ½ in.***





# Alternate Process at Contractor B



***Horizontal Impact  
Crusher***

***Screened to  
Two Sizes***





# RAP Size



***Fine  
minus ½ in.***



***Coarse  
½ to 1 in.***

# Process at Contractor B



*Two RAP Bins*



# Process at Contractor C



***Millings Screened***

***Oversize Mixed with  
Digouts and Processed  
with Soil Stabilizer***





# Process at Contractor C



***RAP Processed with  
Soil Stabilizer***

***RAP Screened into Two  
Sizes***



# Process at Contractor D



***Millings Only***

***Sources are Kept Separate***

# Process at Contractor D

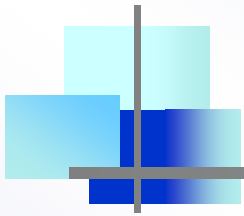


***RAP Gator for  
Lumps***

***One RAP Bin***







# Recommended Best Practices



# RAP Processing

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- ***Control Mill Speed at the Jobsite***
- ***Mill Surface/Intermediate Separate from the Base (when possible)***
- ***Skim RAP Piles at the Plant to Break Lumps***
- ***Fractionate Processed Millings***
  - ***1" Minus***
  - ***½" Minus***



# Stockpile Management

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- ***Place Processed RAP on a Sloped Paved Surface***
- ***Separate Types and Sources of Millings (when space permits)***



# Plant Operation



***For High RAP Mixes***

***two RAP bins are recommended***

***- controls variability***

***- allows fine and coarse***



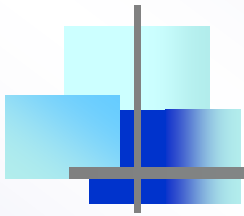
# Maximum Practical RAP Usage

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## Considerations

- *Mix Design*
- *Customer Specifications*
- *RAP Availability*
- *Plant Type*

<i>Item</i>	<i>Maximum RAP %</i>
<i>Base</i>	<b>35</b>
<i>Intermediate</i>	<b>35</b>
<i>Surface</i>	<b>25</b>



# Value of RAP





# Value of RAP

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- “It’s worth as much as it replaces.”
- e.g.: Fine RAP
  - Asphalt 4.5% @ \$360/ton = \$16.20
  - Aggregate 95.5% @ \$10/ton = \$ 9.55

\$25.75
- Less processing \$ 4.00
- Net value \$21.75



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# Discussion