

CP 52, HMA Mix Design - Submittal Checklist

Project No.: _____
 CDOT Mix Design No.: _____
 HMA Supplier Name: _____
 HMA Mix Design Company Name: _____
 Contractor Mix Design No.: _____
 Plant Location: _____
 HMA Grading and Gyration: _____
 PG Grade: _____
 Item No: _____
 PE Stamp Name: _____

Date Received _____

Mix Design Package: _____
 Materials Sampled: _____
 Material Sent to Central Lab: _____
 Results from Central Lab: _____
 Mix Design Approval: _____

3.2 One copy of Asphalt Mix Design on CDOT Form #429
 Stamped by a registered Professional Engineer in the State of Colorado
 Cover Letter describing asphalt mix design stamped by PE
 Microsoft® Excel® electronic version of the CDOT Form #429

Included	Missing	N/A	Date Received

4.2 Cover Letter

- Laboratory Name & Address
- Suppliers Name & Address
- Suppliers Unique Mix Design Number
- Date of Batch Trial Testing
- Source of all Mix Design Components
- Stamped and Signed by a Professional Engineer Registered in Colorado

Included	Missing	N/A	Date Received

4.3 (1) Aggregates Testing (Each Stockpile)

- A. Source
- B. Gradation (CP 31) (at least the 10 most current samples, during production)
- C. Specific Gravity (CP-L 4102 & AASHTO T 85) (3 most current samples, during prod.)
- D. Atterburg Limits (AASHTO T90)
- E. Los Angeles Abrasion (AASHTO T 96)
- F. Statistical Data for Apparent SpG and Bulk SpG

Included	Missing	N/A	Date Received

4.3 (2) Reclaimed Asphalt Pavement (RAP) (Source and Statistical Data - at least 10 samples)

- A. Asphalt Binder Content (AASHTO T-164, Method A or B, or CP-L 5120)
- B. RAP Aggregate Gradation (CP 31)
- C. Effective Specific Gravity (CP 51, Method B)
- D. Uniformity Calculations to include Binder Content and Aggregate Gradation

Included	Missing	N/A	Date Received

4.3 (3) Reclaimed Asphalt Shingles (RAS) (Source and Statistical Data - at least 10 samples)

- A. Asphalt Binder Content (AASHTO T-164, Method A or B, or CP-L 5120)
- B. RAS Aggregate Gradation (AASHTO PP 53)
- C. Effective Specific Gravity (AASHTO PP 53)
- D. Uniformity Calc. for RAS, to includes Grad., Binder Content and % passing #200
- E. Copy of RAS QC Plan

Included	Missing	N/A	Date Received

	Included	Missing	N/A	Date Received
4.3 (4) Combined Aggregate Properties:				
A. Percentage of each aggregate used				
B. Combined aggregate gradation w and w/o RAP				
C. Sand Equivalent				
D. Fine and Coarse Aggregate Bulk Specific Gravity				
E. Fine Aggregate Angularity				
F. Combined Aggregate, Apparent and Bulk Specific Gravity				
G. Fractured Faces				
H. Micro-Deval (CP-L 4211)				
I. Effective Specific Gravity				
4.3 (5) Source and Grade of Binder (from APL)				
Specific Gravity				
4.3 (6) Hydrated Lime (APL)				
Lime Supplier & Location				
4.3 (7) Name and percentage of each additive				
4.3 (8) For each Asphalt Content Tested:				
A. Voids in Mineral Aggregate (VMA) @ N_{des}				
B. Dust to Asphalt Ratio				
C. Percent Voids Filled (VFA) @ N_{des}				
D. Hveem Stability at N_{des} (S & SX mixes only)				
E. Maximum Theoretical Specific Gravity				
F. Bulk Specific Gravity @ N_{des}				
G. Air voids, Voids in Total Mix (VTM) @ N_{des}				
4.3 (9) Graphs of Stability, Air Voids, VMA, and VFA vs Total Asphalt Content				
4.3 (10) Lottman and wet/dry tensile strength at optimum Asphalt Content				
4.3 (11) 0.45 power plot of the prop. comb. agg. grad. w/ Max Density Line & Ctrl Pts				
4.3 (12) SMA - Additional Information				
A. Bulk Specific Gravity of the Coarse Aggregate Fraction				
B. Unit weight of the Coarse Aggregate Fraction in dry rodded condition				
C. Draindown test results (At production temps)				
D. Mineral filler analysis				
4.3 (12) Warm Mix Asphalt				
A. Contractor WMA Design Considerations				
i. Summary of WMA design vs HMA design				
ii. WMA deviation from CDOT Design				
B. WMA Production Considerations				
i. Summary Equip and Plant requirements				
ii. Property Differences Design to WMA production				
iii. If WMA produced on project fails mixture verification				
C. WMA Contacts				
i. WMA product manufacture representative				
ii. WMA contact during production.				