

Chip Seal Checklist

1. Upon receipt of the proposal.
 - A. Examine the plans in the proposal make notes of any questions that you have. If there is a conflict the proposal will govern over Standard Specifications.
 - a. Scope of work.
 - b. Determine where the chip sealing is to be done on the project.
 - B. Notes.
 - a. Read the General Notes to determine details that are project specific and not included in the specifications that apply to Chip Seal. Plan notes supersede specifications if there is a conflict.
 - C. Typical sections.
 - a. Typical sections are defined by their stationing. There may be more than one typical section on a project. Examine all typical sections.
 - b. Locations where the typical section changes.
 - D. Basis of Estimate.
 - a. Plan quantity of Bid Items for the project. Bid Items are listed by specification section and code.
 - b. Type of bitumen.
 - c. Class of cover coat material.
 - d. Application rate used to determine quantities.
 - E. Standard Details.
 - a. Find and examine Standard Details that pertain to sealing operations such as traffic control operations; a list of Standard Details will be included in the Table of Contents in the plans included in the proposal.
 - F. Standard Specifications.
 1. Review Section 420 of the Standard Specifications to refresh knowledge of requirements for the work. Section 420 covers the Description, Materials, Equipment, Construction Requirements, Method of Measurement, and Basis of Payment for Bituminous Seal Coat.
 2. Review all specifications referenced within Section 420. Often another specification will be referenced within a specification to save duplication. The referenced specification becomes part of the specification referring it. Materials specifications pertaining to the work will be referenced.
 - G. Proposal.
 - a. Look at Supplemental Specifications to be aware if any specification updates from the Standard Specifications have been made. Supplemental Specifications will govern over the Standard Specifications.
 - b. Examine the proposal to find Special Provisions regarding paving operations. Special Provisions are specific to the project and cover items and conditions that are not included in the Standard Specifications. Special Provisions govern over Plans, Supplemental Specifications and Standard Specifications.
 - H. Construction Manual.
 - a. Consult the Section 420 of the Construction Manual to review the responsibilities of the inspector for the work being performed.
 - I. Check the quantities of the bid items involved in the work. Plans are generally accurate but errors do happen and it is much better to find them early to avoid problems.
 - a. Organize calculations to identify where material is placed.

1. Mainline
 2. Shoulders
 3. Turn Lanes
 4. Acceleration/Deceleration Lanes
 5. Sideroads
 6. Approaches
 7. Etc.
- J. Prepare any necessary field books to document the work.
- K. Organize the documentation required for materials acceptance.
- a. Determine what materials are accepted by certification and which need sampling or testing.
 - b. Prepare a list of materials that are accepted by certification and a testing and sampling frequency for materials that require them.
2. Prior to start of sealing.
- A. Check stockpiles.
 - a. Identify type of material and location of stockpiles for the cover coat material.
 - b. Check for contamination.
 - c. Check for gradation to make sure it meets specification.
 - B. Equipment. Refer to Section 151 of the Standard Specifications.
 - a. Check pneumatic roller tires to make sure they are inflated to the pressure range in the specifications. Tire pressure cannot vary more than 5 psi between any of the tires. Check that all tires have a smooth surface.
 - b. Check the condition of the distributor and become familiar with the operation and instrumentation necessary to monitor emulsion application.
 - c. Check each gate control and setting on the chip spreader so cover material is spread evenly and make sure the scalping screen is in good condition to eliminate oversize material.
 - d. Truck boxes should be checked to make sure they are clean and free of debris. Make sure box apron or extension is sufficient to load the chip spreader without cover material leaking.
 - e. The broom must be adjustable vertically to avoid excess pressure.
 - f. All equipment needs to be clean and free of leaks.
3. Chip Sealing
- A. Bitumen Application
 - a. Where the pavement surface is broken or shows instability it must be repaired by the Contractor prior to applying the bitumen.
 - b. Make sure the paving surface is clean. Tack will bond to dust and dirt on the roadway which could cause the chip seal not to bond to the pavement.
 - c. The application starts and stops on building paper or metal sheets to produce neat straight edges for joints.
 - d. Check the amount of tack in the distributor.
 - e. Check the temperature of the tack. If it is too cool it will not spray properly and if it is too hot it may begin to break in the distributor.
 - f. Collect samples as required.
 - g. Make sure the spray bar is heated.
 - h. Check that all nozzles are working properly.
 - i. Check the bar height to make sure coverage of the paving surface is uniform.
 - j. Record the beginning and ending stations of each tack shot.

- k. After tack is applied check the amount of tack left in the distributor to check and record the rate of application.
 - l. Streaking of the bitumen will not be allowed. If streaking is occurring cease operations until the problem has been corrected.
 - m. Make sure structures or appurtenances are protected from splattering. Make sure that asphalt is applied so no ridges or depressions are created at joints.
- B. Chip Spreading
- a. Determine the requirements for the condition of the aggregate at the time of application for the bitumen being used. Refer to Standard Specifications, Section 420.04C.
 - b. The chip spreader follows closely to the distributor. The chip spreader should be within 100ft of the distributor.
 - c. The chip spreader travels slowly enough that the aggregate does not roll when it hits the surface.
 - d. The application appears uniform. Any deficient areas need to be covered with additional cover coat material or blotter material immediately.
 - e. The aggregate has a salt and pepper appearance.
 - f. There is no asphalt on the top of the chips.
 - g. The percentage of embedment in the asphalt is checked and the asphalt or cover coat material is adjusted if necessary.
 - h. If initial sweeping results in a large amount of aggregate being removed lower the application rate of the cover coat material.
 - i. Check the spread rate of the cover coat material.
- C. Rolling
- a. The rollers follow closely behind the spreader. The aggregate must be embedded prior to the emulsion breaking.
 - b. The cover coat material will be rolled completely a minimum of four times. The first pass should be at the meetline when matching an adjacent lane.
 - c. The rollers travel slowly, maximum speed is 7mph.
 - d. All starts, stops, and turns are made gradually.
 - e. The rollers must avoid driving on any exposed bitumen to avoid picking up the cover coat material.
- D. Truck Operation
- a. Trucks are staggered across the fresh seal coat to avoid driving over the same area.
 - b. Trucks travel slowly over the fresh seal coat.
 - c. Avoid quick starts, stops and turns on the fresh seal coat.
 - d. Stagger wheelpaths when backing into the spreader.
 - e. Avoid driving over exposed bitumen.
- E. Brooming
- a. Lightly broom loose cover coat material off during the cool period of the morning during the cool period of the morning within 36 to 48 hours of application.
 - b. Do not dislodge aggregate.
 - c. In curb and gutter sections excess material will be broomed toward the gutter and picked up and disposed of.
 - d. Final brooming will begin as soon as practicable after sealing. It shall be broomed within 5 days after the seal has been applied.
- F. Limitations
- a. Do not apply bitumen to a wet surface. Do not start if rain is likely.

- b. Do not seal if the pavement temperature is less than 70 degrees Fahrenheit.
 - c. Chip seals cannot start after September 1.
- G. Maintenance Period
- a. Maintain the seal coat during the sealing process and for 5 days after the completion of the seal coat.
 - b. The Contractor shall make repairs of the seal coat within 2 hours of notification.
 - c. Maintenance may include:
 - 1. Application of blotter sand in case of bleeding. Blotter sand must be applied with an aggregate spreader.
 - 2. Application of additional cover coat material and rolling. Sweeping excess cover coat material from the shoulder is not permitted.