

## **Section 42 Groove and Grind Concrete**

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### Section 42 Groove and Grind Concrete

#### 4-4201 General

This section provides guidelines for inspecting groove and grind concrete roadway surfaces for work specified under Section 42, “Groove and Grind Concrete,” of the *Standard Specifications*.

The *Concrete Pavement Guide* discusses groove and grind strategies of concrete pavements and is available at:

<https://dot.ca.gov/programs/maintenance/pavement/concrete-pavement-and-pavement-foundations>

Grooving is usually performed to reduce wet weather accidents on existing concrete pavements or as friction correction on new concrete pavements.

Grinding is usually performed to improve the ride quality and texture on existing concrete pavements or for smoothness and friction correction on new concrete pavements.

#### 4-4202 Before Work Begins

Include the following in the preliminary review and inspections:

- If the contract specifies inertial profiler measurements, discuss pavement smoothness requirements with the contractor, including existing smoothness information, submittals, and any contractual testing dispute resolution processes. Refer to Section 4-36, “Surfacing and Pavements—General,” of this manual for pavement smoothness procedures. Remind the contractor that failure to achieve compliance will require corrective action or removal and replacement, refer to Section 5-1.30, “Noncompliant and Unauthorized Work,” of the *Standard Specifications*.
- Discuss traffic handling with the contractor and review the contractor’s plan for lane closures. For traffic handling devices and lane closure procedures, refer to Sections 4-12, “Temporary Traffic Control,” and 2-2, “Traffic,” of this manual.
- Verify that the contractor’s equipment meets specified requirements.
- Locate loop detectors to prevent damage to the loop detectors’ sealant. If loop detectors are not visible, consult with the district Traffic Unit.
- Check local noise ordinances and review specified noise requirements.
- In areas to be grooved and ground, see if the contract requires yellow stripe and pavement marking removal before grooving and grinding. If yellow striping and marking must be removed before grooving and grinding, refer to Section 7-107E, “Removing Yellow Traffic Stripe and Pavement Markings with Hazardous Waste Residue,” of this manual.

- Verify the existence of a water pollution control plan.
- The contract may show locations for on-site drying of concrete grooving and grinding residue before disposal. Verify that temporary storage materials for this purpose conform to WM-8, “Concrete Waste Management,” in the *Construction Site Best Management Practices (BMPs) Manual* or Section 13-9.02, “Materials,” of the *Standard Specifications*.
- The contract or materials information handout may identify locations within the right-of-way for final disposal of concrete grinding and grooving residue. The resident engineer must verify that a Regional Water Quality Control Board permit or approval is included in the materials information handout or resident engineer file. If the permit or approval has not been included, contact your environmental-construction liaison for assistance in obtaining these documents. Refer to the contract special provisions to obtain information about offsite disposal facilities for concrete grooving and grinding residue.
- When the contract documents do not allow final disposal of grooving and grinding residue within the right-of-way, obtain from the contractor the name and location of the disposal facility that will receive the concrete grooving and grinding residues, in accordance with Sections 5-1.20B(4), “Contractor-Property Owner Agreement,” and 13-4.03E(7), “Paving, Sealing, Saw Cutting, Grooving, and Grinding Activities,” of the *Standard Specifications*. Obtain a copy of the facility’s water quality or other applicable agency permit or written approval; or applicable local, state, or federal agency permits for disposal sites outside of California. Also verify the following:
  1. The disposal facility is permitted by the California Environmental Protection Agency (CalEPA) to accept concrete residue. Oral confirmation from the facility operator and documentation in the resident engineer’s daily report are sufficient verification of the permit status of commercial disposal facilities on this list.
  2. The contractor provides a copy of the CalEPA permit for disposal of the liquid concrete residue if choosing the noncommercial offsite disposal facility.
  3. If the disposal site is outside of California, the contractor must provide to the resident engineer a copy of the permit issued by the state agency having jurisdiction over the site. The permit must be provided before disposal.

#### **4-4203 During the Course of Work**

During the course of the work, do the following:

##### **4-4203A Grooving and Grinding Operations**

The following apply to both grooving and grinding operations:

- Observe the operation to verify that equipment and noise levels comply with specifications.

- Make sure that the handling of residue and dust from the operation meets specifications.
- Verify that the grooved or ground widths meet specifications.
- Make sure that a vacuum device picks up the concrete residue and that the residue does not flow across the pavement or enter storm drain inlets.
- For projects that temporarily store concrete residue in washout facilities, check that the plastic liner seams are installed in accordance with manufacturer requirements. Regularly inspect the liners during installation and operations to verify that they are free of holes, tears, or other defects that will compromise the impermeability of the liner. Inspect washout facilities to make sure that adequate holding capacity and minimum freeboard are maintained.
- When the operation is complete, and offsite disposal is specified, obtain from the contractor final proof of delivery of the residue to the off-site disposal facility.

#### 4-4203B Grooving

When grooving is specified:

- At the beginning of the work shift, check behind the grooving machine to make sure that all the blades are cutting grooves to the specified depth.
- Record the locations of omitted grooves. When specified, require the cutting of omitted grooves.

#### 4-4203C Grinding

When grinding is specified:

- Unless specified otherwise, test for pavement smoothness under Sections 36-3, "Pavement Smoothness," and 40, "Concrete Pavement," of the *Standard Specifications*.
- Determine if any abnormally depressed areas must be excluded from testing with the inertial profiler and the 12-foot straightedge.
- Verify that the inertial profiler uses a minimum 4-inch line laser to obtain profile measurements for concrete pavements.
- Make sure the contractor submits inertial profile information to [Concrete.Smoothness@dot.ca.gov](mailto:Concrete.Smoothness@dot.ca.gov) in accordance with Section 36-3, "Pavement Smoothness," of the *Standard Specifications*.
- Check that ground areas on structures, approach slabs, and 50 feet of approach pavement meet the smoothness and cover requirements in Section 51-1.01D(3)(b), "Testing Concrete Surfaces," of the *Standard Specifications*.
- In accordance with California Test 342, "Method of Test for Surface Skid Resistance with the California Portable Skid Test," determine the coefficient of friction for surfaces that have been ground, and do not open lanes to traffic unless requirements are met.

#### **4-4204 Level of Inspection**

Suggested levels of inspection for grooving and grinding activities are:

- Intermittent review of pavement smoothness
- Benchmark review of coefficient of friction

#### **4-4205 Quality Control**

Check that the contractor is actively performing quality control on pavement smoothness throughout the grinding operations by reviewing inertial profile data.

#### **4-4206 Payment**

For measurement and payment, do the following:

- Review the plans and quantity calculations in the resident engineer's file to determine if there is sufficient detail and accuracy to be used in the project records.
- Measure both grooving and grinding by the area grooved or ground. As the work progresses, make transverse measurements to verify that the grooved or ground areas meet the widths specified. You may compute lengths by measuring the distance to start and stop locations from known stations and by computing the length grooved or ground from the stationing. Include curve corrections in the calculations.
- Where grinding has begun on an area that is then replaced by concrete pavement, do not pay for the original grinding area. Instead, measure the area of replaced concrete pavement and pay under the item for grind existing concrete pavement. Do not pay for grinding replacement concrete pavement or for additional grinding to comply with smoothness requirements.
- Refer to Sections 36-3, "Pavement Smoothness," and 40-1, "General," of the *Standard Specifications* for pavement smoothness requirements and payment adjustments, as well as Section 4-4003D, "Post-Paving," of this manual.