

## **S.S.P. 427 - SLAB REPLACEMENT (FULL OR PARTIAL)**

**427.01 - Description** This item shall consist of all work necessary to remove and replace the concrete pavement in failing areas as shown on the plans and/or as directed. Sequence of work shall be in accordance with S.S.P. 420, Concrete Pavement Rehabilitation.

**427.02 - Materials** Materials and testing shall meet the requirements shown in Section 409 - Portland Cement Concrete Pavement. Epoxy for grouting tie bars and dowels shall meet the requirements of AASHTO M-235, Class III or ASTM C881, Type I or II, Grade 2 or 3, with class selected to match field temperature. Quick setting, non-shrink mortar or other proposed alternative materials for grouting tie bars and dowels into existing slabs shall be approved by the Engineer.

**427.03 - Construction** Concrete slabs designated for full or partial replacement shall be removed in such a manner as not to damage the surrounding pavement or base. Full depth saw cuts shall be made around the perimeter of the slab area to be removed to prevent damage to the concrete which is to remain in place. Impact methods such as drop hammers and hoe rams shall not be used to facilitate slab removal. Cost of repairing damaged or destroyed dowels, base, plant mix shoulders and slabs will not be paid for separately unless otherwise provided.

Tie bars may be left in place if they can be straightened and cleaned. If tie bars are sawed off or destroyed during slab removal, new bars must be installed at the spacing shown on the plans by drilling and grouting them into the adjacent slabs as directed. Load transfer (dowel) bars shall be grouted into the adjacent slabs and lubricated prior to placing the concrete as shown on the plans. An approved template shall be used when drilling holes for dowels and tie bars.

The contractor shall preserve and maintain the existing base in close conformance to the original grade except where removal of unstable materials is directed.

All removed concrete, unstable material and debris shall be loaded as it is removed and disposed of in an approved manner. The contractor shall be responsible for obtaining a suitable waste area.

Applicable provision of Section 409 of the Standard Specifications shall govern all replacement concrete except that a 4-inch slump will be allowed when hand methods are used and a 3-inch slump for machine methods.

Transverse joints shall be aligned with existing joints. Joint design and sealant will be as indicated on the plans.

Slip form pavers will not be required for replacement concrete, and Subsection 409.03 - Construction Requirements shall govern the work. Plastic strip joints will not be permitted as a permanent joint filler.

Concrete shall be used to fill minor irregularities below base grade as directed by the Engineer. Where leveling or excavation and backfill of unstable areas is directed, plantmix shall be used to provide a non-erodible base directly under the replacement slab. Plantmix leveling shall be at least 1" in thickness. Reconstructed areas shall include a 3" minimum thickness of plantmix base. Payment will be made under applicable contract items or as per subsection 109.03.

The existing transverse and longitudinal joint system shall be preserved when placing fresh concrete in

the replacement slabs.. At all locations where new concrete is to be placed against existing concrete, two-inch strips of foam tape, or other suitable material shall be set in place prior to concrete replacement. The strips shall be thoroughly removed by sawing when preparing the joints for sealant. When replacing adjacent or consecutive slabs, stress relief joints must be saw cut at interim joint locations as soon as possible to control shrinkage cracking.

The Engineer will decide when the replacement slabs shall be opened to traffic. New slabs will not be opened to the contractor's equipment or traffic until test specimens have attained a minimum compressive strength of 2500 p.s.i. Mix proportioning shall conform to subsection 409.03.

Entrained air content of the fresh concrete shall conform with the normal range of 4 to 7 percent. Additional air entraining agent may be required when using higher cement factors to achieve early strength.

**427.04 - Method of Measurement** Removal of concrete pavement will be measured by the square yard using the average squared dimensions. This item shall include all removal, disposal, new tie bars, base leveling, preparation, and any other work necessary to prepare the forms for replacement concrete.

Concrete slab replacement will be measured by the cubic yard for furnishing and delivering concrete, and by the square yard for placing, finishing, curing, joint construction and all details not included in other items. Cubic yard measurement will be based on batch weights for concrete used in the accepted pavement. Square yard measurement will be based on the top surface of the pavement replaced using the average squared dimensions. Excavation of unstable material will be measured by the cubic yard using the average squared dimensions of the excavated area.

**427.05 - Basis of Payment** The accepted quantities of concrete slab replacement will be paid for at the contract unit prices for the items listed below. The cost of the dowels and tie bars will be considered incidental to the concrete slab replacement.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Pavement Removal	Square Yard
Furnish Concrete Pavement	Cubic Yard
Placing & Finishing Pavement	Square Yard
Excavate Unstable Material	Cubic Yard