

Technical Information

RECOMMENDATIONS FOR PLACEMENT OF SAKONITE FOR INDUSTRIAL PAVING

SAKONITE is a hydraulic setting refractory concrete used for paving where heavy traffic will be encountered, where hot metal splash is likely to be present, or where temperatures are excessive for ordinary Portland Cement concrete.

SAKONITE comes in 55 lb bags and only water need be added prior to placement. In general, it can be mixed, poured, and finished much like ordinary concrete.

SUB-FOUNDATION

SAKONITE, when used for industrial paving, should be placed at least 4½" in thickness. If it is placed directly over a cured concrete slab, the total thickness of the concrete and SAKONITE should conform with thickness under the expected load conditions as recommended by the Portland Cement Association.

Preparation of sub-grade directly under the concrete and SAKONITE paving shall be made in accordance with standard practices as recommended by the Portland Cement Association.

Materials - SAKONITE, being a prepared mix, is available in 55 lb sacks. It takes a hydraulic set faster than Portland Cement concretes and its aggregate is finer than commonly used in concretes. Its in-place density is approximately 125 lbs per cubic foot. It should be stored in a dry place at all times and not exposed to rain or other moisture.

It is shipped fresh from the factory and should be used within a period of one year from date of manufacture. Water used in mixing or curing should be drinking water quality, clean and free from oil, salt, sugar, and vegetable or other substances harmful to it. If at any time the water from any source shall become unsatisfactory in quality or insufficient quantity, the contractor should be required to produce satisfactory water from some other source.

Reinforcing Steel - The use of steel wire fabric reinforcement is recommended where the sub-foundation is not concrete or concrete not designed for placement of SAKONITE. (For example, without reinforcement or with a smooth finish, or both.) This should be designation 66-66 (6" x 6" opening with six gauge wire with weight of approximately 58 lbs per 100 square feet). This should conform to the requirements of the current A.S.T.M. Standard Specification for welded steel wire fabric for concrete reinforcement (Designation A-185).

Expansion Joint Material - Expansion joint material shall be of a non-extruding type. This material shall conform to the requirements of the current A.S.T.M. Standard Specification for preformed expansion joint fillers for concrete.

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CONSTRUCTION

Preparation of Sub-Foundation of Concrete - The proportioning, consistency, workability, mixing, and pouring of the concrete sub-foundation shall be done according to standard methods as set forth in recommendations by the Portland Cement Association. Finishing of the sub-foundation should leave a rough surface.

The sub-foundations shall be thoroughly clean and free from foreign material. It shall be thoroughly wetted a sufficient time in advance of placement of SAKONITE to insure that there will be no puddles or pockets of mud. It shall not be allowed to dry out before the SAKONITE is placed. The sub-foundation shall be finished and in an acceptable condition for at least one day's progress in advance of the construction at all times.

Forms - If a machine is used for finishing the SAKONITE, all side forms for this work should be of metal. These shall be of shaped steel sections and shall be of a depth at least equal to the edge thickness of the work prescribed and shall have a minimum base width of six inches. The forms should be free from warps, bends, or kinks.

Wooden Forms - Wooden forms may be used when hand methods are used for finishing or where permission is obtained for their use. Wooden forms shall be equal in depth to the thickness of the work prescribed. Forms shall be firmly nailed or secured to side stakes at intervals standard for concrete work (not to exceed six feet apart).

Preparation and Placement of SAKONITE - Water should be added in amounts between thirteen and sixteen percent by weight, depending upon local conditions, type of mixer, etc. The SAKONITE, when mixed, should at all times be of such workability that it can be readily puddled into corners and angles of the forms and around joints and reinforcement without excessive spading, segregation, or undue accumulation of water on the surface.

Mixing - The SAKONITE shall be mixed in a drum mixer which shall conform to the requirements of the concrete mixer standards of the Mixer Manufacturers' Bureau of the Associated General Contractors of America. The mixer should be capable of combining dry mix and water into a thoroughly mixed and uniform mass within the specified time. The entire contents of the drums shall be discharged before recharging. The volume of material per batch shall not exceed the manufacturer's guaranteed capacity (110% of rated capacity) of the mixer. Do NOT use hot water.

SAKONITE will start a hydraulic set in approximately twenty minutes from time of mixing; therefore, the mixer should be kept free from caking at all times. This can be partially achieved by adding a portion of the total water and allowing mixer to free solid material from the sides of the drum before adding dry ingredients.

Time of Mixing - The mixing of each batch shall continue not less than one minute after all materials are in the mixer. The mixer should rotate at the rate recommended by the manufacturer. The SAKONITE should be placed in the least amount of time possible. Best results are achieved by placing within five minutes after the mixing process.

Retempering - The retempering (remixing with or without additional dry material or water) should not be permitted.

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JOINTS

Longitudinal Joints - We refer to longitudinal joints as those parallel to the lanes of construction. The placement of these joints should be the same as that used in the concrete sub-formation directly under the SAKONITE slab. The type of joints used should be the same as that used in concrete work (usually the keyed or tongue and grooved type).

Longitudinal Expansion Joints - Longitudinal expansion joints are necessary wherever the pavement will come in contact with buildings, existing structures, or machinery. Expansion joints from 3/4" to 1½" in thickness should be provided, using a non-extruding type of filler.

Traverse Contraction Joints - These are necessary at the end of each day's run or where paving operations are suspended for twenty minutes or more.

Expansion Joints at Fixed Objects - All fixed objects such as buildings, poles, pipes, catch basins, manholes, inlet castings, etc., within or abutting the pavement shall be separated from the SAKONITE by expansion joint material for the full depth of the slab.

PLACEMENT OF SAKONITE

The SAKONITE shall be mixed in quantities required for immediate use and shall be deposited on the sub-foundation to the required depth and width of the construction slab in successive batches and in a continuous operation with the use of intermediate forms or bulkheads. While being placed, it should be spaded and compacted with suitable tools so that the formation of voids or honeycomb pockets is prevented. The SAKONITE should be especially well spaded and tamped against the forms and along all joints.

Finishing - If mechanical finishing is used, the SAKONITE will be struck off at such a height that after consolidation and final finishing, it shall be at the exact elevation as shown on the plans. A depth of at least two inches of material shall be carried in front of the strike-off screed for the full width of the slab, wherever the screed is being used to strike off the pavement.

If hand finishing is used, the SAKONITE shall be struck off and consolidated by means of metal shod screed to cross-section as shown on the plans and to such an elevation above grade that when consolidated and finished, the surface will be at the required elevation. The screed shall be moved forward with a combined longitudinal and transverse motion, moving always in the direction in which work is progressing and so manipulated that neither end is raised during the strike-off process.

Scraping - After passage of the float, the pavement shall be scraped with a straightedge, equipped with a handle to permit it to be operated from the edge of the pavement.

Straight-edging - This should be done as is standard practice with any concrete paving work. Any irregularities discovered should be corrected by adding or removing SAKONITE. This must be done when the SAKONITE is still plastic.



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Final Finish - Belting, brooming, trowelling, or burlap drag finish will be at the discretion of the customer and carried out in accordance with standard practices.

Edging - After final finishing is completed, but before the SAKONITE has taken its initial set, the edges of the slab shall be carefully finished with an edger of a radius approved by the customer.

Curing - The entire surface shall be kept wetted in an approved manner for a period of 24 hours. Precautions should be taken to avoid damage to the final finish.

Forms may be removed after the 24 hour water cure and the SAKONITE allowed to air dry for an additional 48 hours.

Cold Weather - SAKONITE should be treated exactly as concrete during cold weather conditions.

Paving should be suspended when temperatures drop below 40°F. If freezing is possible within 72 hours after placement, suitable protection of hay, straw, etc., should be spread over work to prevent freezing.

Opening to Traffic - Neither construction equipment nor other traffic shall be permitted to use the pavement until permission is granted by the engineer in charge of construction.

Since installations and dry outs vary greatly, this document cannot address all possible circumstances. Installations and dry outs should only be performed by people with appropriate experience in installing and drying out similar refractories. Safety procedures and common sense should be used at all times. Be sure to view the MSDS for the product prior to handling it. If you have any questions, please contact Resco Products, Inc.