

Crushed Stone Base Preparation for Bonded Rubber Playground Surface Installations

The construction of a crushed stone base for Poured-in-Place playground surface installations is critical to the long-term durability of the playground surface. Particular size stones and compaction rates are necessary. Completion of the crushed stone base to specification is to be done in advance of Surface America's crews arriving for installation of the Poured-in-Place System.

The minimum depth of the crushed stone base is 4". Typical thickness range is 4" - 6". Crushed stone base layers thicker than 6" are more challenging to achieve the necessary 95% compaction rate throughout the base. Thickness is never to exceed 10".

The stone for the base must be crushed so it compacts to a 95% Standard Proctor Compaction (as per A.S.T.M. Test). The stones should be a homogeneous mixture of the following size stones:

Sieve Size	% Passing Weight
1"	90 - 100
5/8"	50 - 80
1/4"	30 - 50
#4	15 - 35
#8	10 - 30
#30	3 - 5
#200	0 - 3

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The crushed stone base should be sloped 2% to allow run-off of the excess water that doesn't percolate through the crushed stone.

Poured-in-Place Systems are extremely porous. Most of the water enters the system and must be able to percolate through the crushed stone base so puddling is avoided above the crushed stone base in the bottom layer of the poured-in-place material.

The crushed stone base must be thoroughly compacted by using a tamper, roller or combination of both. This is of critical importance so that settling of the crushed stone base does not happen after installation of the poured-in-place material. If post-installation settling occurs, of course, the poured-in-place system will follow the contour of the settled crushed stone, leaving an aesthetically inferior installation and possibly causing cracking in the poured-in-place material because of excess stress where the crushed stone base has settled out.

The crushed stone base must be a level plane that is smooth and comparable in look to the sub-surface of an asphalt road prior to the asphalt paving. This requires significant attention to accomplish. String lines must be used to ensure an even plane is constructed.

Any specific questions regarding crushed stone base construction are welcomed at Surface America.