

Building Black-Colored Concrete Tennis Court with White Mortar Playing Lines

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THE black-colored concrete tennis court which we built for the University of Chicago has several features that will interest concrete contractors. The plans, which were prepared by the building and grounds department of the university, called for black concrete topping that would prevent glare from bright sunlight. The playing lines were to be of white cement mortar which would not need constant repainting. The surface was to have a mat- or canvas-like finish. The drainage system was to be different in that surface water was to be collected and carried away without allowing it to run over the edges of the slab or over the next court.

All of these features interested me, and I could see that here was a chance to build something new in tennis court construction.

Construction Details

IN beginning this work we set stakes (about 10 ft. apart both ways) to the finished grade which allowed for a slope of 2 in. to one side. Next we laid 6-in. drain tile around the outside of the court, connecting it to the storm water drain. About 8 in. from the edge and near the net post on the low side of the court, we built up a riser pipe to provide an outlet for the integrally formed gutter along the outer edge of the concrete slab. Then we placed the base for the net posts. This was done early so that the forms could be taken off when we built the slab.

After the surface of the old court was removed to 5 in. below the top of the grade stakes, we set the forms which consisted of 2-in. material. They were set along the single court playing lines, continuing out to the edges of the court. In this way, the concrete slab was built in sections corresponding to the playing lines.



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To make the grooves for the white concrete playing lines, we used 2 by 2-in. wood strips beveled on one side to permit easy removal. These were lightly nailed to the form boards. For the double court lines, the 2 by 2's were notched into the top of the cross forms and supported in between on small wooden stakes. Later, when the strips were pulled out, we drove the stakes down and filled the spaces with white portland cement mortar.

All sections of the court were reinforced with large-mesh metal reinforcement weighing 78 lbs. per 100 sq. ft. To tie adjoining sections of the concrete together and keep them even, we placed $\frac{5}{8}$ -in. round bars, 30 in. long, about 3 ft. apart in all construction joints. The work was laid out so we could keep going without having to work over any of the completed slabs before they were at least two days old.

For the concrete in the 5-in. slab, we used a 1-2 $\frac{1}{2}$ -3 $\frac{1}{2}$ mix for the base and a 1-2 $\frac{1}{2}$ mix for the top. To get the color in the topping that the inspector wanted, we used 1 gal. of specially prepared liquid black mineral oxide to each sack of portland cement. We placed concrete

that was quite stiff yet workable. I mean "placed" not "poured" because the concrete we used wouldn't pour, but required placing. I have found that quite stiff concrete can be worked into place easily when the mix has enough sand in it. Where the concrete is placed sloppy, the finishers are always delayed and more time is required to work out the high and low spots left when the excess water gets away.

Speeding Up Work

TO speed up the job, we waited until two sections of the base course were filled, leveled and tamped before we put on the black-colored topping. We struck off the topping, wood-floated it and then steel-troweled it sparingly. Finish troweling was not needed since the court was to have a mat- or canvas-like finish. To get this finish we brushed the top both ways with a long-handled floor brush just as the water sheen disappeared from the surface. The brush had hair bristles. I found that if a brush is used too soon, the surface smears over; if too late, the brush will not score the surface. The right time to do this brushing, we found, was just when we wanted to go to dinner or go home at night, but we always stayed to complete the job.

Curing Important

WE have found that it pays to cure concrete carefully, especially on high grade colored jobs or surfaces which will receive a lot of wear. As quickly as the surface was hard enough so it wouldn't mar, we covered the finished sections with heavy waterproof paper to keep the concrete from drying out. After the last slab had cured for four days, we took off the paper covering and cleaned and washed the court with clear