



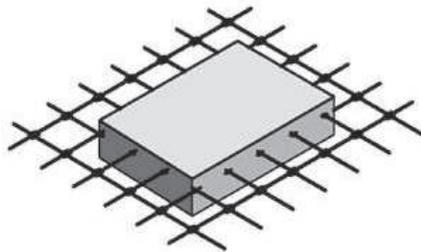
Concrete Parking in Practice

Concrete Parking in Practice is a series of publications from the Maryland Ready Mix Concrete Association (MRMCA) to help specifiers become more familiar with design and benefits of concrete parking lots.

CPIP No. 8 Use of Welded Wire Reinforcement

Welded wire reinforcement, often called welded wire fabric, consists of wires arranged in square or rectangular configuration. The wire is welded at their intersections. WWR is used in slabs-on-ground as primary and secondary reinforcement. As primary reinforcement, WWR increases the structural capacity. As secondary reinforcement, also known as distributed steel, WWR contributes to the crack-width control and will not add load-carrying capacity.

Newly placed concrete pavements undergo volume changes due to drying shrinkage, and temperature and moisture changes. Contraction joints are constructed to control the location and widths of cracks that may occur due these volume changes. In plain jointed pavements, strength to resist the load of a wheel rolling across a contraction joint or random crack is provided by the larger size aggregates that are interlocked across the crack. Aggregates are not able to provide the needed strength if the cracks become too wide.



WWR in concrete Pavement

The efficiency of aggregate interlock is typically maintained by limiting the spacing of joints to no more than 24 to 30 times the pavement thickness. For joint spacing that exceeds this recommendation, WWR can be used for crack-width control. ACI 332R-08 states "shorter unreinforced panels are generally more economical and provide better performance."



Typical crack at a contraction joint

Portland Cement Association

ACI 332-10 specifies crack-width control for slabs on ground with loads resulting from pedestrians and vehicles with passenger capacity of nine or less.

These loads are typical for parking lots subjected to light traffic loads. ACI 332 requires WWR when joints are not provided and when the spacing of joints exceeds 24 times the pavement thickness. The minimum area of WWR is 0.1% at a spacing of 24 times the pavement thickness. The minimum area of WWR is 0.5% when joint spacing exceeds 100 times the pavement thickness. For intermediate joints spacing, the area of reinforcement shall be determined by linear interpretation.

What is the next step?

The MRMCA provides an AIA-approved parking lot design class that may be used for Professional Development Hours (PDH's). We also participate in a national Design Assistance Program (DAP) and we cover the costs of the first project within the state of Maryland. Depending on project specifics, we will offer additional DAP projects at little or no cost. All we need are the current CAD drawings and a few pieces of project information. Contact us for more details.

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