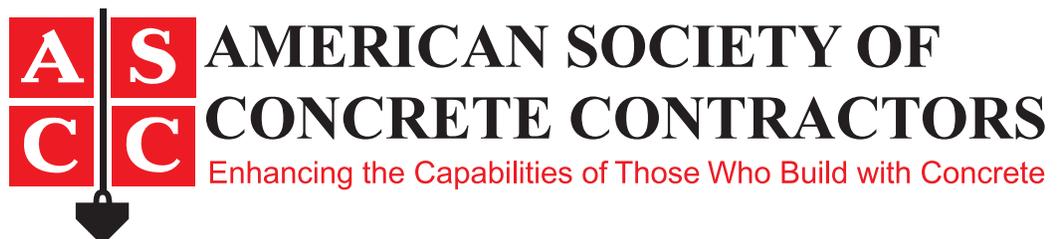

Location of Rolled Welded–Wire Fabric in Concrete

Position Statement #2



Location of Rolled Welded-Wire Fabric in Concrete

Some specifications require concrete contractors to use rolled welded-wire fabric for reinforcement in slabs-on-grade, topping slabs, and composite slabs on metal decking. The risk associated with using rolled welded-wire fabric is well known. It's difficult to ensure that the wire is placed in the specified position and remains there during concrete placement.

Rolled welded-wire fabric is available only in W1.4 to W4 wire sizes and varies in width from 5 to 8 ft (1.5 to 2.4 m). Lengths vary with application and convenience of handling and shipping. Rolls are straightened before use, but the resulting shape is a wavy profile.

ACI 302.1R-96, "Guide for Concrete Floor and Slab Construction," recommends that welded-wire fabric not be laid on the ground and "pulled up" after the concrete is placed nor "walked in" after placing the concrete. ACI 302 recommends using supports or support bars to maintain the proper elevation, but states that the support bars should be spaced close enough so the welded-wire fabric cannot be forced out of location by foot traffic. The cost of support bars for W1.4 and W4 wire sizes can be more than the cost of the welded-wire fabric, and the cross-sectional area of such support bars is about equal to the area provided by the welded-wire fabric. This argues for using bars instead of fabric.

There is some confusion regarding the role of welded-wire fabric. Neither fabric nor reinforcing bars prevent cracking. Reinforcement isn't

active until the concrete cracks, and then the reinforcement simply limits crack width and thus affects crack spacing. Rolled welded-wire fabric location within the slab is variable because of the wavy profile. The varying location creates variable crack widths and spacings. However, welded-wire fabric, even if placed exactly at the specified location, will not prevent cracking.

Bar placing tolerances given in ACI 117-90, "Standard Specifications for Tolerances for Concrete Construction and Materials," don't apply to the placing of welded-wire fabric in either rolls or sheets. The Mandatory Specification Checklist in ACI 117-90, Notes to the Architect/Engineer, states, "Tolerances for fabrication, placement, and lap splices for welded-wire fabric must be specified by the specifier." Thus, tolerances for either rolled or sheet welded-wire fabric must be specifically called out in the project specifications.

ASCC concrete contractors will use rolled welded-wire fabric if required by specification, but only with the acknowledgement that the risk associated with the location of the reinforcement is entirely the responsibility of the specifier. ASCC concrete contractors recommend using sheets of welded-wire fabric with wire spacings of 12 in. (300 mm) to allow for construction foot traffic.

If you have any questions, contact your ASCC concrete contractor or the ASCC Technical Hotline at (800) 331-0668.



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