

Item	Design Attribute	Description	Relevant Code Sections	Remarks
			ACI 318-25	
1	Tension Development Length and Lap Splice	ACI 318 allows the Engineer-of-Record to rely on strength of welded intersections in WWR, potentially reducing the tensile development length and lap splice lengths to dimensions less than those associated with rebar.	20.2.1.7.3(a) 25.4.6.1 → 25.4.6.4 25.5.2.1 → 25.5.3.1.1	Lap splice regions configured to rely on welded intersection contribution can be comparably shorter in length than those that rely only on deformed surface of the wire, but stacking where the mats overlap results in build-up of the reinforcement. Additionally for weld-reliant lap splices, the provisions of section 20.2.1.7.3(a) apply, requiring that the spacing of wires perpendicular to the splice direction not exceed 16 inches. As a streamlined alternative, many designers prefer to ignore the weld contribution and instead treat curtailment and lap splices of WWR using the same exact equations as apply for deformed bars/wires.
2	Development of Transverse Reinforcement	In lieu of hooked curtailment of U-stirrups, ACI 318 allows the Engineer-of-Record to rely on the strength of welded intersections located near the compression face of the member.	25.7.1.1 → 25.7.1.7	This lesser-known provision can prove valuable in gravity beam applications
3	Special Seismic Systems – Axial and Flexure Usage	WWR is not permitted for axial or flexural usage in Special Seismic Systems (Special Moment Frames and Special Structural Walls)	20.2.2.4 → 20.2.2.5	WWR is not a product with controlled tensile properties and as such is not permitted for use as axial or flexural reinforcement in Special Moment Frames and Special Structural walls. From the standpoint of practical manufacture, regardless of ductility attributes, usage of WWR in these elements is often a non-starter given the typically very large required steel areas within relatively confined member regions.
4	Special Seismic Systems – Welded Intersections	As noted in R20.2.2.4, in the absence of approval of special welded product through Code Section 1.10, welded intersections of WWR are permitted to be relied upon to resist stresses in response to confinement, lateral support of longitudinal bars, or shear in Special Seismic Systems.	Table 20.2.2.4(a) R20.2.2.4	WWR used as components of transverse reinforcement (hoops) in Special Seismic Systems should be configured with hooked curtailment.
5	Reinforcement Usage in Topping Slabs	For WWR used in topping slabs over precast systems in Seismic Design Categories D, E, or F, ACI dictates a minimum spacing requirement of 10" for wires in the direction parallel to joints between precast elements.	18.12.7.1	The referenced provision is based on maintaining sufficient strain distribution length between welds. WWR mats with the 10" prescriptive minimum spacing are commonly produced.

