



American Concrete Institute

Production of Welded Wire Reinforcement

Walk thru Production Ordering, Handling, And Delivery

2024 ACI Fall Convention – Philadelphia, PA



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Outline - Objectives

- Introduction -
- Guidelines - Specifications
- Getting, Making Materials
- Production Ordering
- Limits – Takeaways
- Conclusions



Guidelines - Specifications

- Starts with guidelines:

Most common Specifications for WWR Manufacturing - ASTM:

- A1064 – Carbon-Steel Wire & Welded Wire Reinforcement, Plain & Deformed, for Concrete
- A1060 - Zinc-Coated (Galvanized) Steel Welded Wire Reinforcement, Plain and Deformed, for Concrete
- A1022 - Deformed and Plain Stainless Steel Wire and Welded Wire for Concrete Reinforcement
- A884 – Epoxy-Coated Steel Wire and Welded Wire for Concrete Reinforcement



Get/Make Materials – Scrap Steel

- Melt – Smelt for Chemistry - in EAF
- Billets – square ingots of steel, cooled & then
- Roll to sizes close to order –

(1/64 intervals, 7/32" – 11/16"; 1 mm, 5-18 mm)





Melting, Casting, Rolling



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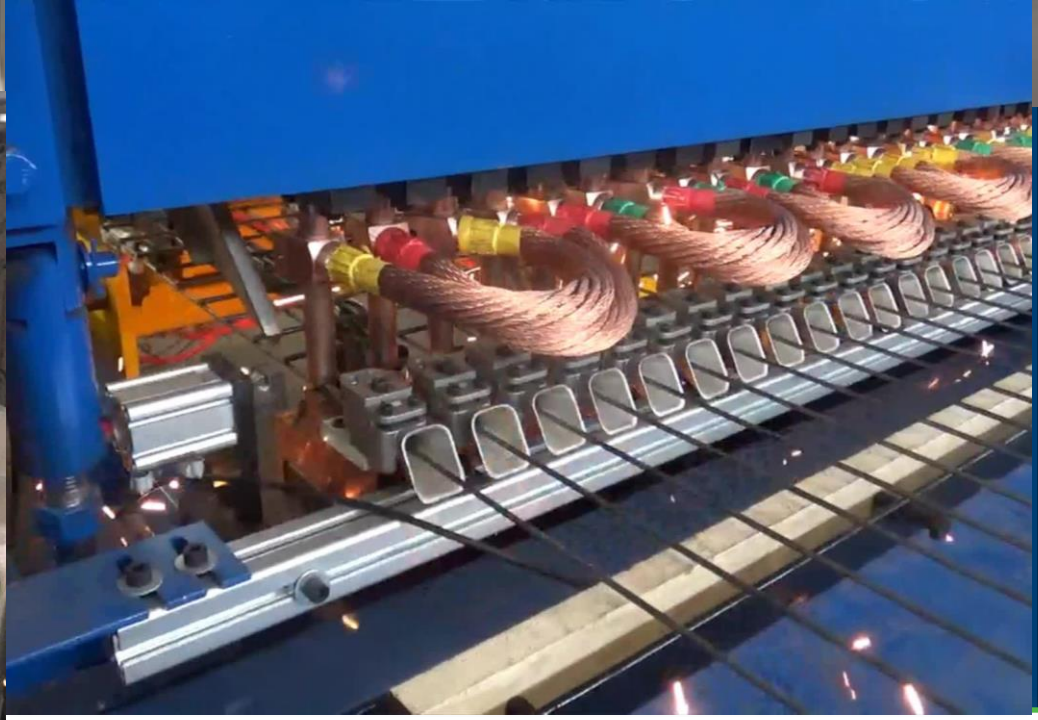
Order Production

- Drawing to size for WWR order (up to 20% size reduction, and strength requirements (60,65,70,75,80 ksi)
- Choose best process/machines to weld panels for order requirements-different machines, diff. specs; schedule production time.



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Limits on Manufacturing

- Shipping – size, weight, handling restrictions
- Weights for machine, plant equipment, shipping
- Offloading & site handling
- Bending – on site or pre-shipped (vol. on truck)





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North America vs the rest of the world

- In NA production orders are made to suit a product, individual states; fed regulations; county guidelines. Rest of world product fits design.
- Imperial vs metric units...need I say more☺!
- Measuring Design Methods
 - NA design to bar size, others design to area of steel.
- Construction Means & Methods – over site regulations
 - Environmental & site safety! + Tolerances
- Inspectors (or Contractors) Interpretations of Construction Docs
- Etc.

Conclusions

- WWR is a product made like no other
- Welded intersections stronger than individual members – alternate load paths
- Sheets made to order to product specs (NA).
 - size, spacings, steel areas, locations
 - Bent to be dropped into place in PC
 - Customized
- It is standardized all over the world.

For further references or a producer near you look at this website: <https://wirereinforcementinstitute.org>

Also See: ACI PRC-439.5-18: Comprehensive Guide for the Specification, Manufacture and Construction Use of Welded Wire Reinforcement

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