

# EXPECTED IMPLEMENTATION JULY 2014

## 548 RETAINING WALL SYSTEMS. (REV (10-16-13) (FA 12-18-13) (7-14)

SUBARTICLE 548-2.3 is deleted and the following substituted:

**548-2.3 Backfill Reinforcement:** For walls utilizing backfill reinforcement, use reinforcement consisting of steel wire mesh, metal strips or structural geosynthetics as required for the wall system chosen. Use backfill reinforcement of the same length from top to bottom of wall at any section. For tiered walls, use backfill reinforcement of the same length within the height of each tier at any section.

Use steel wire mesh and embedded loops shop fabricated from cold drawn steel wire and weld into the finished mesh fabric in accordance with ASTM A 1064. Use longitudinal and transverse wires of equal diameter within a given piece of mesh reinforcement. Use steel strips hot rolled from bars to the required shape and dimensions with physical and mechanical properties meeting ASTM A572 Grade 65 or as shown in the Contract Documents. Use shop-fabricated hot rolled steel tie straps meeting the minimum requirements of ASTM A1011/A1011 M, Grade 50, or as shown in the Contract Documents.

Ensure that steel reinforcing strips, tie strips, reinforcing mesh and connectors used in permanent walls are galvanized in accordance with ASTM A123 or ASTM A153, as applicable. For typical applications, punch or drill holes in metal items before galvanizing. Field drilled holes for bin walls are permitted. Repair field drilled holes; field cut ends and other damage to galvanized surfaces in accordance with Section 562.

Use structural geosynthetics made of polypropylene, select high density polyethylene or high-tenacity polyester fibers having cross-sections sufficient to permit significant mechanical interlock with the backfill. Use geosynthetics having a high tensile modulus in relation to the backfill. Use geosynthetics having high resistance to deformation under sustained long term design load while in service and resistant to ultraviolet degradation, to damage under normal construction practices and to all forms of biological or chemical degradation normally encountered in the material being reinforced. Do not use uncoated polyester (PET) reinforcements or reinforcements weakened or damaged by high pH environments within the flowable fill.

Store the geosynthetics in conditions above 20°F and not greater than 140°F. Prevent mud, wet cement, epoxy, and like materials from coming into contact with and affixing to the geosynthetic material. Rolled geosynthetic may be laid flat or stood on end for storage. Cover the geosynthetic and protect from sunlight prior to placement in the wall system.

Carefully inspect all reinforcement, steel and geosynthetics to ensure they are the proper size and free from defects that may impair their strength and durability.

ARTICLE 548-7 is deleted and the following substituted:

### **548-7 Handling Storage and Shipping.**

Handle, store and ship all components in a manner that prevents chipping, cracks, fractures, excessive bending stresses, mud, dirt and debris. Support precast components in storage on firm blocking located immediately adjacent to the attachment device.

Do not ship precast concrete wall components to the project site prior to the

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completion of the 72 hour curing period and attainment of the required 28 day strength.

The Contractor is permitted to verify the shipping strength test, before 28 days, by testing compressive strength cylinders that are cured under the conditions similar to the product or by testing temperature match cured cylinders. The shipping strength test is the average compressive strength of two test cylinders. Do not ship products until accepted and stamped by the Quality Control (QC) Manager or the inspectors under the direct observation of the QC Manager.

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