

PERFORMANCE SPECIFICATIONS

EXECUTION AND INSTALLATION OF VOID FORMS

1. Carton form shall be the product of a reputable manufacturer regularly engaged in the commercial production of corrugated paper void form products.
2. Product submittals containing evidence that products meet the requirements, must be provided by the manufacturer.
3. Carton form composition shall be of corrugated paper material having a wax coated exterior and an interior fabrication of uniform cellular configuration. It shall be composed of not more than one wax-impregnated medium component that is laminated with moisture resistant adhesive. Forms constructed of fully-waxed impregnated papers are not acceptable due to the degree of resistance to absorb moisture that allows structural degradation.
4. Carton form must have a designed strength to sustain the dead load of liquid concrete, plus normal construction loads until applied loads can be supported by the concrete structure, while maintaining full void depth as indicated on drawings.
5. Carton form material shall be designed to lose its strength upon contact with moisture contained in the soil beneath structural slabs and grade beams. Adequate environmental moisture must also be maintained in the voided area to allow the forms to incorporate this moisture after the setting of concrete.
6. Grade beams supported by carton forms that require soil retention products, shall be formed rather than cast directly against the soil.
7. Prepare ground surface on an even plane with no projections that will point load carton forms.
8. Substrate having capillary breaks may deny the carton form an adequate amount of moisture absorption that is needed for them to soften. If this condition exists, additional measures may be required to introduce water if the void material must degrade in a specific time period.
9. Upon request, a manufacturer's representative shall be available to attend a pre-construction meeting to discuss the series of preparation and installation techniques of carton form.
10. Install carton form system in strict conformance with the manufacturer's recommendations.
11. Provide positive drainage away from the structure to prevent accumulation of water near the foundation.
12. Carton form products must be kept dry prior to placement of concrete. Protect the forms from rain and on-site seepage. Do not install them on a wet sub-grade or during inclement weather.
13. Carton forms having questionable moisture content or obvious structural damage must be removed and be replaced prior to concrete placement. The contractor must ensure carton forms have not collapsed during concrete placement.

14. Carton forms must be the same width of the grade beam. Trapezoidal forms may not be used.

15. Adjacent to all drilled piers, install corrugated paper void form products that are pre-manufactured, sealed units with curved, radial, **vertically supported** edges conforming to each pier diameter. Use of these custom-made pieces prevents the typical damage to the interior supporting network of standard carton form caused by field-cutting around piers.

16. The upper 2' portion of each drilled pier must be properly formed and contained to the designated diameter. The placement of concrete to the required elevation can be done by hand placement methods.

17. All top surfaces of slab and grade beam carton form must be protected by a layer of ¼" minimum thickness of protection board in order to distribute point loading, bridge small gaps, and protect void forms from puncture and other damage during construction.

18. Soil Retention products shall be composed of lightweight, plastic materials that are not adversely affected by moisture or corrosive elements in the soil. They must be flexible, impact resistant and have sufficient strength to resist lateral loads applied by backfill.

19. Soil retainer should be installed in straight, clean trenches at both sides of the void form. Retainers must be properly positioned at the gap between the trench and carton form, then backfilled prior to the placement of concrete. Do not cast the sides of concrete beams directly against the soil.

20. Soil retainer can also be used as a form/retainer extending from the bottom of the trench to above the ground surface. It should be installed in straight, clean trenches at both sides of the void form. A 1/4" thick protection board should be placed on the carton form for protection and to be certain of the specified wall width. Bolsters should be tied to the rebar cages before being positioned in the open beam to ensure concrete coverage. After positioning the steel sections, the retainers should be pushed evenly against the bolsters, then simultaneously backfilled.

21. Concrete grade beams that are wood/metal formed require soil retainers to be vertically positioned a minimum of 6" above the void material and 4"-6" below at both sides for void spaces up to 12" in height. If required, they may be affixed to the concrete beam by adhesive, pin/washer/load, or concrete hard nail/washer @ 18" - 24" O.C.

22. Retainers, (impact-resistant, white (CPPP) polypropylene, or high density, black (HDPE) polyethylene plastic) – allow compaction equipment to operate directly adjacent to the wall or slab. Either product is designed to help deter rapid moisture loss around the perimeter of a slab and prevents the migration of backfill material into the voided area. The white retainer is placed in a vertical position above and below the void space. The black retainer is positioned at an angle in a dug groove sloping and extending upward against the concrete beam as recommended.