

**VILLAGE OF PLAINFIELD
BUILDING DIVISION**

CONCRETE HIGHLIGHTS – RESIDENTIAL CONSTRUCTION

THE FOLLOWING GENERAL REQUIREMENTS PERTAIN TO ALL CONCRETE
CONSTRUCTED WITHIN THE VILLAGE LIMITS OF PLAINFIELD.

- **BASEMENT FLOOR SLABS** – 4” inch thick concrete, over 1 layer of 6 Mil (Clear) Vapor Barrier (lapped 6” min. at all joints) and placed on 4” inch minimum granular base.
- **GAS CURBS** – A 4” inch minimum height gas curb shall be provided at each wall common with the attached garage and residence. A foundation wall may be utilized as a gas curb only if 6” inches of foundation are exposed above the garage floor slab at each common wall.
- **DRIVEWAYS** – 5” inch thick concrete with welded wire fabric or fiber mesh placed on 5” inch minimum well-compacted gravel base. **(2 x 4 forms are not allowed)**
- **DRIVEWAY APRONS** – 6” inch thick concrete with welded wire fabric or fiber mesh placed on 6” inch minimum well-compacted gravel base. The width of the approach at the curb cannot exceed 20’ feet. **(2 x 4 forms are not allowed)**
- **FOOTINGS** – 10” x 20” minimum.
- **FOUNDATION WALLS** – 8” inch minimum thickness for frame construction and includes two (2), #4 continuous top and bottom reinforcing bars plus corner bars. 10” inch minimum thickness for brick veneer construction. All anchor bolts shall be ½” inch round, 7” inch embedment, 6’- 0” O.C. (maximum spacing), 12” inches from each corner or break in plate and two (2) minimum per sill plate.
- **GARAGE FLOOR SLAB** – 4” inch minimum thick concrete with welded wire fabric (Fiber mesh may be utilized when the building department is notified) over fill 4” inch minimum thick compacted gravel. Slope slab toward the overhead door a minimum of 2” inches.

*NOTE: Fill material shall be clean, graded sand, crushed stone or gravel or floor must be pinned to foundation wall at 24” inches on center with #5 rebar extended 3’ feet into the floor. During winter months when the ground is frozen the garage must be backfilled completely with stone.

CONCRETE HIGHLIGHTS – RESIDENTIAL CONTINUED

- **PATIO SLAB** – 4” inch minimum thickness of concrete with welded wire fabric (Fiber mesh may be utilized when the building department is notified) over fill 4” inch minimum thick compacted gravel. Slope slab away from the building.
- **PORCHES AND STOOPS** – 4” inch minimum thickness concrete with welded wire fabric or fiber mesh over fill 4” inch minimum thick compacted gravel. Slope slab away from the building. Stoop inspection required only if 9’ square feet or greater. Riser height minimum is 4” inches and the maximum is 8-1/4” inches. Tread depth is a minimum of 10-1/4” inches. A handrail is required with 4 or more risers.
- **POST HOLES** – 10” inch diameter, 3’-6” minimum depth below finished grade and 2” inches above grade.
- **WALKS-PUBLIC** – are required and shall consist of the following.
 - 2 x 5 form boards (2 x 4 forms are not allowed).
 - Width – 5’ feet
 - 5” inch thick concrete on 5” inch thick minimum compacted CA-10 or CA-6 gravel fill.
 - 6” inch thick gravel and concrete at driveway with welded wire fabric or fiber mesh.
 - 5’-0” on center construction joints.
 - One half-inch 1/2” thick minimum expansion joints 30’ feet on center.
 - Slope 1/4” per foot toward curb.
 - Location 1’ foot from front property line(s).
 - Accessibility ramps required at corner lot intersections.
- **WALKS-SERVICE** – 4” inch minimum thickness for concrete, over fill 4” inch minimum thick compacted gravel. All sloping walks shall be no greater than 1/4” inch per foot.

NOTES:

- **DEBRIS** – Shall be removed in all areas of concrete placement.
- **FROST** – Shall be removed completely. No concrete shall be poured when frost is present in the area of placement.
- **WATER** – All water shall be removed prior to concrete placement.
- **WELDED WIRE FABRIC** – Shall be lapped a minimum of 6” inches and be wired together to avoid displacement.

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CONCRETE DESIGN STANDARD HIGHLIGHTS

THE DESIGN AND CONSTRUCTION OF CONCRETE SHALL CONFORM TO THE FOLLOWING GENERAL REQUIREMENTS:

- ❑ **CONCRETE DESIGN** – Concrete shall be designed and constructed in accordance with the provisions set forth in ACI 318.
- ❑ **CONCRETE STRENGTH** – The minimum compressive strength of concrete at twenty-eight (28) days shall be 3,000 psi with 5-1/2-bag mix.
- ❑ **CONTINUOUS CONCRETING** – Once started, concreting shall be carried on as a continuous operation until the placement is complete.
- ❑ **CONVEYING** – Concrete shall be conveyed from the mixer to the place of final deposit by methods that will prevent separation or loss of materials.
- ❑ **CURING** – Concrete (other than high early strength) shall be maintained above 50° degrees and in a moist condition for at least the first seven (7) days after placement.
- ❑ **DEPOSITING** – Concrete shall be deposited as nearly as practicable in its final position to avoid segregation caused by re-handling or flowing.
- ❑ **HIGH EARLY STRENGTH CONCRETE** – Shall be maintained above 50° degrees and in a moist condition for at least the first three (3) days after placement.
- ❑ **RE-TEMPERING** – Re-tempered concrete or concrete that has been remixed after initial set shall not be used **unless** approved in writing by a registered design professional.
- ❑ **UNACCEPTABLE CONCRETE** – Concrete that has partially hardened or has been contaminated by foreign materials shall not be utilized.

PREPARATION OF EQUIPMENT AND PLACEMENT OF DEPOSIT SHALL INCLUDE THE FOLLOWING CRITERIA:

- All equipment for mixing and transporting concrete shall be clean.
- All debris and ice shall be removed from spaces to be occupied by concrete.
- Forms shall be properly coated.
- Reinforcement shall be thoroughly clean of ice or other deleterious coating.
- Water shall be removed from the place of deposit before concrete is placed.

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CONCRETE COLD WEATHER HIGHLIGHTS

- ❖ **DEFINITION OF COLD WEATHER** – Cold weather is defined as a period when for more than three (3) consecutive days, the following conditions exist.
 - The average daily air temperature is less than 40° Fahrenheit.
 - The air temperature is less than 40° Fahrenheit for more than one half of any 24-hour period.
 - The average daily temperature is the average of the highest and the lowest temperatures occurring during the period from midnight to midnight. Cold weather usually starts during fall and usually continues until spring.

- **FOOTINGS** – shall be poured only on dry soil when the temperature is not less than 25° Fahrenheit. Concrete shall be protected in forms for not less than forty-eight (48) hours, with either insulation blankets, or not less than one (1) foot of straw, covered with plastic to prevent air and water infiltration. Straw shall cover top and sides of footing completely.

- **FOUNDATION WALLS** – shall be poured only when the temperature is not less than 25° Fahrenheit and is rising to 32° Fahrenheit or more. The pour shall be completed by noon to maximize curing time prior to nighttime falling temperature. Forms shall be kept in place for not less than 72 hours. Walls shall be protected with insulation blankets for not less than 72 hours prior to removal of any formwork.

- **GARAGE FLOOR** – The **only** material allowed for backfill of garage floors under winter conditions is **stone**.
 - Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near freezing weather.
 - All concrete materials and all reinforcing, forms, fillers and ground with which concrete is to come in contact with shall be free from frost.
 - Frozen materials or materials containing ice shall **not** be used.