

# CPG Tools for Success

## Residential Concrete – Durable Driveways and Patios

### References:

- CPG 2025 Tools for Success: *Deicer Damage Protection*
- NRMCA CIP Concrete in Practice Series, <https://my.nrmca.org/Main/ItemDetail?iProductCode=2PCIPS&CATEGORY=ENG>
- ACI PRC-332.1-18: Guide to Residential Concrete Construction, [https://www.concrete.org/store/productdetail.aspx?ItemID=332118&Language=English&Units=US\\_AND\\_METRIC](https://www.concrete.org/store/productdetail.aspx?ItemID=332118&Language=English&Units=US_AND_METRIC)

### Planning

- Thickness – 4 inches generally adequate, unless heavy trucks park on it regularly
- Base – firm, sound sub-soil, uniform and properly drained, granular base uniform and compacted
- Reinforcement – rebar (on chairs) and/or fiber reinforcement (more common), wire mesh highly discouraged
- Drainage – slope minimum of 1/8 inch per foot, ¼ inch per foot is preferred

### Preparation

- No organic matter (leaves, tree roots, wood, etc.)
- Compact sub-soil uniform and even
- Stake forms securely, scrape base from edge of forms to create full depth slabs at the edges
- Isolation joints where new flatwork will contact existing buildings, steps, slabs, walls, etc.
- Moisten forms and sub-grade before concrete placement (not muddy)

### Placing

- Addition of water on jobsite is discouraged – causes lower strength and possible surface defects
- Hot weather or cold weather precautions taken if needed
- Place concrete as close to the final position as possible, avoid over dragging or raking
- Screed to level the concrete, the less the surface is worked, the better
  - Avoid letting the surface “dry-out” from wind, sun, low humidity
- During the final finish, less is more, never work water into the surface
  - Do not use steel trowels/fresnos/pans, on exterior concrete slabs
  - Consider new polymer style trowels & tools, that won’t seal the surface like steel will!
- Control joints may be hand tooled or sawed, to a depth of 1/3<sup>rd</sup> the thickness of the slab

### Curing and Sealing

- Cure immediately after finishing is completed
- Wait 28 days post-placement to apply a sealer (unless an integral sealer is used)
- Types of Sealers:
  - Admixture Sealers, mixed in the concrete at the ready-mix plant
  - Topical Sealers (Acrylic), sit on the surface, reapply as needed (homeowner education)
  - Penetrating Sealers (Silanes/Siloxanes, etc.), sit sub-surface, reapply as needed (5 - 7 years)

### Deicers

- Avoid deicers the 1st winter for the pavement → Use sand instead
- Avoid harsh types:
  - Magnesium, Potassium, Ammonium products
  - "Super salts" (blended salts)
- If deicers are used, broom off excess after the weather event
- Alternative to deicers:
  - Sand (broom off after the weather event has passed)
  - Radiant heating system

### Other Tips for Durable Concrete

- Wait at least 7 days to drive on your new driveway
- Protect it from drain water (can cause settlement if it undermines the slab)
- Keep dumpsters and heavy truck loads off your driveway, place dumpsters in your yard or grass (they are less costly to replace)
- Prepare owners expectations in reference to maintenance expectations, resealing, deicers, etc.

The Concrete Promotional Group, Inc. - [www.concretepromotion.com](http://www.concretepromotion.com) - 913-341-5800

Disclaimer: The information contained in this document is intended for general guidance and educational purposes only. It does not constitute professional engineering, legal, or construction advice. While every effort has been made to ensure the accuracy of the content, CPG makes no warranties, express or implied, regarding the completeness, reliability, or applicability of the information provided. Users are encouraged to consult with qualified professionals for project-specific recommendations. CPG assumes no liability for the use or misuse of this information.