

Do you have an Approved/Qualified Products List for curing materials? Please include a link to your requirements and specifications:	
Alabama	Approval Requirements: http://www.dot.state.al.us/mtweb/Testing/MSDSAR/doc/pro/II30ProcedureforEvaluationandMaintenanceFebruary2010.pdf Specification: http://www.dot.state.al.us/conweb/doc/Specifications/2012%20GASP%20Summary/12-0356.pdf Spec Book (for additional language, not covered in 12-0356): http://www.dot.state.al.us/conweb/doc/Specifications/2012%20DRAFT%20Standard%20Specs.pdf
Colorado	https://www.codot.gov/business/designsupport/construction-specifications/2011-Specs/standard-special-provisions/sections-200-500-revisions/412lmfc/view
Florida	http://www.dot.state.fl.us/specificationsoffice/Implemented/SpecBooks/July2015/Files/925-715.pdf
Idaho	Standard Specifications http://itd.idaho.gov/manuals/Manual%20Production/SpecBook/SpecHome.htm Quality Assurance Manual http://itd.idaho.gov/manuals/Manual%20Production/QA/QAHome.htm
Illinois	Membrane curing compounds are tested per batch/lot; thus, are not provided an approved list. Explanation for understanding approved batch/lot numbers can be found here: http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Manuals-Guides-&-Handbooks/Highways/Materials/Concrete/curing%20compound%20batch%20lot.pdf
Indiana	The list of three Evaporation Retarders is presented in the unique special provision for high performance concrete bridge decks as a list. Burlap Cloth is presented in 912.01(a), Waterproof Paper Blankets is presented in 912.01(b), White Polyethylene Sheeting, Film is presented in 912.01(c), White Burlap Polyethylene Sheet is presented in 912.01(d), Liquid Membrane Forming Compounds is presented in 912.01(e), and Polyethylene Film is presented in 912.01(f). See link below. Curing-Sealing materials is presented in 912.02, see link below. http://www.in.gov/dot/div/contracts/standards/book/sep13/9-2014.pdf
Iowa	http://www.iowadot.gov/erl/current/GS/content/4105.htm
Kansas	Liquid Membrane Forming Compounds: http://www.ksdot.org/Assets/wwwksdotorg/bureaus/burConsMain/specprov/2015/1404.pdf Precure/Finishing Aid (Evaporation Retarder): http://www.ksdot.org/Assets/wwwksdotorg/bureaus/burConsMain/specprov/2015/1403.pdf
Minnesota	http://www.mrrapps.dot.state.mn.us/CuringCompoundProducts/curingcompounds.aspx http://www.dot.state.mn.us/products/concrete/pdf/curing_compound_specifications_3753_3754_3755.pdf http://www.dot.state.mn.us/products/concrete/pdf/curing_compound_approval_and_test_methods2.pdf
Missouri	http://www.modot.org/business/standards_and_specs/Sec1055.pdf
Nebraska	SECTION 1012 -- LIQUID MEMBRANE-FORMING COMPOUNDS FOR CURING CONCRETE 1012.01 -- Description Liquid membrane-forming compounds are intended for application to concrete surfaces to reduce the loss of water during the early-hardening period. White-pigmented compounds serve the additional purpose of reducing the temperature rise in concrete exposed to radiation from the sun. 1012.02 -- Material Characteristics Liquid membrane-forming compounds shall conform to the requirements of AASHTO M 148, Type 2. 1012.03 - Acceptance Requirements 1. All curing compounds to be approved must be from the current calendar year with no carry-over from the previous years. 2. Approved compounds are on the NDR Approved Products List. 3. Products not on the NDR Approved Products List shall be sampled and tested in accordance with requirements of the NDR Materials Sampling Guide
North Carolina	NCDOT Specifications, SECTION 1026 Curing Agents for Concrete
Ohio	http://www.dot.state.oh.us/Divisions/ConstructionMgt/OnlineDocs/Specifications/2013CMS/2013_CMS_11142012_FINAL.PDF See Item 705 page 728 for information regarding curing blankets/ curing compounds. We require bulap curing blankets to meet AASHTO M182, Class 2 We require plastic curing blankets to meet AASHTO M171
Pennsylvania	See above for specifications.....question 1.

Do you have an Approved/Qualified Products List for curing materials? Please include a link to your requirements and specifications:	
Rhode Island	http://www.dot.ri.gov/business/bluebook.php -Curing Materials Specifications-Subsection M.02.04 http://www.dot.ri.gov/business/approved_materials.php -Approved Materials List-Concrete-Curing Materials
South Dakota	Approved product list: http://apps.sd.gov/HC60ApprovedProducts/Main.aspx
Tennessee	Curing Compound QPL 12B is found at the following link below: http://www.tdot.state.tn.us/materials/reseval/docs/QualifiedProductsProcedures.pdf TDOT Standard Specification 913.05 Liquid Membrane-Forming Compounds is found at the following link below: http://www.tdot.state.tn.us/construction/2015_Spec_Book/TDOT_2015_Spec_Book_FINAL%20pdf.pdf
Utah	http://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:3694, 03390 Concrete Curing
Wisconsin	http://roadwaystandards.dot.wi.gov/standards/stdspec/ss-04-00.pdf http://roadwaystandards.dot.wi.gov/standards/stdspec/ss-05-00.pdf
Form removal for concrete pavement and flatwork: Do you require a minimum time forms must remain in place? Do you require application of membrane curing compound after form removal?	
Alabama	(o) REMOVAL OF FORMS. Forms shall not be removed from freshly placed concrete until it has set for at least 12 hours, except auxiliary forms used temporarily in widened areas. They shall be removed carefully so as to avoid damage to the pavement. After the forms have been removed, the ends of all joints shall be cleaned, after which the sides of the slab shall be covered with earth or other approved curing agent.
Colorado	We have eliminated minimum curing time in favor of minimal strength for form and falsework removal. Strength is measured via field cured cylinders or maturity meters.
Idaho	Time varies by bridge element
Illinois	For most cast-in-place items, forms shall remain in place for at least 24 hours. Curing (regardless of method) shall be resumed within 2 hours of form removal (if done during the specified curing period).
Illinois Tollway	Membrane curing compound is only required if forms are removed during the specified curing period.
Indiana	Forms may be removed as soon as the PCCP has hardened sufficiently to prevent edge spalling of other damage. Immediately after the forms are removed the sides of the PCCP shall be cured (e.g. apply curing compound).
Iowa	Curing compound required if forms removed before opening strength is achieved.
Kansas	Forms are required to be in place for a minimum of 12 hours followed by application of a Type 2 White Liquid Membrane-Forming Compound.
Louisiana	Forms must remain in place until 3000 psi compressive strength has been reached.
Michigan	Depends if forms are removed prior to minimum strength and 5 or 7 day cure period, depending on the application. If removing forms early, curing compound or wet cure of surface is required for remainder of cure period, depending application.
Minnesota	12 hours minimum for fixed form placement - immediately after removing forms apply membrane curing compound.
Missouri	For hand pours, forms are typically removed the next day unless the concrete is not gaining strength normally. Curing compound is to applied to the sides of the pavement to facilitate hydration. Curing compound would have been placed on the surface immediately after textured.
Montana	Remove forms at 80% design strength. If before 7 days, apply curing compound.
Nebraska	If the forms are stripped in less than 72 hours, then the edges shall be cured with a curing compound. If greater than 72 hours, then curing compound is not required.
Nevada	only when forms are removed immediately after placement
North Carolina	700-10 REMOVING FORMS Do not remove forms from freshly placed concrete for at least 12 hours after placement and until the concrete has hardened sufficiently to resist spalling, cracking or any other damage. Repair any honeycombed areas along the sides or edges of the slab by filling with mortar immediately after the forms have been removed. Use mortar consisting of one part cement to 2 parts fine aggregate.
Pennsylvania	Section 501 of Pub 408 - Removal of Forms. Do not remove forms from freshly placed concrete until it has set. Remove the forms carefully to avoid pavement damage.
Rhode Island	5 days minimum
South Dakota	12 hour to remove side forms. If forms are removed within the 72 hour cure period then the formed sides must be cured.
Texas	If forms are removed prior to 72 hrs then curing compound is applied.

Form removal for concrete pavement and flatwork: Do you require a minimum time forms must remain in place? Do you require application of membrane curing compound after form removal?	
Tennessee	<p>501.19 Removing Forms[] The Contractor may remove forms once removal will not cause damage to the slab edges. Remove the forms carefully to avoid damaging the pavement. After the forms have been removed, cure the sides of the slab using one of the methods specified in 501.18. The Engineer will consider honeycombed areas to be defective work. Remove and replace all unsound material with satisfactory material at no cost to the Department.[]</p> <p>501.18 Curing[] Immediately after completing the finishing operations and as soon as marring of the concrete will not occur, cover and cure the entire surface of the newly placed concrete. [] Where curing requires the use of water, ensure that sufficient water is available. Failure to provide a sufficient quantity of one of the curing materials specified in 913, or lack of water for wet-curing methods, shall be cause for immediate suspension of concreting operations. Do not leave the concrete exposed for more than 30 minutes between stages of curing or during the curing period. [] Perform curing according to one of the following methods:[] A. Cotton or Burlap Mats[] B. Waterporrof Paper[] C. Impervious Membrane Method[] D. White Polyethylene Sheeting[] E. Curing in Cold Weather</p>
Utah	<p>Forms in place requirement depends on the product/application.[] Curing membrane is typically required after form removal.</p>
Washington	Forms must stay in place a minimum of 12 hours after concrete placement. Curing compound must be applied after removal of forms.
Form removal for bridge substructure, superstructure, retaining walls: Do you require a minimum time forms must remain in place? Do you require application of membrane curing compound after form removal?	
Alabama	Form removal is dependent upon concrete set time
Colorado	We have eliminated minimum curing time in favor of minimal strength for form and falsework removal. Strength is measured via field cured cylinders or maturity meters.
Florida	Forms are to be left in place until a minimum compressive strength of 4,000 psi has been reached. When forms are removed curing compound is applied.
Illinois	<p>Self-supporting substructure items and superstructure (except parapets, railings, curb, sidewalk, and median not placed monolithically with the deck) are required to have achieved a minimum strength, as well as completed the specified curing period, prior to form removal.[] []Curing (regardless of method) shall be resumed within 2 hours of form removal (if done during the specified curing period).</p>
Illinois Tollway	Membrane curing compound is only required if forms are removed during the specified curing period.
Indiana	<p>The forms for any portion of the structure shall not be removed until the concrete is strong enough to withstand damage. If field operations are not controlled by beams or cylinder tests the standard specification requires that the forms stay in place for a minimum period of time, exclusive of days when the ambient temperature is below 40 deg F (i.e. centering under beams 15 days, slabs 7 days, walls columns, sides of beams and all other parts 12 hours). If high-early strength cement is used the periods may be reduced. If fly ash or ggbfs is used in the structural concrete or if a Type IP or IP-A cement is used the form removal shall be governed by test beams (i.e. girders, arches and similar units 390 psi flexural strength; interior bent or pier caps 480 psi flexural strength).[] []In order to obtain a satisfactory surface finish, forms for railings, parapets and exposed vertical surfaces shall be removed no less than 12 hours and no more than 48 hours after the concrete is placed, depending on weather conditions.[] []A protective covering is needed after form removal .Application of a curing compound is not required and in some cases would not be allowed if the structural element is to receive a surface treatment (e.g. concrete sealer).</p>
Kansas	The minimum cure time is 4 days for "formed sides and ends of bridge wearing surfaces, bridge curbs and other formed surfaces." If the forms are removed before the end of the 4-day cure period (done with Engineer's permission), cure the surface with an application of Type 1D liquid membrane forming compound.
Louisiana	Forms must remain in place until 3000 psi compressive strength has been reached. Concrete must then be subjected to continuous wet burlap on all surfaces until 10-14 days have elapsed from the placement of the concrete. If a class II finish is to be applied, no curing compound is required.

Form removal for bridge substructure, superstructure, retaining walls: Do you require a minimum time forms must remain in place? Do you require application of membrane curing compound after form removal?	
Michigan	Cure surfaces by keeping them continuously wet for 5 or 7 days, depending on application, and until the concrete attains 70 percent of the minimum 28-day compressive strength. Alternatively, if the forms are removed prior to the above, a waterproof device or membrane curing compound must be immediately applied.
Minnesota	72 hours substructure, 96 hours superstructure
Missouri	Form removal from under any structural concrete unit shall not be started until the concrete has attained at least the following strength (Section 703.3.2.13): Class B - 2,750 psi Class B-1 - 3,000 psi Class B-2 - 3,000 psi
Montana	Remove forms at 80% design strength. If before 7 days, apply curing compound. Deck is 14-day wet cure
Nebraska	The following is from the specifications for forms: Falsework or bracing supporting concrete structures and forms supporting concrete floor slabs on girder bridges shall remain in place until tests show that the concrete has attained a compressive strength of at least 2,000 psi (14 Mg). In the absence of such tests, the requirements in Table 704.02 shall govern the length of time the falsework shall remain in place, exclusive of the time during which the air temperature is below 40°F (4°C) and the concrete is not protected. Table 704.02 Minimum Formed Time Floor slabs..... 7 Days Walls..... 14 Days Columns 7 Days Box Culvert Slabs..... 7 Days Do you require application of membrane curing compound after form removal? No additional covering or curing is required after the forms are removed if they were in place for at least 72 hours.
Nevada	on how long forms are in place
North Carolina	Yes, see NCDOT Specs Section 420 Article: 15 CURING CONCRETE
Oklahoma	Leave forms in place for 7 days or until 80% of the required strength is obtained. If forms are removed before the 7 day limit apply curing compound at a rate of 1 gallon per 160 square feet.
Rhode Island	Typically forms may not be removed until concrete has reached 28-day strength as indicated by field cured cylinders. See Subsection 808.03.10 for additional details. http://www.dot.ri.gov/business/bluebook.php
South Dakota	SDDOT has a table for typical structural elements with associated concrete strength or time before form removal is allowed, and concrete strength is uses primarily. But if forms are removed before the end of the 7 day cure period for structural concrete then curing compound or wet cure is to be used for the remainder.
Tennessee	604.23 Curing Concrete Cure all concrete surfaces as specified below, except those surfaces protected by forms that remain in place 7 days or longer as specified in 604.19. Use curing materials that meet the requirements of 913. Begin curing on unformed surfaces immediately after the water sheen disappears and the surface finish is applied. On formed surfaces, begin curing immediately after removing forms.
Texas	At least 12hr from initial set. 4 days for mas concrete placements. Structural concrete require a 4 day cure. if forms are removed prior to 4 days, then other approved curing methods are applied.
Utah	Keep falsework and forms in place under slabs, beams, girders for 14 days after the last day of concrete placement. Use curing compound if forms are removed before 14 days if approved by the Engineer.
Washington	Curing compound or wet curing is required after form removal.
Wisconsin	If PCC has reached opening strength, then curing compound is not needed.