

NCC Spring 2026 State Reports on Trial Batching and Field Trial Placements

Friday, April 03, 2026

Disclaimer: AI (MS365 Co-pilot 😊) was used to help summarize a few of the state responses to the questions.



Survey questions make sense to the survey developer 😊

Responses are based on interpreting the meaning of the questions.

34

Total Responses

Date Created: Sunday, March 08, 2026

Complete Responses: 34

What does trial batching mean?

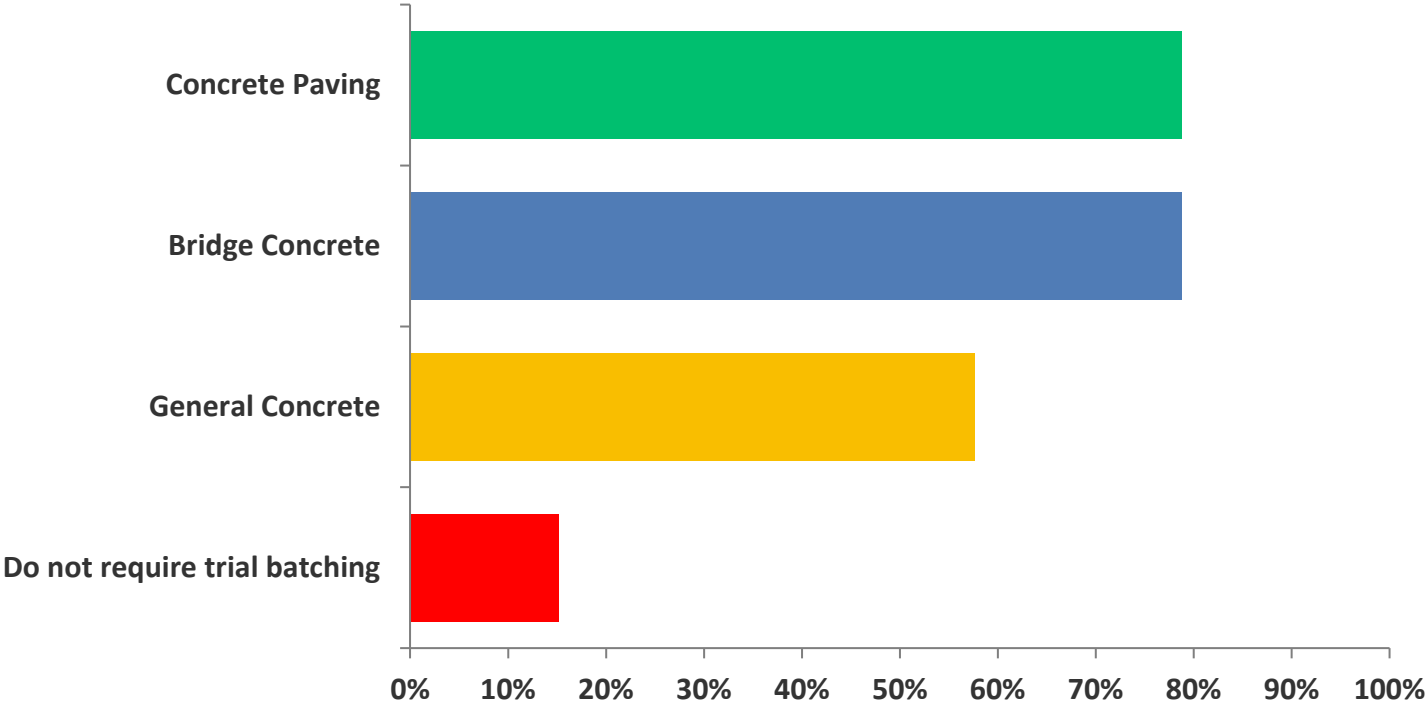
The intent was required batching during the mix design stage

Field trial placements?

Mock-ups, demonstrations pours, field trials

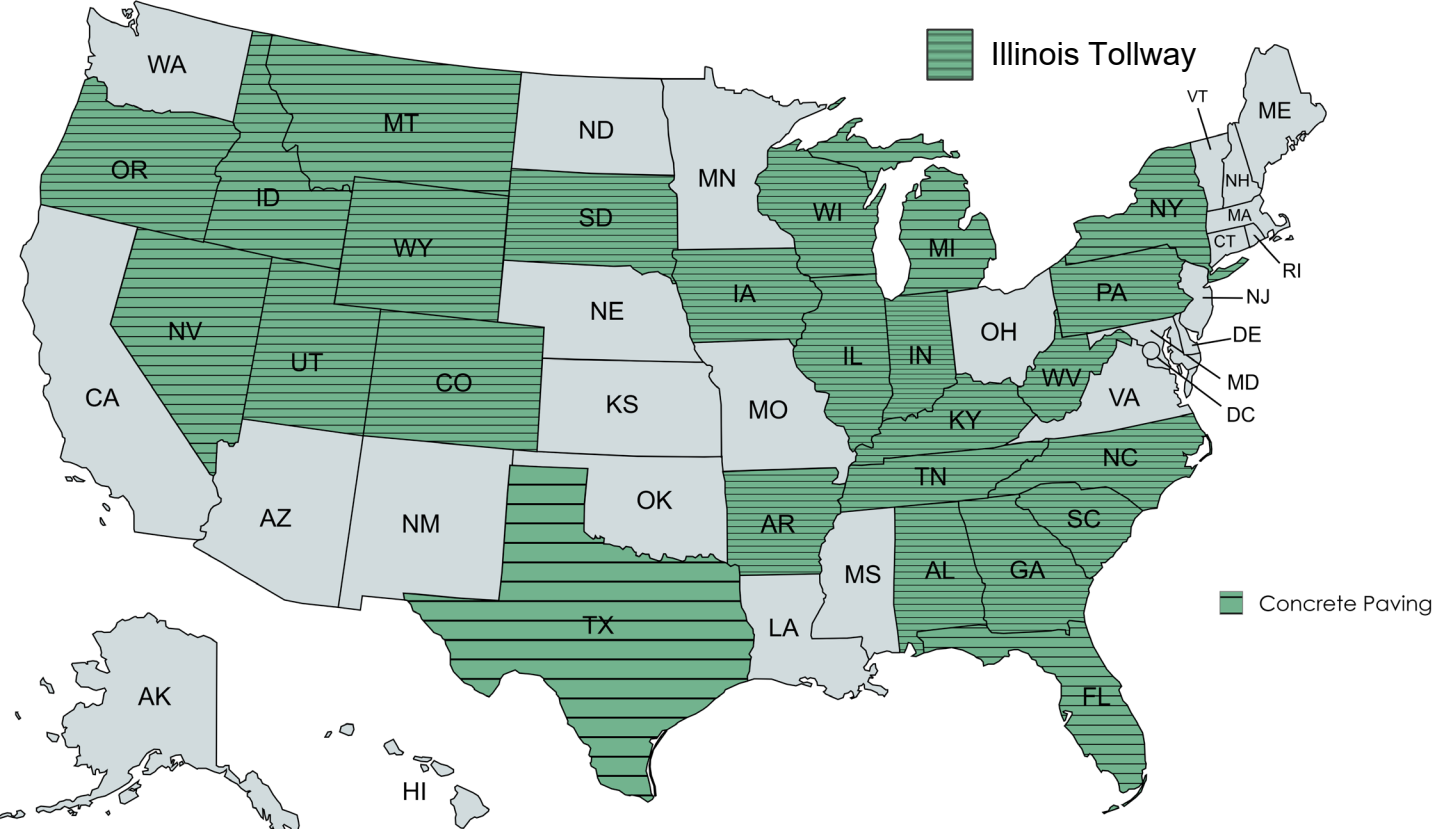
Q2: Does your Agency require trial batching? Check all that apply.

Answered: 33 Skipped: 1



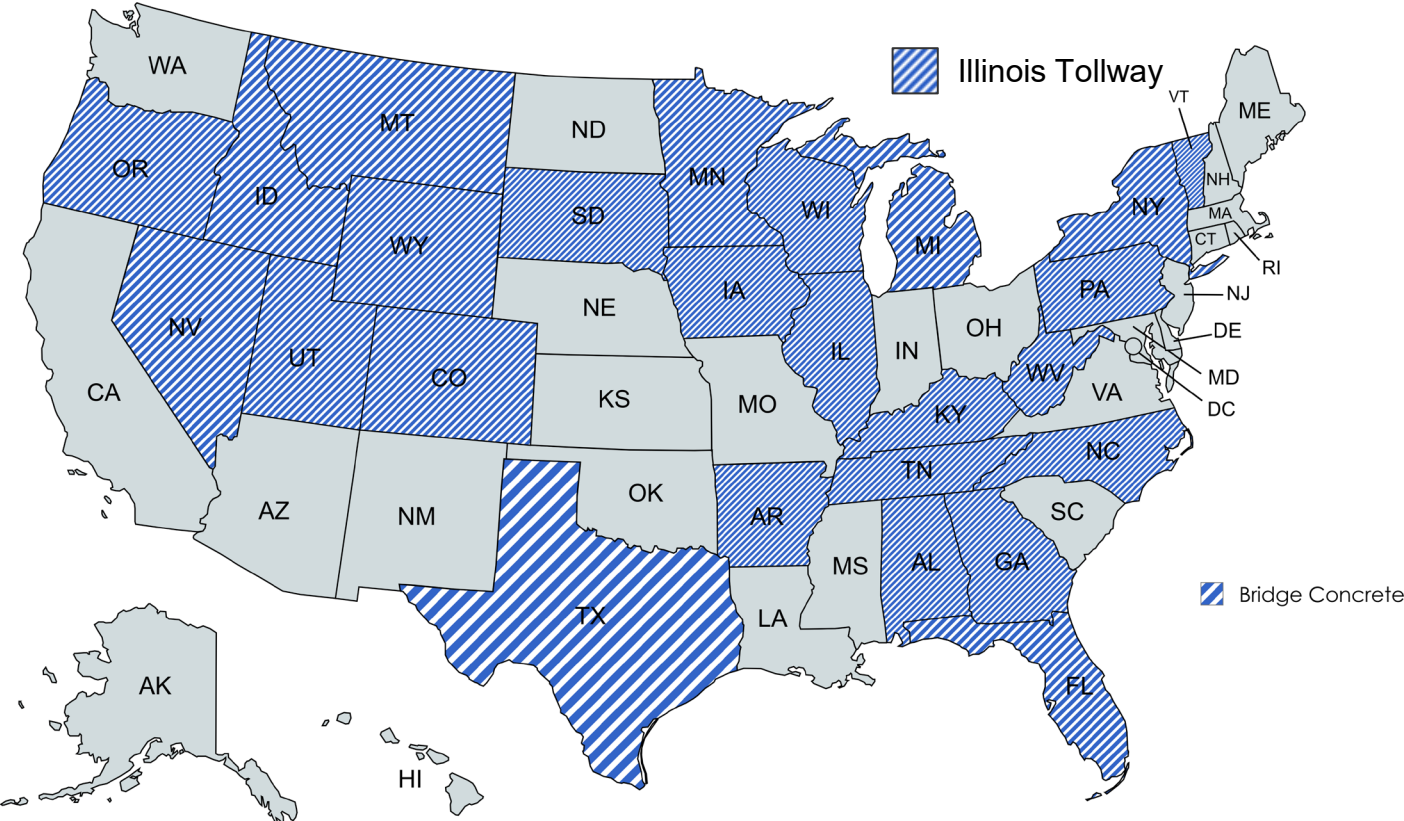
Q2: Does your Agency require trial batching for Concrete Paving?

Answered: 33 Skipped: 1



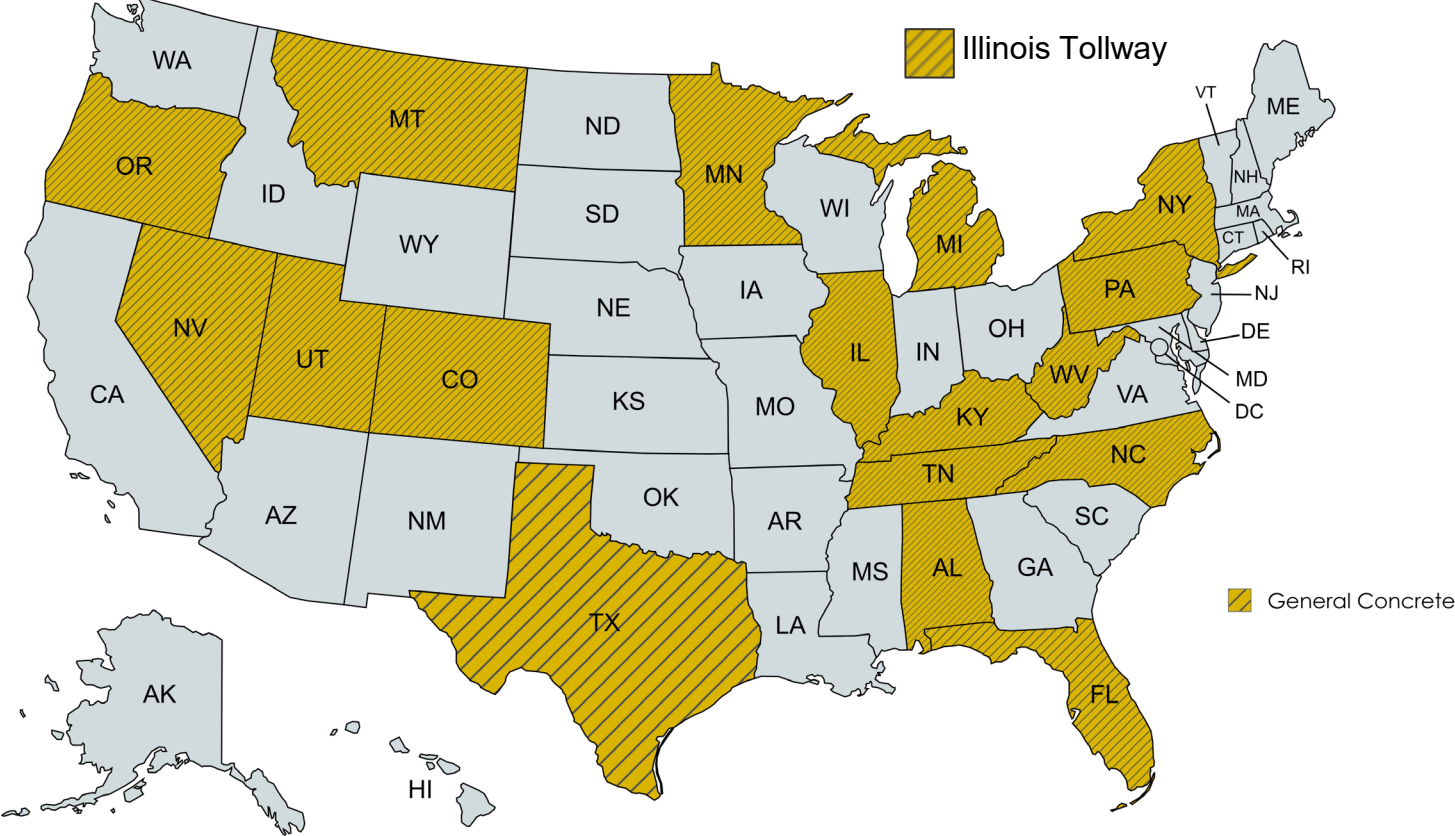
Q2: Does your Agency require trial batching for Bridge Concrete?

Answered: 33 Skipped: 1



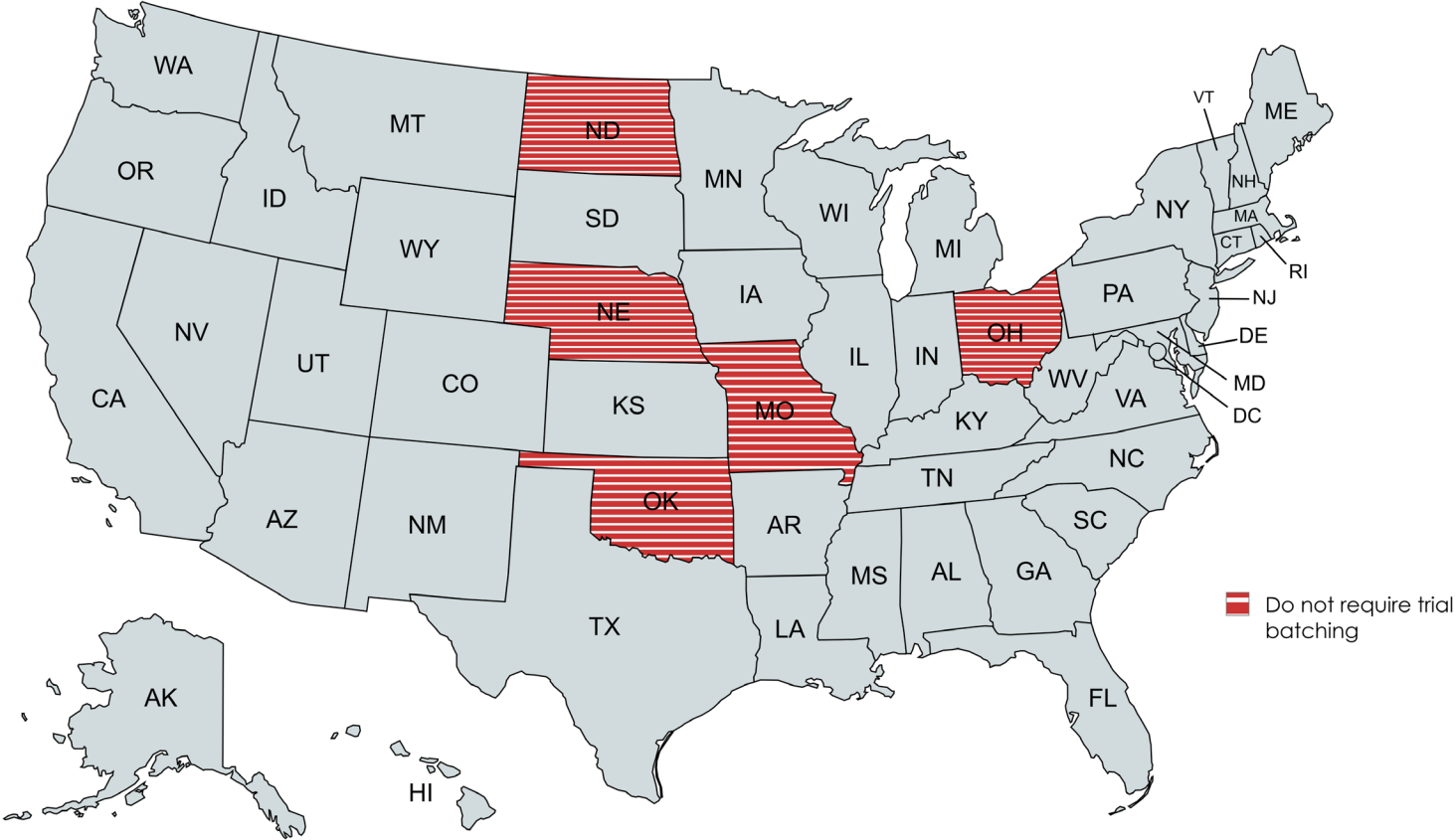
Q2: Does your Agency require trial batching for General Concrete

Answered: 33 Ski



Q2: Does your Agency require trial batching? Does not require trial batching

Answered: 33 Skipped: 1



Q2: Does your Agency require trial batching? Additional Comments

Answer	State	Comments
	Florida	Trial batching is required for new mix designs, however we allow exceptions for materials substitutions. In some cases we do require durability testing for mix designs that have high durability requirements.
	Georgia	Bridge concrete requires trial batching if it is classified as a specialty mix (not in GDOT specification book).
	Illinois	The majority of cast-in-place concrete mix designs are developed by producers/contractors and verified/approved by the Districts. For a new mix design to be verified by the District, a trial batch may be required: * When the District lacks experience or historical test data for the design parameters, gradations, or material sources to be used. * When there is concern the mix will not meet minimum strength (e.g., cold weather and SCMs). * When there is concern the mix will not provide adequate workability, consistency, and plasticity in the field (e.g., slump retention for drilled shafts).
	Illinois Tollway	The Illinois Tollway requires trial batching for Tollway specific mix classes, such as HP, TL, MC, AX, CAL, CSL. The Tollway utilizes IDOT approval for non-Tollway specific mixes such as PV, SI, DS, BS, etc.
	Iowa	Concrete paving only for PEM QMC mix with lower cement content Bridge Concrete - fibers and other never used materials

Q2: Does your Agency require trial batching? Additional Comments

Ansv	State	Comments
	Kansas	District Materials or Research can request a trial batch of any mix at any time. Lab mixes can also be performed.
	Michigan	Michigan requires a trial batch for all new concrete mix designs (JMFs) that are not a Department provided mix (some overlays, patches and special items). Trial batches are good for 2 years. The trial batches are also plant and mix design specific.
	Minnesota	HPC decks, Mass Concrete, SCC - trial batching is always required. General Concrete - trial batching to establish adequate strength if mix exceeds 15% fly ash replacement.
	Missouri	We may require trial batching for bridge deck concrete wearing surfaces involving silica fume concrete and latex modified high early strength concrete. When using a new type of concrete mixture, have required trial batching prior to placement. This would be addressed in a Job Special Provision (JSP).
	Montana	We require trial batching for all mix designs
	Nevada	Trial batch or in lieu of trial batch, ten consecutive tests results from a mix design previously approved by the Department and used on a local municipality or State project within the last 12 months

Q2: Does your Agency require trial batching? Additional Comments

Answer

State	Comments
North Carolina	Trial batches are required for all new concrete mix designs submitted for approval to verify that the mix meets the fresh and hardened concrete requirements. Once the mix design is approved, no further trial batching is required. For concrete installations where a volumetric mixer is used, a trial batch is made to both calibrate/verify the mixer and may also be used to verify the mix design. The verification is performed once per year or each time the mixer is relocated. There may also be project specific requirements for special installations that require batch testing.
Oklahoma	Generally no, any new concrete research requires trial batching.
Oregon	We approve mix designs based on either a trial batch or from field data.
South Carolina	We only require a trial batch for roller-compacted concrete pavement.
Vermont	It is in our High Performance Rapid Set spec to do a trial pour. We also require it on concrete that we are less familiar with. A most recent one was for UHPC deck overlay. We require a trial pour for drilled shaft SCC concrete to track air content and the flow over time. If there will be a long travel time, the producer needs to do trial pour to simulate the duration and confirm workability and air content.
Wisconsin	3 trial batches required for pavements, structures, and barriers per mix design.

Q3: If your Agency requires trial batching, who performs the trial batching? (Select Yes or No for each box)

Answered: 31 Skipped: 3



Across states, trial batching is performed primarily by the concrete producer/contractor, with additional involvement depending on agency requirements:

1. Most common performer: Contractor / Concrete Producer This is the dominant model. Nearly every state that requires trial batching allows or expects the producer to perform it.
2. Other performers (depending on state):
 - Independent Testing Companies - Frequently allowed, especially when producers lack lab capacity or when formal verification is needed.
 - Consultants / Third-Party Labs - Often used for specialty mixes, SCC, HPC, or when producers outsource testing.
 - State DOT laboratories or personnel - Some states do the batching themselves for certain concrete types (e.g., Wyoming for general concrete).
 - Others perform verification batches while contractors perform the initial batches.

Q3: If your Agency requires trial batching, who performs the trial batching? (Select Yes or No for each box)

Answered: 31 Skipped: 3



3. Mixed or shared responsibility models:

- States like Illinois, New York, Colorado, Florida, Kentucky, Pennsylvania allow combinations of:
- Contractor batching
- Consultant or independent lab batching
- State witnessing or verification testing

4. Notable exceptions:

- States that don't require trial batching at all (NE, ND, OH, OK except research) naturally have no defined performer.
- A few states restrict batching to state-qualified labs (e.g., UDOT).
- Some agencies require batching by certified technicians or labs with specific accreditations (AASHTO/CCRL).

Q3: If your Agency requires trial batching, who performs the trial batching for Concrete Paving?

Answered: 30 Skipped: 4

State	State	Contractor/ Producer	Consultant	Independent Testing Company	Trial Batching is not required
Alabama	No	Yes	No	Yes	No
Arkansas		Yes			
Colorado	No	Yes	No	No	No
Florida	No	Yes	No	Yes	No
Georgia		Yes			
Idaho		Yes			
Illinois	Yes	Yes	Yes	Yes	
Illinois Tollway		Yes		Yes	
Indiana	Yes	Yes	No	No	No
Iowa		Yes			
Kansas	Yes	Yes			

Q3: If your Agency requires trial batching, who performs the trial batching for Concrete Paving?

Answered: 30 Skipped: 4

State	State	Contractor/ Producer	Consultant	Independent Testing Company	Trial Batching is not required
Kentucky		Yes			
Michigan	No	Yes	No	No	No
Minnesota	No	No	No	No	Yes
Missouri	No	No	No	No	No
Montana	No	Yes	Yes	Yes	No
Nebraska					
Nevada	No	No	Yes	Yes	No
New York		Yes		Yes	
North Carolina	No	Yes	No	No	No
North Dakota					
Ohio					
Oklahoma		Yes			
Oregon		Yes	Yes	Yes	

Q3: If your Agency requires trial batching, who performs the trial batching for Concrete Paving?

Answered: 30 Skipped: 4

State	State	Contractor/ Producer	Consultant	Independent Testing Company	Trial Batching is not required
Pennsylvania		Yes			
South Carolina	No	Yes	No	No	
South Dakota	Yes	No	No	Yes	No
Tennessee	No	Yes	No	No	Yes
Texas	No	Yes	No	Yes	No
Utah	No	Yes	Yes	Yes	
Vermont	No	No	No	No	Yes
West Virginia		Yes		Yes	
Wisconsin		Yes			
Wyoming	No	Yes	Yes	No	

Q3: If your Agency requires trial batching, who performs the trial batching for Bridge Concrete?

Answered: 30 Skipped: 4

State	State	Contractor/ Producer	Consultant	Independent Testing Company	Trial Batching is not required
Alabama	No	Yes	No	Yes	No
Arkansas		Yes			
Colorado	No	Yes	No	No	No
Florida	No	Yes	No	Yes	No
Georgia		Yes			
Idaho		Yes			
Illinois	Yes	Yes	Yes	Yes	
Illinois Tollway		Yes		Yes	
Indiana	No	No	No	No	No
Iowa		Yes			
Kansas	Yes	Yes			

Q3: If your Agency requires trial batching, who performs the trial batching for Bridge Concrete?

Answered: 30 Skipped: 4

State	State	Contractor/ Producer	Consultant	Independent Testing Company	Trial Batching is not required
Kentucky		Yes			
Michigan	No	Yes	No	No	No
Minnesota	No	No	No	Yes	No
Missouri	No	No	No	No	No
Montana	No	Yes	Yes	Yes	No
Nebraska					
Nevada	No	No	Yes	Yes	No
New York		Yes		Yes	
North Carolina	No	Yes	No	No	No
North Dakota					
Ohio					
Oklahoma		Yes			
Oregon		Yes	Yes	Yes	

Q3: If your Agency requires trial batching, who performs the trial batching for Bridge Concrete?

Answered: 30 Skipped: 4

State	State	Contractor/ Producer	Consultant	Independent Testing Company	Trial Batching is not required
Pennsylvania		Yes			
South Carolina					Yes
South Dakota	No	No	No	Yes	No
Tennessee	No	Yes	No	No	Yes
Texas	No	Yes	No	Yes	No
Utah	No	Yes	Yes	Yes	
Vermont	No	Yes	No	No	No
West Virginia		Yes		Yes	
Wisconsin		Yes			
Wyoming	Yes	Yes	Yes	No	

Q3: If your Agency requires trial batching, who performs the trial batching for General Concrete?

Answered: 30 Skipped: 4

State	State	Contractor/ Producer	Consultant	Independent Testing Company	Trial Batching is not required
Alabama	No	Yes	No	Yes	No
Arkansas					Yes
Colorado	No	Yes	No	No	No
Florida	No	Yes	No	Yes	No
Georgia					Yes
Idaho					
Illinois	Yes	Yes	Yes	Yes	
Illinois Tollway		Yes		Yes	
Indiana	No	No	No	No	No
Iowa					No
Kansas	Yes	Yes			

Q3: If your Agency requires trial batching, who performs the trial batching for General Concrete?

Answered: 30 Skipped: 4

State	State	Contractor/ Producer	Consultant	Independent Testing Company	Trial Batching is not required
Kentucky		Yes			
Michigan	No	Yes	No	No	No
Minnesota	No	No	No	Yes	No
Missouri	No	No	No	No	No
Montana	No	Yes	Yes	Yes	No
Nebraska					
Nevada	No	No	Yes	Yes	No
New York		Yes		Yes	
North Carolina	No	Yes	No	No	No
North Dakota					
Ohio					
Oklahoma		Yes			
Oregon		Yes	Yes	Yes	

Q3: If your Agency requires trial batching, who performs the trial batching for General Concrete?

Answered: 30 Skipped: 4

State	State	Contractor/ Producer	Consultant	Independent Testing Company	Trial Batching is not required
Pennsylvania		Yes			
South Carolina					Yes
South Dakota	No	No	No	No	Yes
Tennessee	No	Yes	No	No	Yes
Texas	No	Yes	No	Yes	No
Utah	No	Yes	Yes	Yes	
Vermont	No	Yes	No	No	No
West Virginia		Yes		Yes	
Wisconsin					Yes
Wyoming	Yes	No	No	No	

Q3: If your Agency requires trial batching, who performs the trial batching? Comments

Answer

State	Comments
Florida	Trial batches may be done by the producer or a third-party lab.
Illinois	The trial batch shall be performed in the presence of the District or its designee, and the District or its designee will perform all tests. The Contractor has the option to perform their own tests.
Illinois Tollway	Trial batches are performed at the producer plant. Testing is performed by the producer or a laboratory representing the producer, and also by the laboratory representing the Tollway.
Michigan	Typically, the concrete producer does their own testing. Sometimes the concrete producer does hire a consultant or independent testing company to help them with testing.
Missouri	When trial batching is performed for silica fume concrete or latex modified high early concrete, it is performed by the contractor/concrete producer.
Montana	Typically its one or the other performing the trial batch. Either the contractor or consultant produces the trial batch depending on lab and personal certifications.
North Carolina	Generally, the producer performs the trial batching, but there may be occasions where a consultant or independent testing company conduct the mix design development and pass the information to the producer.

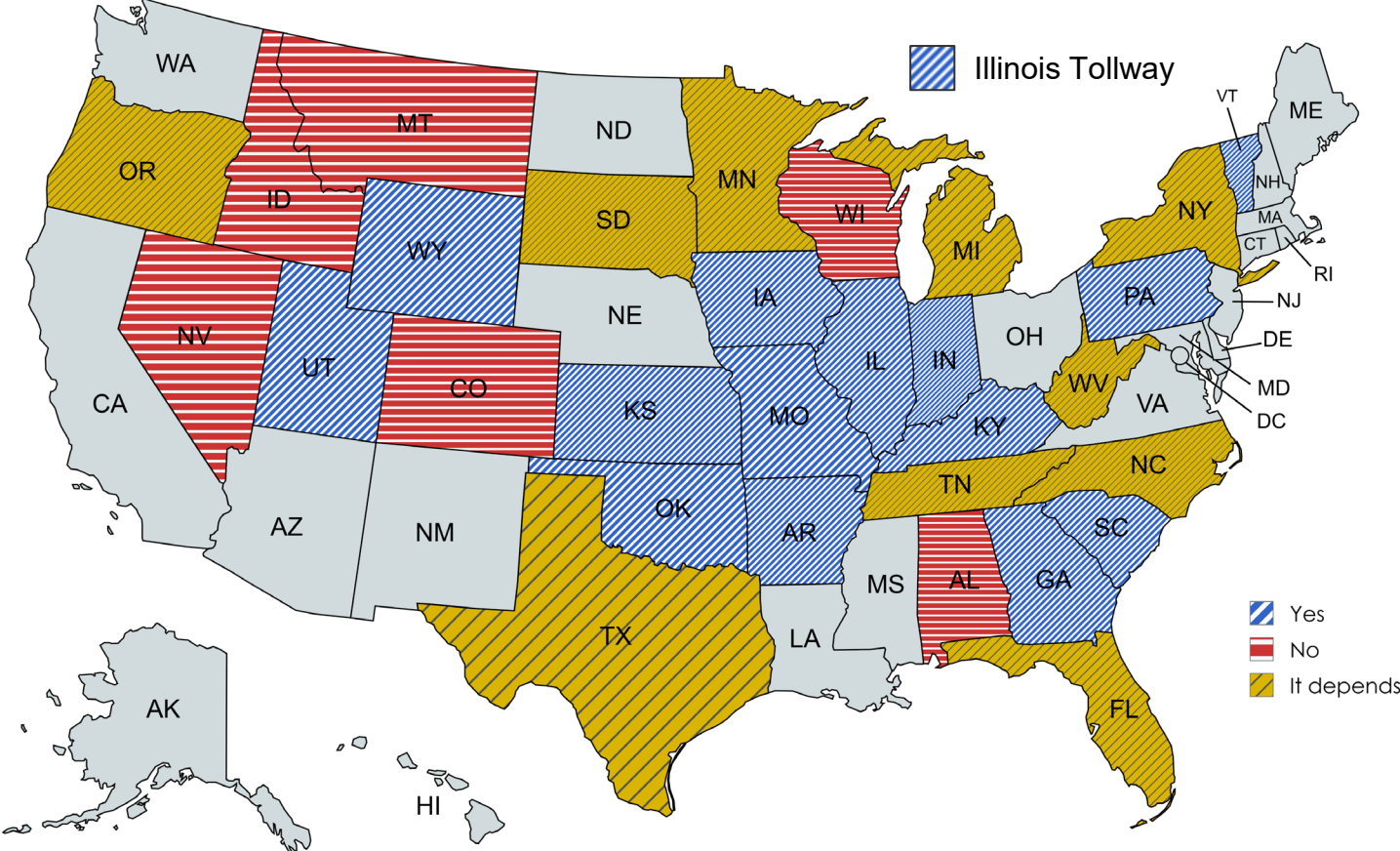
Q3: If your Agency requires trial batching, who performs the trial batching? Comments

Answered: 31 Skipped: 3

State	Comments
Oklahoma	In the event trial batching is required the Contractor/Concrete Producer performs trial batching.
Oregon	The only requirement we have for trial batching is that it is done by certified technicians. Most often it is the supplier doing the testing but in some cases they outsource to an independent lab or to their cement supplier's lab.
South Carolina	We only require a trial batch for roller-compacted concrete pavement.
Vermont	We currently do not do concrete pavement. One example for trial pour for general concrete is colored concrete. The trial pour is used to get a sample of the color and use as the standard to compare the production concrete to.
Wisconsin	Required for pavements, structures, and barriers. Contractor can hire a independent testing company if needed. No trial batching for other concrete applications like ancillary.

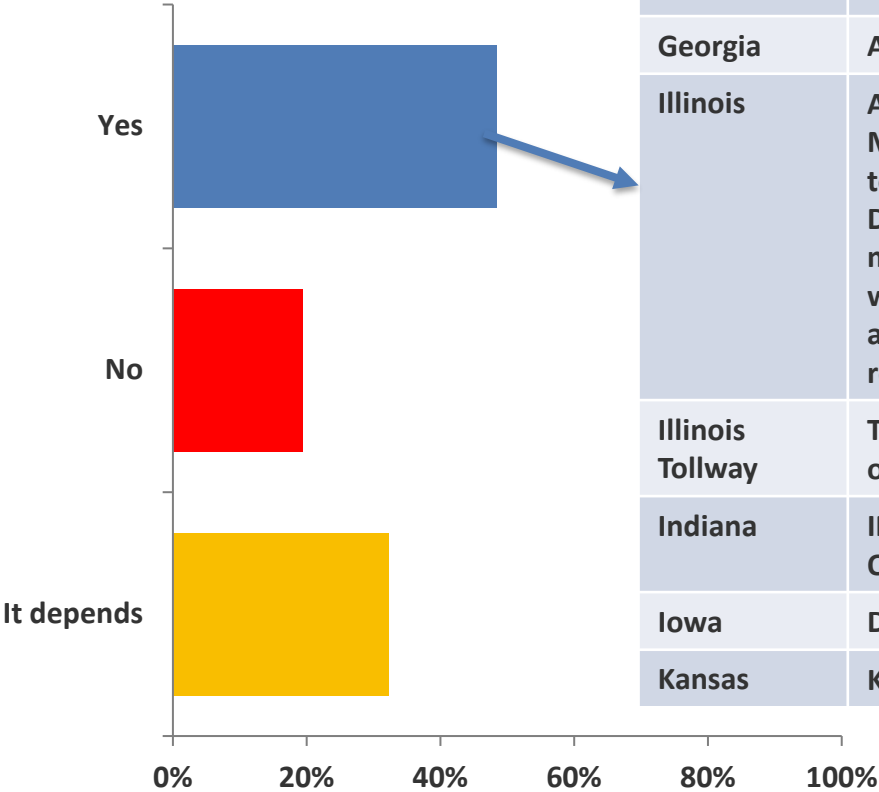
Q4: Does your Agency witness trial batching? If yes, who witnesses trial batching?

Answered: 31 Skip



Q4: Does your Agency witness trial batching? If yes, who witnesses trial batching?

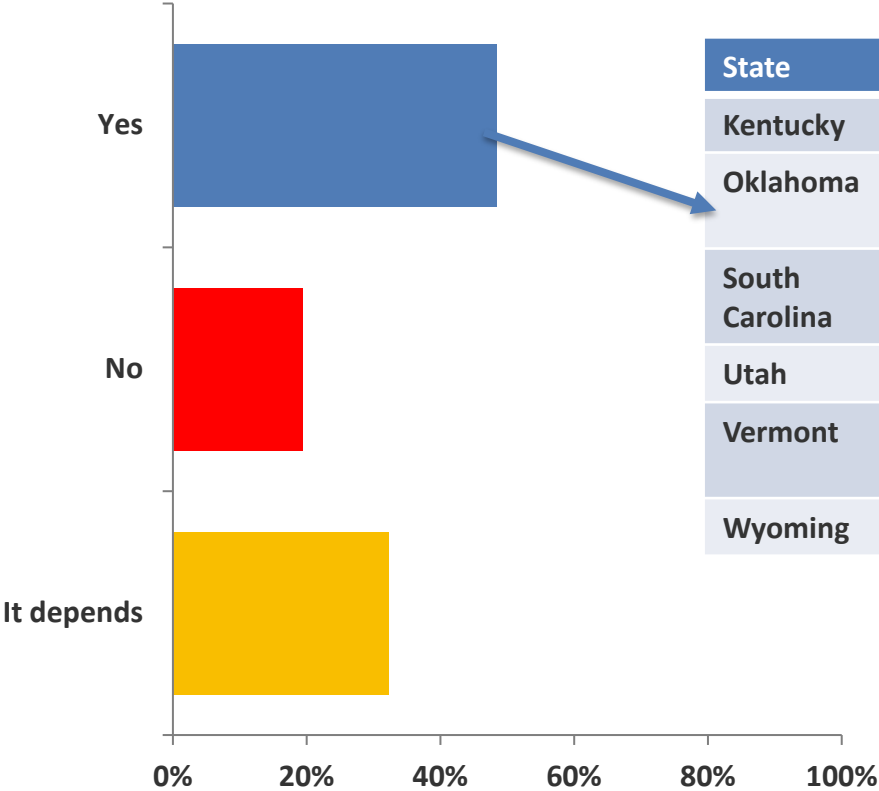
Answered: 31 Skipped: 3



State	Comment
Arkansas	Witnessed by Construction Inspector
Georgia	A technical services technician from GDOT / Concrete Branch.
Illinois	At a minimum, the District's PCC Supervisor (technician) and/or Mixtures Control Engineer will be present for and perform all State testing of a trial batch. Please note that a trial batch is initiated by the District. We encourage producers/contractors to 'pre-trial' their mixtures beforehand and further encourage them to notify the District when they plan to do so as a chance to observe the 'pre-trial' may alleviate any concerns the District might have that would cause it to require a trial batch.
Illinois Tollway	The agency witnesses field trial batches. Laboratory trials are not observed.
Indiana	INDOT contract personnel and INDOT district testing attend trials for QC/QA pavement and conduct testing.
Iowa	District Materials Engineer / District PC Tech
Kansas	KDOT

Q4: Does your Agency witness trial batching? If yes, who witnesses trial batching?

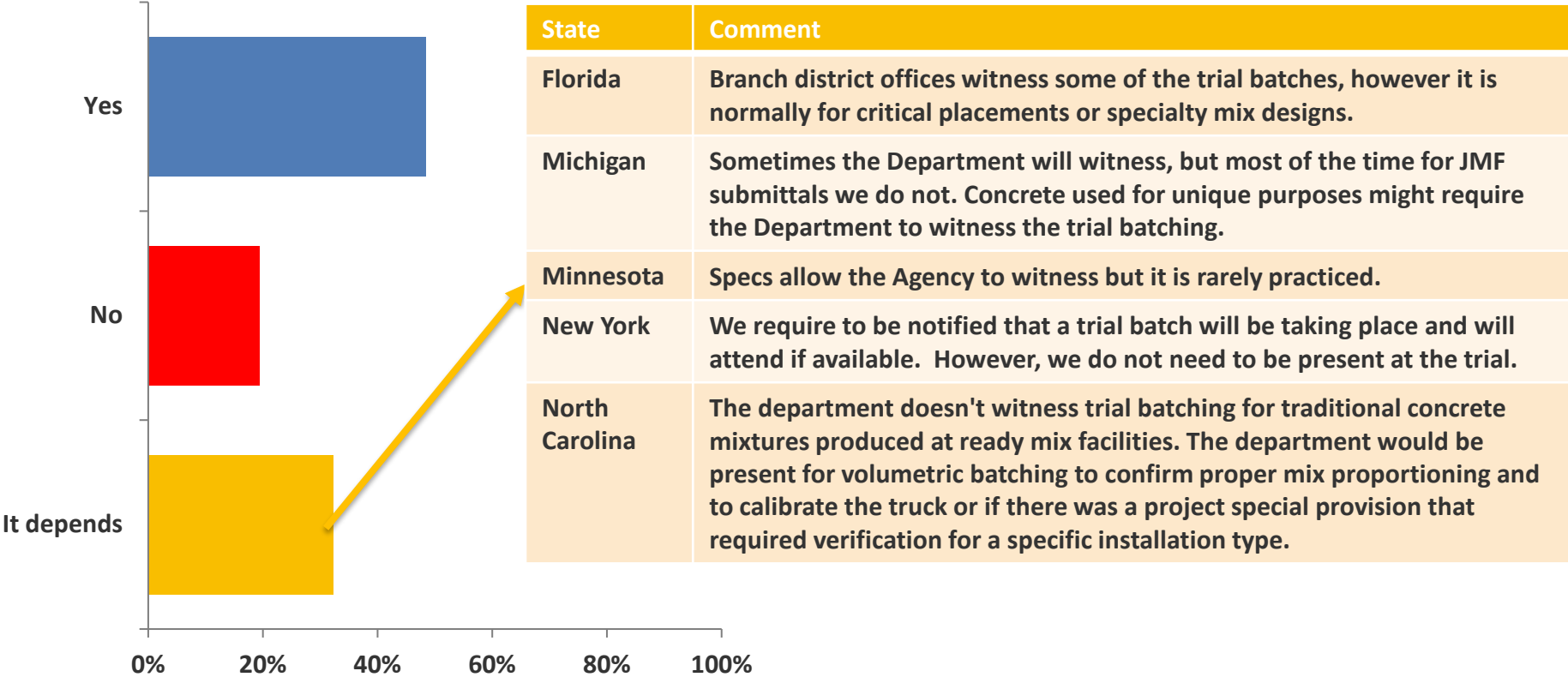
Answered: 31 Skipped: 3



State	Comment
Kentucky	KYTC Central Office Materials Laboratory Personnel.
Oklahoma	In the event trial batching is required the Resident Engineer/Consultant witnesses trial batching.
South Carolina	The trial batch is prepared in the presence of representatives of the SCDOT Office of Materials and Research.
Utah	UDOT technician
Vermont	The Resident Engineer and Concrete Engineer are typically the 2 specified to be there.
Wyoming	Field personnel witness trial batches.

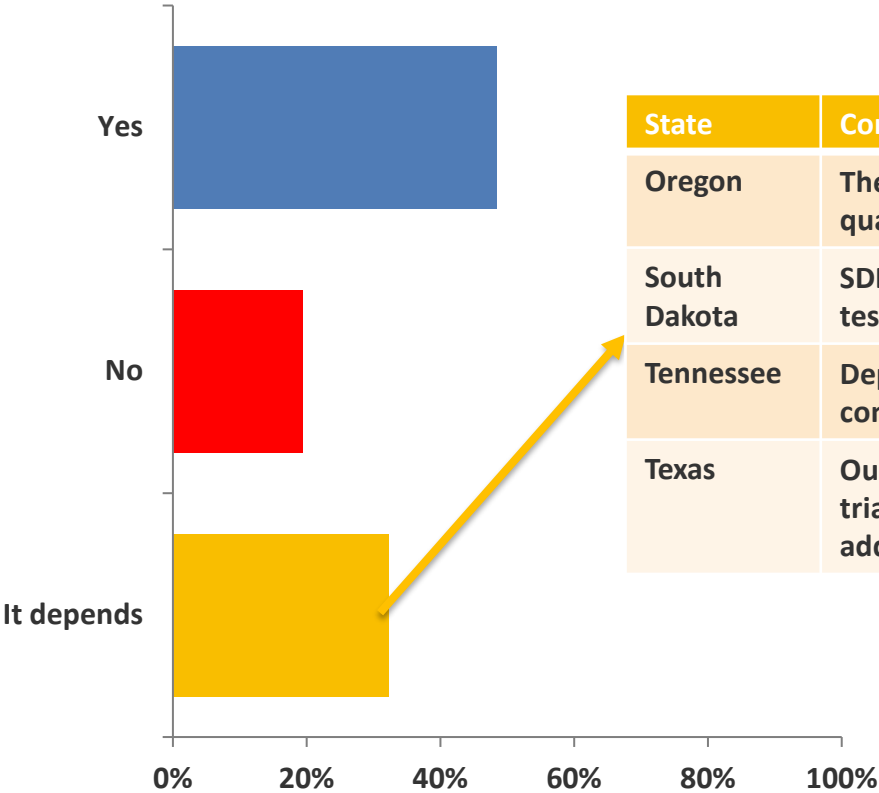
Q4: Does your Agency witness trial batching? If yes, who witnesses trial batching?

Answered: 31 Skipped: 3



Q4: Does your Agency witness trial batching? If yes, who witnesses trial batching?

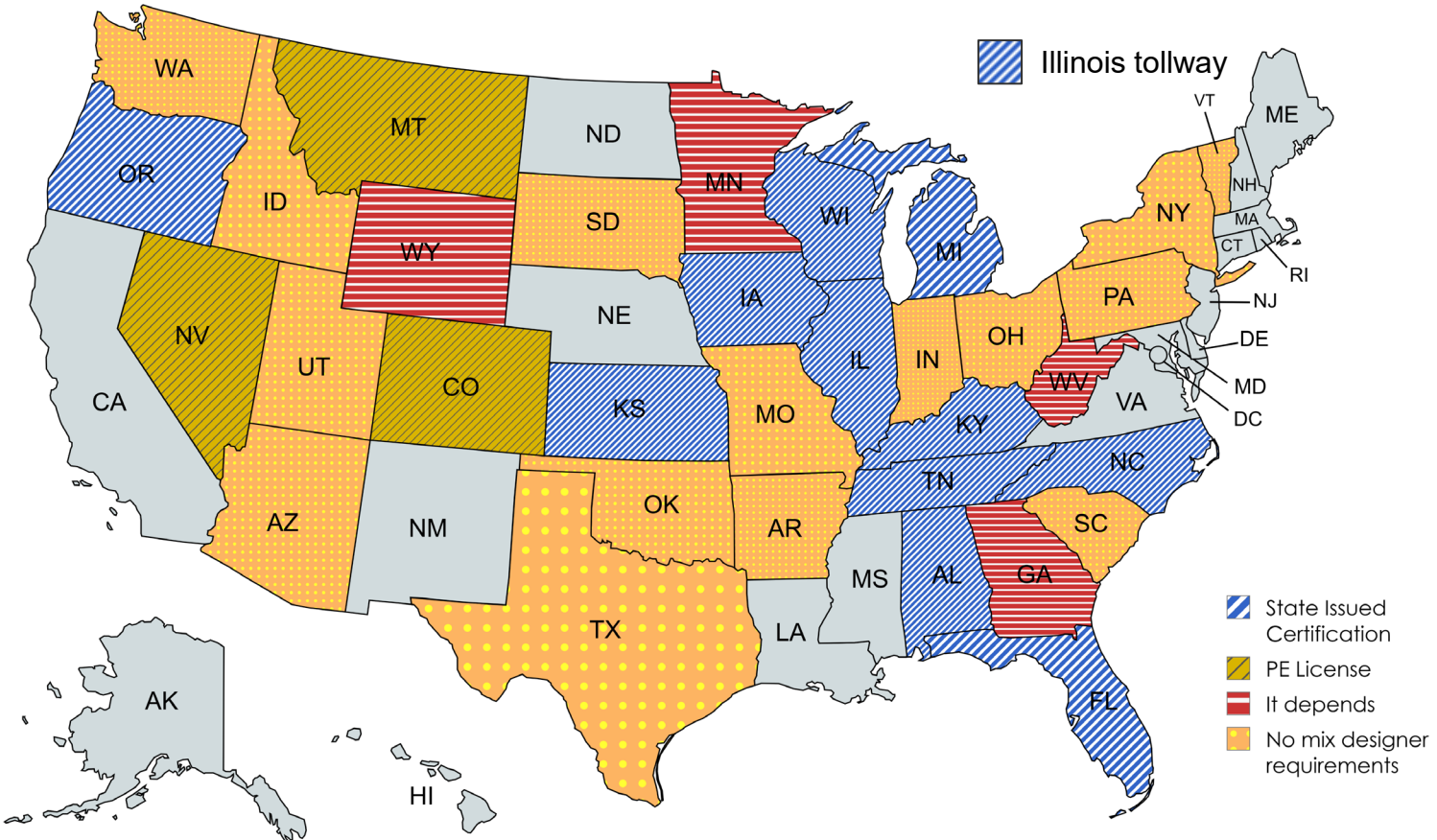
Answered: 31 Skipped: 3



State	Comment
Oregon	They are required to notify the Resident Engineers office and the material quality person may or may not attend based on schedule/importance.
South Dakota	SDDOT does witness occasional trial batching and at least one on new testing firms.
Tennessee	Departmental personnel can witness trial batching on any specialized concrete mixtures.
Texas	Our specification requires that the Engineer have the option to witness trial batching. If not provided this option, the Engineer may require additional trial batches before placement.

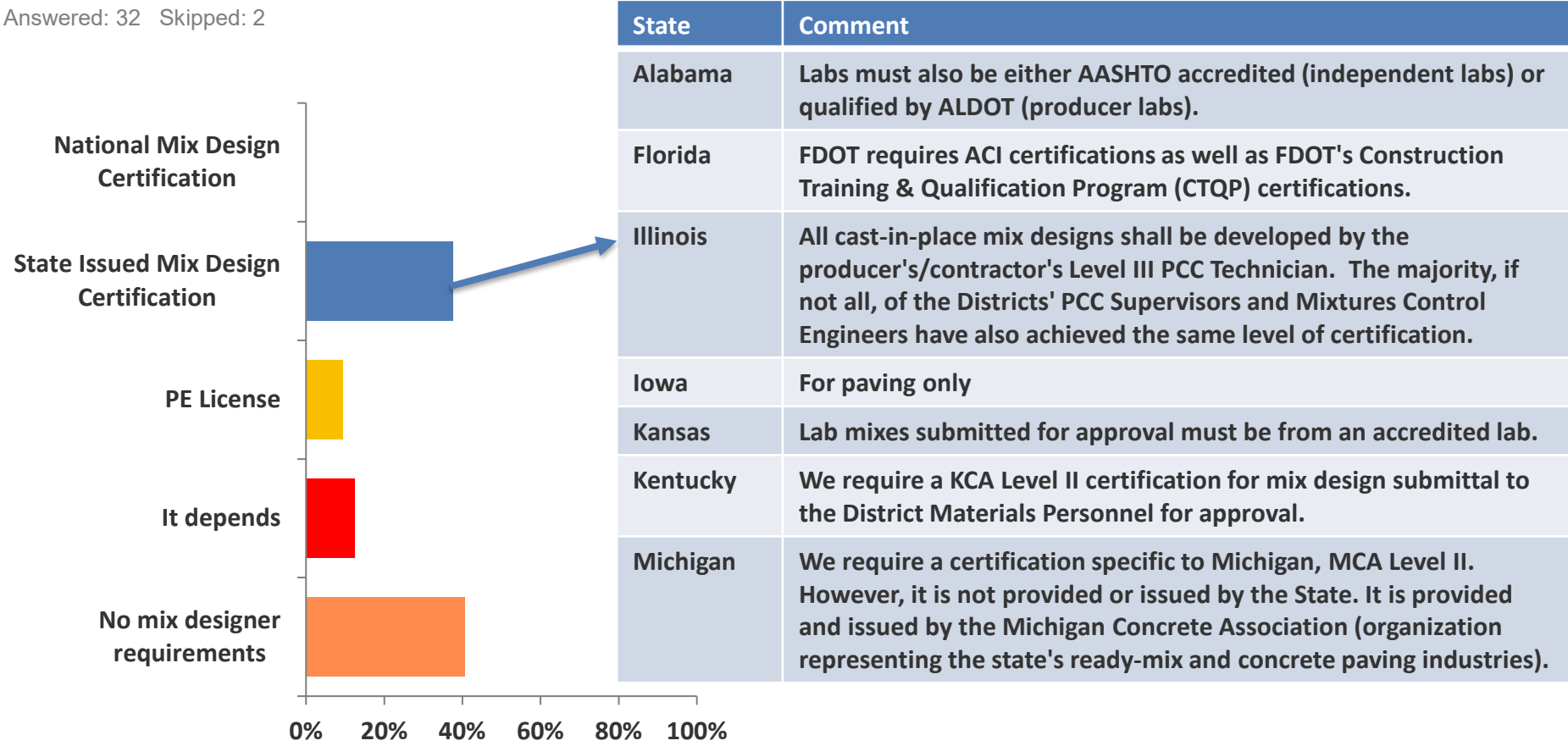
Q5: Does your Agency require a mix design certification or a professional engineer license to oversee trial batching/design concrete mixtures?

Answered: 32 Ski



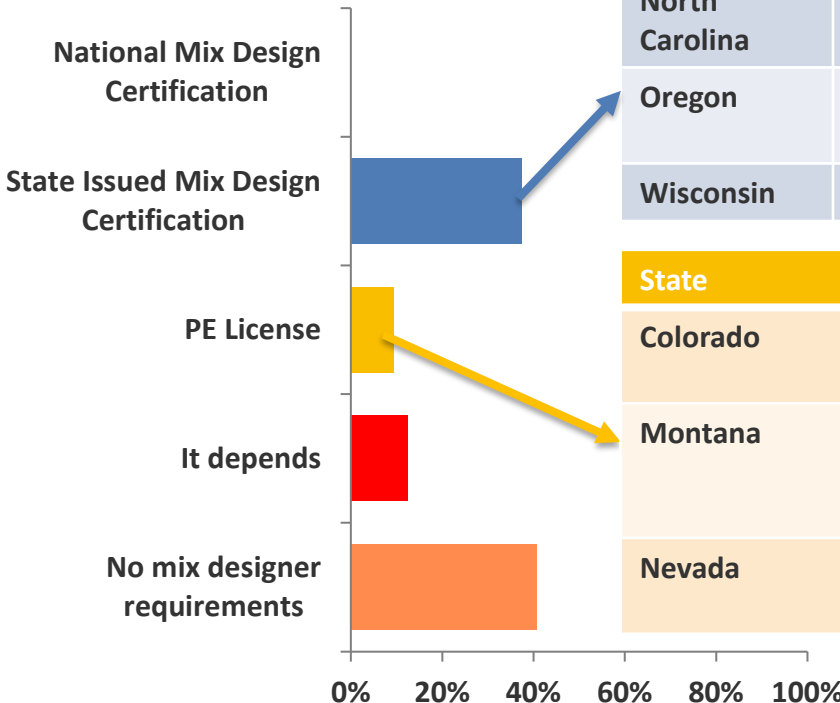
Q5: Does your Agency require a mix design certification or a professional engineer license to oversee trial batching/design concrete mixtures?

Answered: 32 Skipped: 2



Q5: Does your Agency require a mix design certification or a professional engineer license to oversee trial batching/design concrete mixtures?

Answered: 32 Skipped: 2

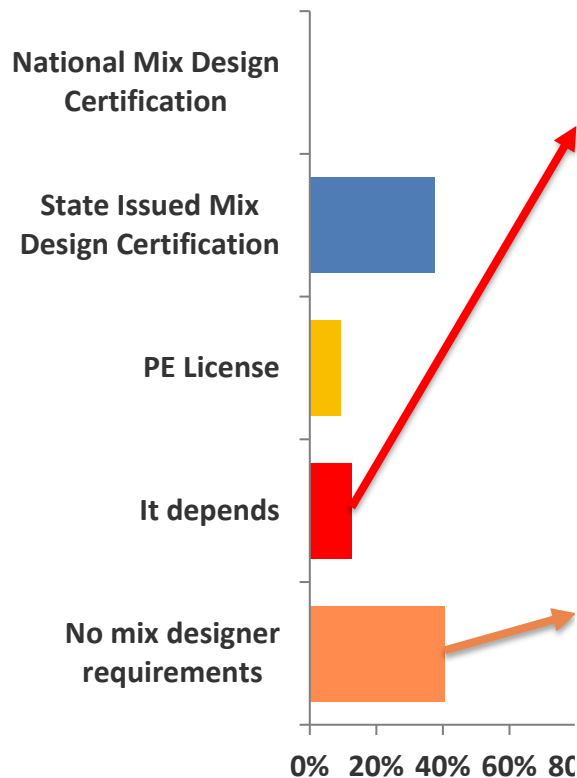


State	Comment
North Carolina	NCDOT requires individuals submitting mix designs for acceptance to have, at a minimum, a state issued certification or a PE license.
Oregon	We have our own certification class/exam called the Concrete Control Technician.
Wisconsin	State issued mix design certification is required for mix designers.

State	Comment
Colorado	All testing must be from an AASHTO Accredited Lab and stamped by a PE
Montana	All ready mix produced concrete requires a PE stamp for approval. Precast mix designs are submitted annually and do not require a PE stamp, however need to be an approved plant on our QPL.
Nevada	Mix designs must be stamped by a PE registered in the state of Nevada.

Q5: Does your Agency require a mix design certification or a professional engineer license to oversee trial batching/design concrete mixtures?

Answered: 32 Skipped: 2



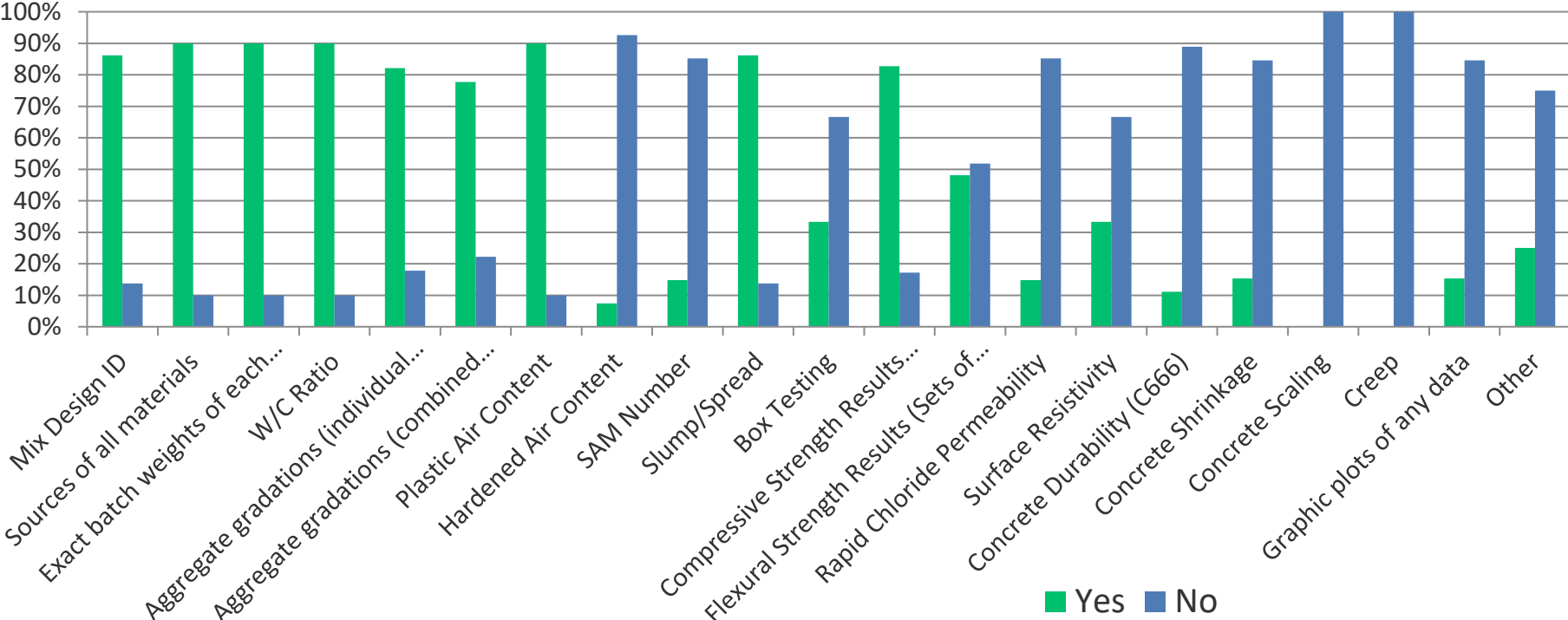
State	Comment
Georgia	Mass concrete mixes require a PE approval.
Minnesota	AASHTO accredited laboratory
West Virginia	All mix designs must be performed by a Division Approved AASHTO accredited laboratory; apart of those porgrams its a requirement that the person over seing the Labratory is a PE; in addition we require that anyone devloping a mix design is a PCC Technican. There are some cases where precast concrete mix designs can be accepted if they have been approved by another state with historic testing data.
Wyoming	Require laboratories performing mix design to be AASHTO/CCRL accredited.

State	Comment
Pennsylvania	PennDOT approved technician with ACI field testing certification at minimum.
Texas	Texas does not require a certification to design a concrete mixture. We have an internal certification for project staff responsible for reviewing mix designs to ensure our specification requirements are met.
Vermont	The producer is the one that designs the mix. The contractor needs to supply an ACI concrete field testing level I certified person to do wet testing.

Q6: What does your Agency require in a trial batch report for Concrete Paving?

Answered: 30 Skipped: 4

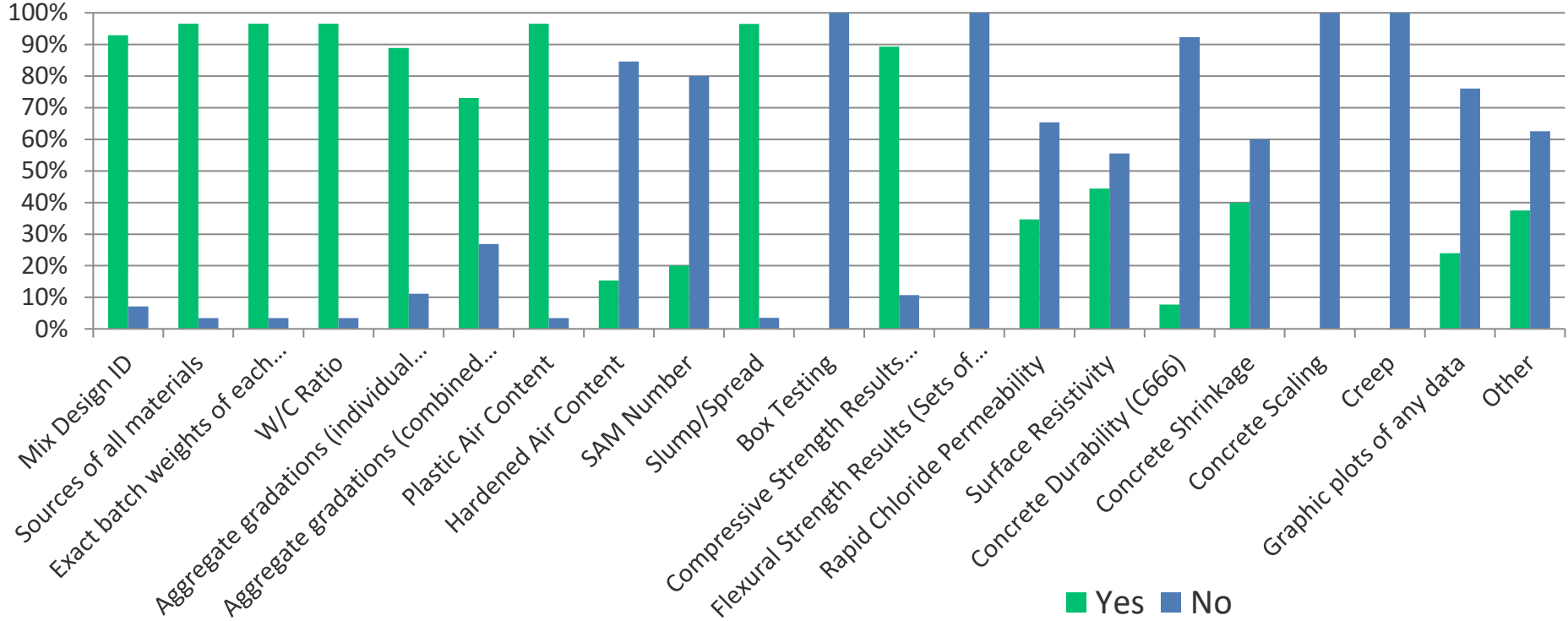
Concrete Paving



Q6: What does your Agency require in a trial batch report for Bridge Concrete?

Answered: 30 Skipped: 4

Bridge Concrete

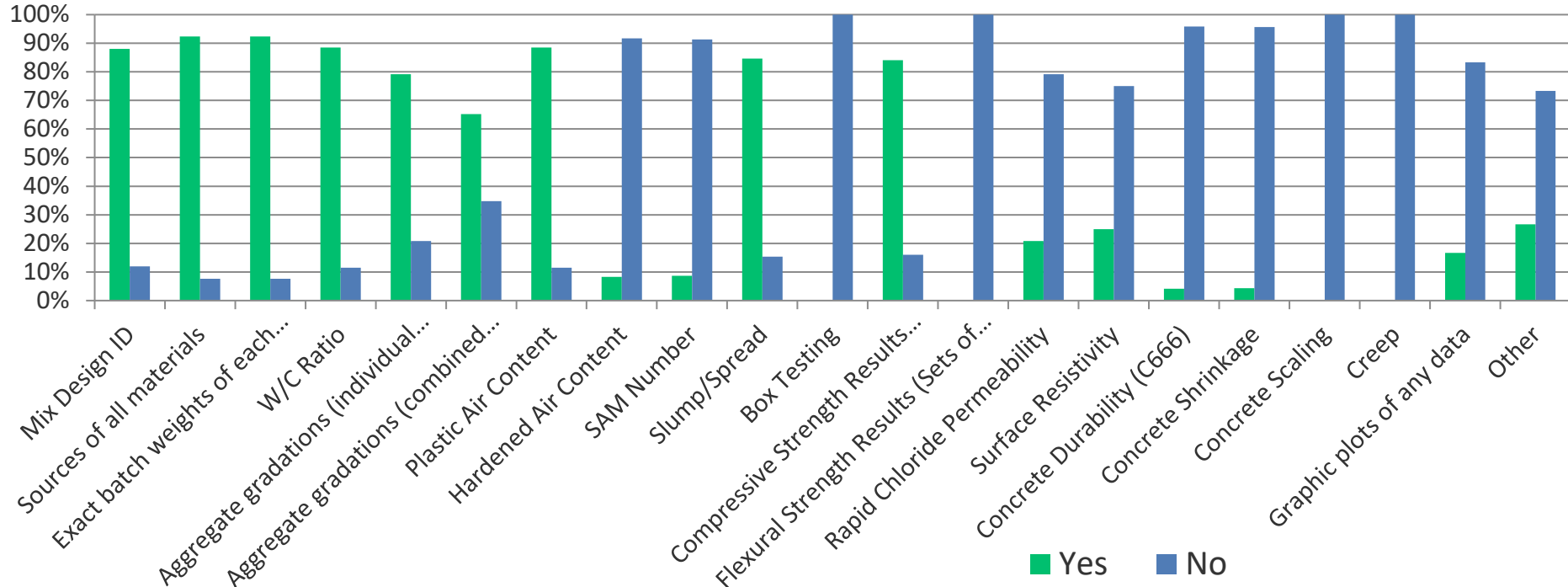


Yes No

Q6: What does your Agency require in a trial batch report for General Concrete?

Answered: 30 Skipped: 4

General Concrete



Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

1. Fresh-property tests occur very early (universally <5–15 minutes)
 - Most DOTs require:
 - Plastic air content: within 5 minutes or 5–15 minutes after mixing
 - Slump / slump flow / spread: same early timeframe
 - These tests are used to verify immediate workability and air entrainment performance.
2. Strength testing almost always includes 28-day breaks
 - Common strength schedules:
 - 28-day compressive strength: required by nearly all agencies
 - Some agencies add: 7-day and 56-day cylinders
 - Early-age tests: 1, 3, or 14 days
 - Additional 90-day or extended-curing tests for durability mixes



Microsoft 365
Copilot

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

3. Extended testing is required only for specialty concretes

- Certain states require more extensive testing for:
- HPC (high-performance concrete)
- SCC (self-consolidating concrete)
- Mass concrete
- Drilled shaft mixes

These may include:

- Multiple slump-loss checks (every 15 or 30 minutes)
- Surface resistivity at 28 or 56 days
- Rapid Chloride Permeability (RCP) at 28/56/90 days
- Shrinkage at 28 or 56 days
- Durability testing (C666 freeze-thaw) at 14 or 300 cycles
- Creep, scaling, or SAM testing, depending on agency



Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Plastic Air Content	Hardened Air Content	SAM Number	Slump/Spread	Box Test
Alabama	One per batch	N/A	N/A	One per batch; drilled shaft concrete must undergo slump loss testing (measured every 30 mins until 4" slump is reached)	N/A
Arkansas					
Colorado	< 5 min	N/A	N/A	< 5 min	Not specified
Florida	Initial <15 min			Every 15 min(drilled shafts) every 30 mins (SCC/Flowing)	
Georgia					
Idaho	<5 min	N/A	N/A	<5 min	N/A
Illinois	per T152 or T196			per T119 or any applicable slump retention specs	

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Plastic Air Content	Hardened Air Content	SAM Number	Slump/Spread	Box Test
Illinois Tollway	Initially. Rechecked after 20 and 45 minutes for mixes with hold time (HP, MC)	Fabricated after initial tests		Initially. Rechecked after 20 and 45 minutes for mixes with hold time (HP, MC)	
Indiana	<15 min	N/A	N/A	<15 min	<30 min
Iowa	5 min.		10 min		5 min.
Kansas	15 min			15 min	
Kentucky	<5 min	N/A	N/A	<5 min	N/A
Michigan	Initial (< 5 mins)	NA	NA	Initial (< 5 mins)	NA
Minnesota	<5, 15, and 30 minutes after completion of mixing	Min. of 7 calendar days	<=0.25	<5, 15, and 30 minutes after completion of mixing	

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Plastic Air Content	Hardened Air Content	SAM Number	Slump/Spread	Box Test
Missouri	n/a	n/a	n/a	n/a	n/a
Montana	No frequency specified	Not required	Not required	No frequency specified	No frequency specified
Nebraska					
Nevada	Within 5 minutes of obtaining representative sample	N/A	N/A	Within 5 minutes of obtaining representative sample	N/A
New York	Once	Optional. Allowed if SAM of under 0.20 can't be obtained.	Once	Once	Once
North Carolina	<5 minutes	N/A	N/A	<5 minutes	N/A
North Dakota					

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Plastic Air Content	Hardened Air Content	SAM Number	Slump/Spread	Box Test
Ohio					
Oklahoma	< 15 min	N/A	N/A	< 15 min	N/A
Oregon	Anytime within the AASHTO limits from sample time	N/A	N/A	Anytime within the AASHTO limits from sample time	Anytime
Pennsylvania	15 minutes must meet or exceed tolerance	15 minutes must meet or exceed tolerance		15 minutes must meet or exceed tolerance	
South Carolina	None	None	None	None	None
South Dakota	Once after batching	NA	NA	Once after batching and again 20 minutes after batching	NA - Going to require soon - Once after batching
Tennessee					
Texas	<15 min	N/A	N/A	<15 min	N/A

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Plastic Air Content	Hardened Air Content	SAM Number	Slump/Spread	Box Test
Utah	1 test	NA	NA	Spread for SCc	1 test
Vermont	Depends the reason for the trial pour. Drilled shaft SCC would require air and flow testing done periodically. Most of the time the testing is done at the end of the expected time duration	no	no	Typically at the end of the expected time frame.	no
West Virginia	per batch within 5 mins	NA	per batch within 15 mins	per batch within 5 mins	NA
Wisconsin	Once per ASSHTO standard		Once	Once per ASSHTO standard	Once
Wyoming	less than 15 minutes after final mixing	n/a	n/a	less than 15 minutes after final mixing	n/a

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Compressive Strength	Flexural Strength	Rapid Chloride Permeability	Surface Resistivity
Alabama	7 & 28 days	7 & 28 days	Once per batch if required	N/A
Arkansas	28 days			
Colorado	28 days	28 days	56 days	28 days
Florida	28 days			28 days
Georgia	28 days	28 days		
Idaho	3, 7, 28, 56	N/A	N/A	56
Illinois	at test of record (14 days) and at Engineer's discretion	at test of record (14 days) and at Engineer's discretion		
Illinois Tollway	Fabricated after 45 minutes for mixes requiring a slump loss evaluation. Fabricated after initial tests for other mixes			Fabricated after initial tests
Indiana	N/A	7 days	N/A	N/A
Iowa	28 & 56 if SCMs			28 & 56 if SCMs

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Compressive Strength	Flexural Strength	Rapid Chloride Permeability	Surface Resistivity
Kansas	28D			28D
Kentucky	28 days	N/A	N/A	N/A
Michigan	28 day (for sets of 2)	Depends on opening to traffic or work progress demands	NA	NA
Minnesota	1, 3, 7, 28, and 56 calendar days, \geq f'c @ 28 days		\leq 2500 coulombs at 28 and \leq 1500 coulombs at 56 calendar days	
Missouri	28 day	n/a	n/a	n/a
Montana	28 days or request for 56 day acceptance	28 days	No frequency specified either RCP or SR	No frequency specified either RCP or SR
Nebraska				
Nevada	28 days	28 days	56 days	N/A
New York	3,7,14 & 28 days	28 days	No	28 & 56 days

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Compressive Strength	Flexural Strength	Rapid Chloride Permeability	Surface Resistivity
North Carolina	28 day strength	28 day strength	N/A	N/A
North Dakota				
Ohio				
Oklahoma	28 days	N/A	N/A	N/A
Oregon	28 day currently, considering 56 days in the future	28 day	90 day	56 day
Pennsylvania	28 Day			Must meet or be within tolerance.
South Carolina	28 days	None	None	None
South Dakota	7, 14, 28 days	NA	NA	NA
Tennessee				

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Compressive Strength	Flexural Strength	Rapid Chloride Permeability	Surface Resistivity
Texas	7 day, 28 day, 56 day (not required but allowed by spec)	N/A	N/A	N/A
Utah	28 days	28 days	NA	28 days
Vermont	depends on trial pour	no	no	no
West Virginia	24 hours, one at 3 days, one at 7 days, one at 14 days, and three at 28 days	28 days	per batch @ 28,35, 56, 90 days	per batch @ 28 or 35 days
Wisconsin	3 cylinders at 28 days	3 beams at 28 days	for HPC structures only (once)	3 cylinders 28 days accelerated testing
Wyoming	28-days	28-days	n/a	n/a

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Concrete Durability (C666)	Concrete Shrinkage	Concrete Scaling	Creep	Other
Alabama	N/A	Three prisms tested at 28 days from exposure to drying at 7 days of age.	N/A	N/A	N/A
Arkansas					
Colorado	N/A	28 Days	N/A	N/A	
Florida		28 days			
Georgia					PCCP and Mass mixes have different age day requirements depending on the mix type.
Idaho	N/A	28	N/A	N/A	
Illinois	per C666/T161	per C672			
Illinois Tollway					

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Concrete Durability (C666)	Concrete Shrinkage	Concrete Scaling	Creep	Other
Indiana	N/A	N/A		N/A	
Iowa					
Kansas					
Kentucky	N/A	N/A	N/A	N/A	
Michigan	NA	NA	NA	NA	NA
Minnesota	>=90% at 300 cycles	0.04% at 28 calendar days	VSI <=2 at 50 cycles		
Missouri	n/a	n/a	n/a	n/a	
Montana	NA	NA	NA	NA	
Nebraska					
Nevada	N/A	56 days	N/A	N/A	

Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Concrete Durability (C666)	Concrete Shrinkage	Concrete Scaling	Creep	Other
New York	Optional. Allowed if SAM of under 0.20 can't be obtained.	No, controlled with Paste Content	No	No	
North Carolina	N/A	N/A	N/A	N/A	N/A
North Dakota					
Ohio					
Oklahoma	N/A	N/A	N/A	N/A	
Oregon	N/A	56 day	N/A	N/A	
Pennsylvania	Must meet or be within tolerance.				
South Carolina	None	None	None	None	This is only for roller-compacted concrete paving.

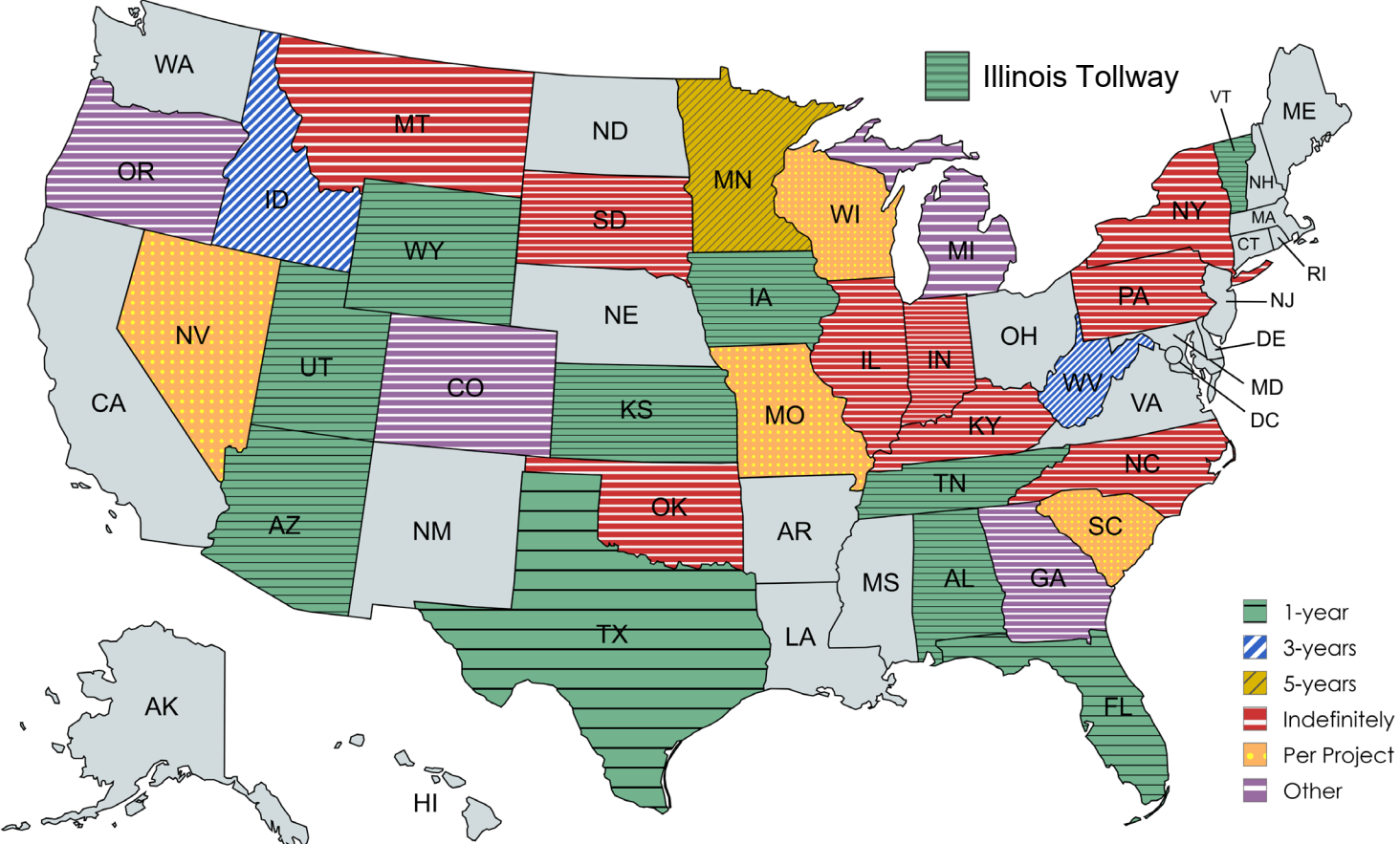
Q7: What frequency does your Agency require testing during trial batching (ie. air content testing at <5 min, 15 min, and 30 min; compressive strength at 28 and 56 days)?

Answered: 30 Skipped: 4

State	Concrete Durability (C666)	Concrete Shrinkage	Concrete Scaling	Creep	Other
South Dakota	NA	28 day cure + 28 day drying	NA	NA	Fresh Concrete Temp after batching
Texas	N/A	N/A	N/A	N/A	N/A
Utah	na	28 days	na	na	
Vermont	no	no	no	no	no
West Virginia	per batch @ 14 days	per batch @ 28 days	NA	per batch @ 28 days	
Wisconsin					
Wyoming	n/a	n/a	n/a	n/a	

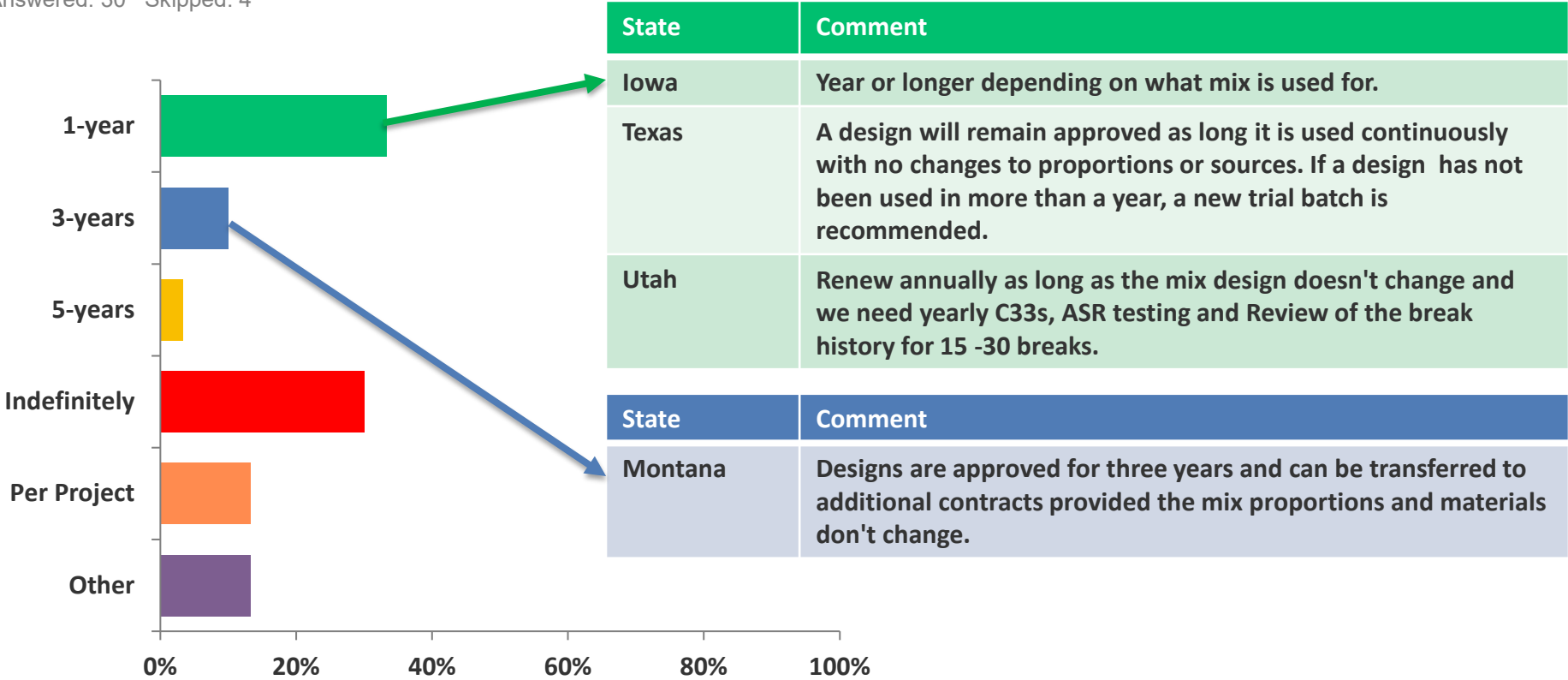
Q8: What period of time are the trial batch test results acceptable to use, assuming the mix design doesn't change?

Answered: 30 Sk



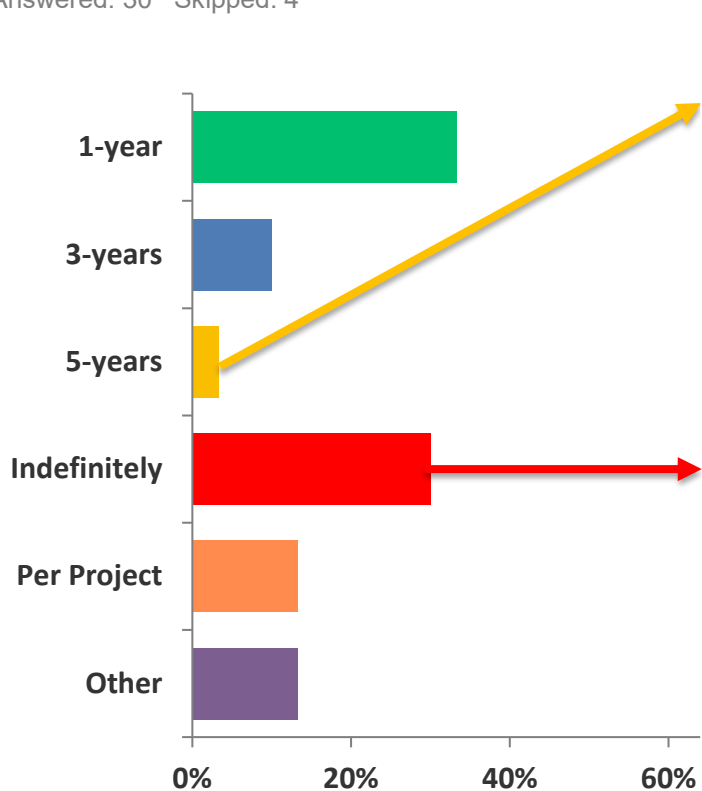
Q8: What period of time are the trial batch test results acceptable to use, assuming the mix design doesn't change?

Answered: 30 Skipped: 4



Q8: What period of time are the trial batch test results acceptable to use, assuming the mix design doesn't change?

Answered: 30 Skipped: 4

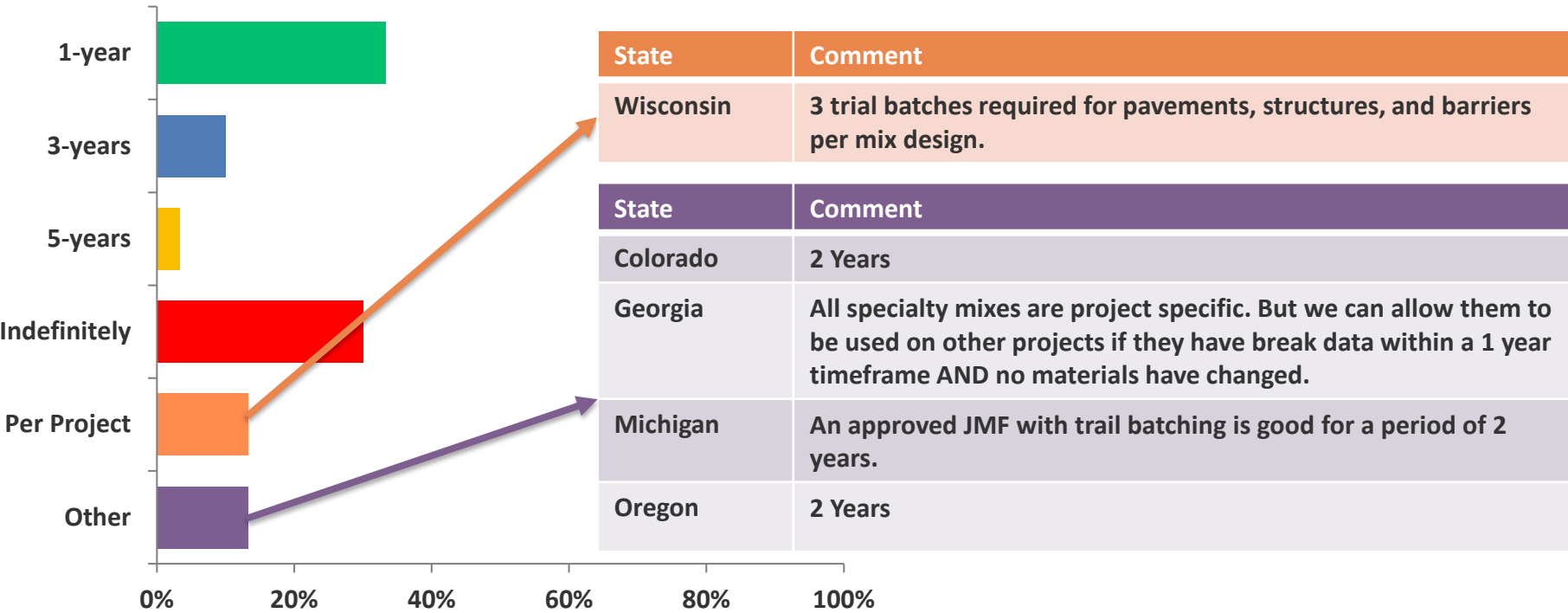


State	Comment
Minnesota	HPC, SCC, and Mass Concrete Mixes are good for 5 years Level II general concrete mixes are good indefinitely as long as materials don't change

State	Comment
Kentucky	Modified and custom mixes or any changes to the batching system require new trial batching for all classes.
New York	At this time, there is no limit to the length that the mix design is good for.
North Carolina	Once mix designs have been accepted, no further trial batches are needed unless there is a design change.
Pennsylvania	Mix designs must be resubmitted and will require new trial batching, evaluation, and approval when: <ul style="list-style-type: none"> • Changes in the bulk specific gravity (SSD) of any aggregate greater than or equal to 0.04 from the original, trial batched, mix design • Changes to the water cement (w/c) ratio, higher than that from the "Trial Batch" • An addition of any admixture • A change in the type or supplier source of any admixture • A change in any aggregate, cement, or SCM sources

Q8: What period of time are the trial batch test results acceptable to use, assuming the mix design doesn't change?

Answered: 30 Skipped: 4



Q9-Q11: What does your Agency require if someone wants to make a cementitious, aggregate or admixture adjustment to the mix design?

Answered: 31 Skipped: 3

Ranges from **no changes allowed** to fairly flexible:

- Cementitious: **0–10%** depending on state
- Aggregate proportions: **0–10%** or weight-based limits
- Admixtures: usually **within manufacturer recommendations**

Many agencies require **resubmittal AND new trial batch** if:

- Source changes
- Type changes
- Proportions change beyond allowed thresholds

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Same Cementitious Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Alabama	Yes	Yes	No
Arkansas	Yes		
Colorado	Yes	Yes	
Florida		Yes	
Georgia	Yes		
Idaho	Yes	Yes	It Depends
Illinois	It Depends	It Depends	No
Illinois Tollway	Yes	Yes	
Indiana	Yes	Yes	No
Iowa	Yes	No	No

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Same Cementitious Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Kansas			
Kentucky	Yes	Yes	No
Michigan	Yes	Yes	It Depends
Minnesota	Yes	It Depends	
Missouri	Yes	No	No
Montana	Yes	Yes	No
Nebraska			
Nevada	Yes	Yes	No
New York	Yes	Yes	No

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Same Cementitious Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
North Carolina	Yes	Yes	No
North Dakota	Yes	No	No
Ohio	Yes		
Oklahoma	Yes		
Oregon	Yes	It Depends	It Depends
Pennsylvania	Yes	Yes	
South Carolina			
South Dakota	Yes	Yes	No
Tennessee	Yes	Yes	No

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Same Cementitious Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Texas	Yes	It Depends	It Depends
Utah	No	Yes	No
Vermont	Yes	No	No
West Virginia	Yes	Yes	No
Wisconsin	Yes	Yes	No
Wyoming	Yes	Yes	It Depends

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Cementitious Type (Same Source)

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Alabama	Yes	Yes	No
Arkansas	Yes		
Colorado	Yes	Yes	
Florida		Yes	
Georgia	Yes		
Idaho	Yes	Yes	It Depends
Illinois	It Depends	It Depends	No
Illinois Tollway	Yes	Yes	
Indiana	Yes	Yes	No
Iowa	Yes	No	No

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Cementitious Type (Same Source)

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Kansas			
Kentucky	Yes	Yes	No
Michigan	Yes	Yes	It Depends
Minnesota	Yes	It Depends	
Missouri	Yes	No	No
Montana	Yes	Yes	No
Nebraska			
Nevada	Yes	Yes	No
New York	Yes	Yes	No

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Cementitious Type (Same Source)

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
North Carolina	Yes	Yes	No
North Dakota	Yes	No	No
Ohio	Yes		
Oklahoma	Yes		
Oregon	Yes	It Depends	It Depends
Pennsylvania	Yes	Yes	
South Carolina			
South Dakota	Yes	Yes	No
Tennessee	Yes	Yes	No

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Cementitious Type (Same Source)

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Texas	Yes	It Depends	It Depends
Utah	No	Yes	No
Vermont	Yes	No	No
West Virginia	Yes	Yes	No
Wisconsin	Yes	Yes	No
Wyoming	Yes	Yes	It Depends

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Cementitious Proportions

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Alabama	Yes	Yes	No
Arkansas	Yes		
Colorado	Yes	Yes	
Florida	Yes	Yes	
Georgia		Yes	
Idaho	It Depends	It Depends	It Depends
Illinois	Yes	It Depends	No
Illinois Tollway	Yes	Yes	
Indiana	Yes	Yes	No
Iowa	Yes	No	No

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Cementitious Proportions

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Kansas			
Kentucky	Yes	Yes	No
Michigan	Yes	Yes	It Depends
Minnesota	Yes	Yes	
Missouri	It Depends	No	No
Montana	Yes	Yes	No
Nebraska			
Nevada	Yes	Yes	No
New York	Yes	Yes	No

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Cementitious Proportions

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
North Carolina	Yes	Yes	No
North Dakota	No	No	No
Ohio	Yes		
Oklahoma	Yes		
Oregon	Yes	Yes	It Depends
Pennsylvania	Yes	Yes	
South Carolina			
South Dakota	Yes	It Depends	No
Tennessee	Yes	Yes	No

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Cementitious Proportions

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Texas	Yes	Yes	No
Utah	No	Yes	No
Vermont	Yes	No	No
West Virginia	It Depends	It Depends	It Depends
Wisconsin	Yes	No	No
Wyoming	Yes	Yes	It Depends

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Additional Comments

Ans

State	Comments
Alabama	Exceptions can be made if the source is being swapped due to supply chain issues.
Arkansas	We give the contractors the option to place the mix design in "Provisional Approval" status for up to two weeks. During that period, they can make almost any adjustment to the mix and place it as production mix. The produced material is required to meet all performance requirements. After two weeks they have to summarize what they tried and what the observed and either request an extension or request full approval of the mix design. This has been very popular with or concrete paving contractors. They use it to optimize production.
Florida	Cementitious proportions are allowed +/- 6.5% without a new trial batch.
Georgia	If the type of cement is the same and the weight changes are +/- 5 lbs, we can change the cement source without putting the mix back up. If the cement types are different and/or the weights are higher than the +/- 5 lbs, we have to put the mix design up again for approval.
Kansas	Any variation > 10% requires a new mix design. Change in source = new mix.
Michigan	Trial batch is part of Michigan's JMF process. Field trial placement would depend on how the special provision was written and up to the Engineer's direction. Most likely if a field trial batch was required we would require another field trial batch if the cement source, type or proportions changed.

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Additional Comments

Answered: 33 Skipped: 1

State	Comments
Minnesota	During the transition to Type II, we considered II from the same source as original trial batching to be equivalent to either Type I or I/II for that source. New trial batching is required for HPC, MASS, and SCC if any constituent changes (weight and/or source). If the total cementitious increases by over 5%, new trial batching is required for general concrete. Changes under 5% require resubmittal.
Missouri	When a fly ash source is changed, a new mix design is not required if: 1) The fly ash source on the prequalified list 2) Same fly ash Class (i.e., Class C for Class C or Class F for Class F) 3) Yield not changed more than 0.04. Changes up to 5 percent by weight are allowed before a new mix design is required.
Montana	Any time there is a change in source, type, or proportions, we will require a new trial batch and resubmittal with new materials/ proportions.
North Carolina	If a producer changes from cement source A to cement source B, as long as the cement type does not change and the proportions do not change, we do require a new mix design but we don't require a new trial batch.

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Additional Comments

Answer

State	Comments
Oregon	Our standard spec requires new mix design and trial batch for all of these scenarios by default. But over the last 5-10 years we have experienced a lot of volatility with cement supply, type and source changes. So in practice we end up waving some of the testing required a lot of the time. These are always on a case-by-case basis, considering the significance of the change (checking mill certs, historical records, reference designs etc.), the structure they are pouring and the urgency (contract time).
Pennsylvania	Field trial placement is an option for the contractor. Resubmittal is based off of batch tolerances set forth by AASHTO M 157. (Fluctuation of coarse aggregate specific gravity).
South Carolina	This is not specified.
Texas	In an effort to keep projects moving, Texas allows the contractor to perform a trial batch in conjunction with a placement when new trial batches are required during the course of a project. When cement availability and allocations require source changes, we have allowed one-to-one substitutions of one source or type for another.
Vermont	We have developed an Allowable Change Table that gives guidance of what changes require just and administrative mix design submittal or would trigger certain testing to be done or a complete new mix design process.

Q9: What does your Agency require if someone wants to make a cementitious adjustment to the mix design? Additional Comments

Answered: 33 Skipped: 1

State	Comments
West Virginia	SCC Prestressed concrete mix SCC Prestressed concrete mix designs and overlays require field trial placement, so if these adjustments are made they would need to be reconducted.
Wisconsin	WisDOT does now allow field trials
Wyoming	Would require a new field trial placement if there are special requirements for that mix (i.e. drilled shafts)

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Alabama	It Depends	It Depends	No
Arkansas	Yes		
Colorado	Yes	Yes	
Florida	Yes		
Georgia		Yes	
Idaho			
Illinois	Yes	It Depends	No
Illinois Tollway	Yes	Yes	
Indiana	Yes	Yes	No
Iowa	Yes	No	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Kansas			
Kentucky	Yes	Yes	No
Michigan	Yes	It Depends	It Depends
Minnesota	Yes	It Depends	
Missouri	Yes	No	No
Montana	Yes	Yes	No
Nebraska			
Nevada	Yes	Yes	No
New York	Yes	It Depends	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
North Carolina	Yes	Yes	No
North Dakota	Yes	No	No
Ohio	No		
Oklahoma	Yes		
Oregon	Yes	Yes	It Depends
Pennsylvania	Yes	Yes	
South Carolina			
South Dakota	Yes	Yes	No
Tennessee	Yes	Yes	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Texas	Yes	It Depends	It Depends
Utah	No	Yes	No
Vermont	Yes	No	No
West Virginia	Yes	Yes	No
Wisconsin	Yes	Yes	No
Wyoming	Yes	Yes	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Type/Class

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Alabama	Yes	Yes	No
Arkansas			
Colorado	Yes	Yes	
Florida		Yes	
Georgia		Yes	
Idaho			
Illinois	Yes	It Depends	No
Illinois Tollway	Yes	Yes	
Indiana	Yes	Yes	No
Iowa	Yes	No	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Type/Class

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Kansas			
Kentucky	Yes	Yes	No
Michigan	Yes	Yes	It Depends
Minnesota	Yes	Yes	
Missouri	Yes	No	No
Montana	Yes	Yes	No
Nebraska			
Nevada	Yes	Yes	No
New York	Yes	Yes	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Type/Class

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
North Carolina	Yes	Yes	No
North Dakota	Yes	No	No
Ohio	Yes		
Oklahoma	Yes		
Oregon	Yes	It Depends	It Depends
Pennsylvania	Yes	Yes	
South Carolina			
South Dakota	Yes	It Depends	No
Tennessee	Yes	Yes	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Type/Class

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Texas	Yes	It Depends	It Depends
Utah	No	Yes	No
Vermont	Yes	No	No
West Virginia	Yes	Yes	No
Wisconsin	Yes	Yes	No
Wyoming	It Depends	It Depends	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Proportions

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Alabama	No	No	No
Arkansas	Yes		
Colorado	It Depends	It Depends	
Florida	Yes	Yes	
Georgia		Yes	
Idaho			
Illinois	It Depends	It Depends	No
Illinois Tollway	Yes	Yes	
Indiana	Yes	Yes	No
Iowa	Yes	No	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Proportions

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Kansas			
Kentucky	Yes	Yes	No
Michigan	It Depends	It Depends	It Depends
Minnesota	Yes	It Depends	
Missouri	It Depends	No	No
Montana	Yes	Yes	No
Nebraska			
Nevada	Yes	Yes	No
New York	Yes	It Depends	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Proportions

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
North Carolina	Yes	Yes	No
North Dakota	Yes	No	No
Ohio	No		
Oklahoma	Yes		
Oregon	Yes	It Depends	It Depends
Pennsylvania	Yes		
South Carolina			
South Dakota	Yes	It Depends	No
Tennessee	Yes	Yes	No

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Aggregate Proportions

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Texas	Yes	Yes	No
Utah	No	Yes	No
Vermont	Yes	No	No
West Virginia	No	It Depends	No
Wisconsin	Yes	No	No
Wyoming	Yes	Yes	Yes

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Additional Comments

Answered: 33 Skipped: 1

State	Comments
Alabama	Exceptions can be made if the source is being swapped due to supply chain issues.
Colorado	Aggregate adjustments are allowed in optimized gradations. Normal mixes require new trial mixes if proportion change more the 2% by weight
Florida	Aggregate proportion changes are allowed up to +/- 75 lbs of each aggregate without a new trial batch
Iowa	Aggregates +/-4%
Kansas	> 10% = new mix
Michigan	If the source is changed to different source from the same geological type/origin, then we do not require new or field trial batching. Small changes in proportions to maintain optimized aggregate gradations is permitted without resubmittal of mix design, new trial batch or field trial placement. Michigan does not typically require field trail placement. If there was it would be per special provision.
Minnesota	If the individual aggregate weights increase by over 10%, new trial batching is required for general mixes. Any aggregate changes for HPC, MASS, and SCC require new trial batching and resubmittal.

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Additional Comments

Answered: 33 Skipped: 1

State	Comments
Missouri	When the aggregate source is changed, the source must be approved for that specific use, pavement or masonry. The better contractors will do a field trial batch before starting placement. Changes up to 5 percent by weight are allowed before a new mix design is required.
Montana	Generally we require new trial batches and resubmittal with any change in materials or proportioning.
New York	A new trial batch would be needed depending on how similar the new source is compared to the original. If it's the same lithology & similar gradations then a new trial may not be needed. If the new source is potentially reactive and the mix design does not properly address the reactivity then a new trial batch would be needed.
Oregon	Our standard spec requires new mix design for all the scenarios. Trial batching is typically only required for substitution of a new source. However, most suppliers do a truck trial to verify everything is in spec if they make a significant adjustment to the aggregate within a source. Sand FM is a good example
Pennsylvania	Aggregate proportions are set by batch tolerances. If that exceeds 1.0% then a new design or trail batch is performed.

Q10: What does your Agency require if someone wants to make an aggregate adjustment to the mix design? Additional Comments

Answered: 33 Skipped: 1

State	Comments
South Carolina	This would be determined on a case-by-case basis.
Texas	In an effort to keep projects moving, Texas allows the contractor to perform a trial batch in conjunction with a placement when new trial batches are required during the course of a project.
Vermont	We have developed an Allowable Change Table that gives guidance of what changes require just and administrative mix design submittal or would trigger certain testing to be done or a complete new mix design process.
West Virginia	SCC Prestressed concrete mix SCC Prestressed concrete mix designs and overlays require field trial placement, so if these adjustments are made they would need to be reconducted.
Wisconsin	WisDOT does now allow field trials
Wyoming	Change in aggregate type/class would require a new mix design if gradation varied by more than 10% from original.

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Alabama	Yes	Yes	No
Arkansas			Yes
Colorado	No	No	
Florida		Yes	
Georgia		Yes	
Idaho	It Depends	It Depends	It Depends
Illinois	No	It Depends	No
Illinois Tollway	Yes	Yes	
Indiana	No	No	No
Iowa	No	No	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Kansas			
Kentucky	Yes	Yes	No
Michigan	Yes	Yes	It Depends
Minnesota	Yes	No	Yes
Missouri	No	No	No
Montana	Yes	Yes	No
Nebraska			
Nevada	Yes	Yes	No
New York	Yes	It Depends	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
North Carolina	Yes	No	No
North Dakota	Yes	No	No
Ohio	No		
Oklahoma	Yes		
Oregon	Yes	Yes	It Depends
Pennsylvania	Yes	Yes	
South Carolina			
South Dakota	Yes	No	No
Tennessee	Yes	Yes	No

Q9: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Source

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Texas	Yes	It Depends	It Depends
Utah	No	Yes	No
Vermont	Yes	No	No
West Virginia	It Depends	It Depends	Yes
Wisconsin	Yes	Yes	No
Wyoming	Yes	Yes	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Type/Class

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Alabama	Yes	Yes	No
Arkansas			Yes
Colorado	No	No	
Florida		Yes	
Georgia		Yes	
Idaho	It Depends	It Depends	It Depends
Illinois	No	It Depends	No
Illinois Tollway	Yes	Yes	
Indiana	Yes	Yes	No
Iowa	No	No	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Type/Class

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Kansas			
Kentucky	Yes	Yes	No
Michigan	Yes	Yes	It Depends
Minnesota	Yes	No	Yes
Missouri	No	No	No
Montana	Yes	Yes	No
Nebraska			
Nevada	Yes	Yes	No
New York	Yes	Yes	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Type/Class

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
North Carolina	Yes	No	No
North Dakota	Yes	No	No
Ohio	No		
Oklahoma	Yes		
Oregon	Yes	Yes	It Depends
Pennsylvania	Yes	Yes	
South Carolina			
South Dakota	Yes	No	No
Tennessee	Yes	Yes	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Type/Class

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Texas	Yes	It Depends	It Depends
Utah	No	Yes	No
Vermont	Yes	No	No
West Virginia	Yes	Yes	
Wisconsin	Yes	Yes	No
Wyoming	Yes	Yes	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Dosage

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Alabama	No	No	No
Arkansas			Yes
Colorado	No	No	
Florida			
Georgia	Yes		
Idaho	It Depends	It Depends	It Depends
Illinois	No	It Depends	No
Illinois Tollway	It Depends	It Depends	
Indiana	No	No	No
Iowa	No	No	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Dosage

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Kansas			
Kentucky	Yes	Yes	No
Michigan	It Depends	It Depends	It Depends
Minnesota	Yes	No	Yes
Missouri	No	No	No
Montana	No	No	No
Nebraska			
Nevada	Yes	Yes	No
New York	It Depends	It Depends	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Dosage

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
North Carolina	Yes	No	No
North Dakota	No	No	No
Ohio	No		
Oklahoma	Yes		
Oregon	It Depends	It Depends	It Depends
Pennsylvania			
South Carolina			
South Dakota	No	No	No
Tennessee	No	No	Yes

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Admixture Dosage

Answered: 31 Skipped: 3

State	Resubmittal of Mix Design	New Trial Batch	Field Trial Placement
Texas	No	No	No
Utah	No	Yes	No
Vermont	Yes	No	No
West Virginia	It Depends	It Depends	Yes
Wisconsin	Yes	No	No
Wyoming	No	No	No

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Additional Comments

Answered: 33 Skipped: 1

State	Comments
Alabama	Dosage does not require a new trial batch/submittal as long as manufacturer's max recommended dosage is not exceeded.
Colorado	If the admixture brand or product changes, a stamped letter from the mix design engineer needs to be submitted listing the Mix ID and allowable dosages.
Florida	Admixture dosages may be made in the field as long as they are within the manufacturer's recommended dosage.
Idaho	As long as they use the same producer for the admixtures, and list the admixture on the mix design, it is the Contractor's responsibility to use the admixtures to meet the requirements of the project. Typically, we require the admixtures to either be listed on the qualified products list, or under application to be on the list.
Kansas	new admix = new mix
Michigan	Small tweaks to the admixture dosage in the field is allowed to maintain plastic properties. Field trial placement would depend on how the special provision was written and up to the Engineer's direction. Most likely if a field trial batch was required we would require another field trial batch if the admixture source or type changed.

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Additional Comments

Answered: 33 Skipped: 1

State	Comments
Minnesota	The responses pertain to bridge concrete only. Admixtures changes are permitted without new trial batching but resubmittal is required. And test pours will not be waived.
Missouri	Contractors are required to advise the MoDOT inspector of admixture changes being made. The admixtures must be on the prequalified list.
Montana	Generally we require new trial batches and resubmittal with any change in materials or proportioning. However, there are certain situations such as long haul that we will approve the use of a retarding admixture (project specific) not included on the approved design.
New York	New trials are needed if new types of admixtures are used. Admixture dosage can be adjusted due to environmental conditions (ie. AEA, WR, Retarders, etc...) to provide in target concrete. Adjusting admixture like accelerators, CNI, etc... would need a new trial as the adjustment to the admixture has a significant effect on the intent of the mix.
Oregon	We allow seasonal adjustments for air entraining agents and Type A or D water reducers of +/- 25 oz per cy. Outside of that its a new mix design and typically trial batching.

Q11: What does your Agency require if someone wants to make an admixture adjustment to the mix design? Additional Comments

Answered: 33 Skipped: 1

State	Comments
Pennsylvania	Admixture dosages are based on target ranges provided by the manufacturer. If dosages are outside the target range, then a new trial batch is required.
South Carolina	This would be determined on a case-by-case basis.
Texas	In an effort to keep projects moving, Texas allows the contractor to perform a trial batch in conjunction with a placement when new trial batches are required during the course of a project.
Vermont	We have developed an Allowable Change Table that gives guidance of what changes require just and administrative mix design submittal or would trigger certain testing to be done or a complete new mix design process.
West Virginia	SCC Prestressed concrete mix SCC Prestressed concrete mix designs and overlays require field trial placement, so if these adjustments are made they would need to be reconducted.
Wisconsin	WisDOT does now allow field trials

Q12: What is the maximum proportion adjustment allowed without trial batching?

Answered: 32 Skipped: 2

3 Defined Approaches

1. No Adjustments Allowed (Strict)

- Many states do NOT allow any proportion changes to cementitious, aggregate, or admixtures without triggering:
 - New trial batch
 - Resubmittal
 - Sometimes both

2. Small, Defined Adjustment Limits

- Several states allow small, numeric adjustments
- These states provide structured but limited flexibility.

3. Engineering Judgment / Case-by-Case (Flexible)

- A number of agencies allow adjustments based on engineering judgment, typically requiring evaluation but not automatically a new trial batch.
- states rely on experience, performance data, and professional review.



Q12: What is the maximum proportion adjustment allowed without trial batching?

Answered: 32 Skipped: 2

Admixtures are the most flexible component

Across agencies: Admixture dosage changes are often allowed without trial batching, as long as:

- Within manufacturer dosage limits
- Adjustments relate to environmental or seasonal conditions
- They do not change the mix intent (e.g., accelerators)

Cementitious and aggregate changes are the least flexible

Most states see these as structural, requiring:

- New trial batch
- New mix submittal

Material source changes almost always trigger new trial batching

Across nearly all states:

- New cement source → new trial batch
- New aggregate source → new trial batch
- New admixture brand/type → new trial batch

Q12: What is the maximum proportion adjustment allowed without trial batching?

Answered: 32 Skipped: 2

State	Cement	Aggregate	Admixtures
Alabama	No set maximum	No set maximum	Not to exceed mfctr max dosage
Arkansas			
Colorado	1% by weight	2% by weight	no limits
Florida	6.5%	75 lbs	Manufacturer's recommendation
Georgia	+/- 1%	+/- 2%	+/- 3%
Idaho	5-10%	5-10%	N/A
Illinois	change in materials	change in materials	change in materials
Illinois Tollway	Cannot be adjusted without trial	Cannot be adjusted without trial	Retarder has minimum based on the approved design. Shrinkage reducer cannot be adjusted
Indiana	Adjustments are not allowed	+/- 3%	no limit
Iowa	Not typically changed	+/-4%	as needed

Q12: What is the maximum proportion adjustment allowed without trial batching?

Answered: 32 Skipped: 2

State	Cement	Aggregate	Admixtures
Kansas	10%	10%	new source
Kentucky	0	0	0
Michigan	None	Engineering judgement	Engineering judgement
Minnesota	5	10	Any
Missouri	n/a	n/a	n/a
Montana	None	None	Within manufactures recommended dosages
Nebraska			
Nevada	N/A	N/A	N/A
New York	None. Cementitious materials need to be within automation batching tolerances.	No defined limit. Individual aggregates can be adjusted to maintain an optimized combined gradation.	No defined limit. Needs to be workable and perform.

Q12: What is the maximum proportion adjustment allowed without trial batching?

Answered: 32 Skipped: 2

State	Cement	Aggregate	Admixtures
North Carolina	5%	5%	No requirement.
North Dakota	Trail Batching is Not required.	Trail Batching is Not required.	Trail Batching is Not required.
Ohio			
Oklahoma	N/A	N/A	N/A
Oregon	Just can't reduce	It depends (nothing predetermined)	Described above
Pennsylvania	1.0%	1.0%	Target Ranges from Manufacturer
South Carolina	This would be determined on a case-by-case basis.	This would be determined on a case-by-case basis.	This would be determined on a case-by-case basis.
South Dakota	No less than trial batches, but Allow increase up to Specification Max.	0.5 % in Rock to Sand %	Review and possibly reject if not appropriate for situation.
Tennessee	N/A	N/A	N/A

Q12: What is the maximum proportion adjustment allowed without trial batching?

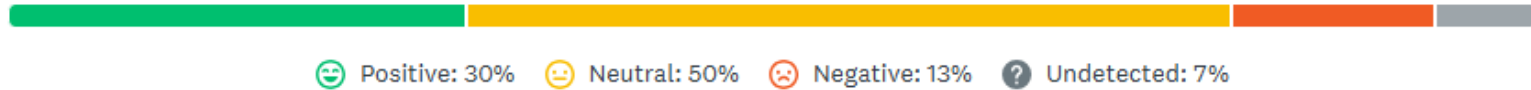
Answered: 32 Skipped: 2

State	Cement	Aggregate	Admixtures
Texas	None	None	Within manufacturer recommended dosage
Utah	1%	2%	
Vermont	+/- 5%	+/- 10%	Most admixtures can be adjusted as needed
West Virginia	NA	NA	Type F or G per manufacturers recommendations
Wisconsin	No maximum limit yet as long as within the allowable range (15-30% for SCMs and no more than 94 lb for cement)	No maximum limit yet as long as within the allowable gradation limits	No maximum limit yet as long as within the limits specified on the APL/QPL
Wyoming	2%	2%	2%

Q13: How did Contractor's react to trial batching requirements?

Answered: 30 Skipped: 4

How people feel:



Contractor reactions to trial batching requirements were mixed. Many noted that trial batching is standard practice and generally accepted, though some contractors express concerns when it impacts schedules or limits flexibility. A few mentioned issues related to material costs and variability in contractor adoption. Some respondents indicated no significant issues, while a minority reported negative sentiment or were unsure. Overall, trial batching is widely implemented, with most contractors adapting, though some challenges remain regarding flexibility and project timelines. Responses varied in detail and sentiment.

Q13: How did Contractor's react to trial batching requirements?

Answered: 30 Skipped: 4

State	Comments
Colorado	I don't know. These were implemented in the 1980s when CDOT swapped from in-house mix designs to contractor mix designs.
Florida	Contractor is not involved with trial batches
Georgia	They had no issues as it is part of our requirements in the specification book.
Idaho	Nothing yet, but we probably need more requirements.
Illinois	generally think it's justified
Iowa	OK if paid
Kansas	Increased hatred of State Government.
Kentucky	Fairly positively.
Michigan	It has been a standard practice in Michigan for over 20 years. The change was made because our Industry Partners wanted to move away from MDOT provided prescriptive mix designs. After the initial adjustment period, it's been successful, though there are still times when request changes to our requirements.

Q13: How did Contractor's react to trial batching requirements?

Answered: 30 Skipped: 4

State	Comments
Minnesota	Material flexibility and cost is a concern for project specific mixes for producers.
Missouri	MoDOT is developing a PEM specification and currently discussing trial batching and field trial batching. The better contractors already conducting trial batching. Anticipating some contractors will have a negative reaction.
Montana	No real issues
Nevada	I am not sure as that was before my time. Trial batches have been required since at least our latest standard specifications from 2014.
New York	Seems to be OK.
North Carolina	Trial batching has been standard practice for mix designs for a long time.
North Dakota	Not required no reaction.
Oregon	Most of the time they are onboard, unless they are in a time crunch
Pennsylvania	Trial batching is required for PennDOT projects and is a part of doing business with the state.

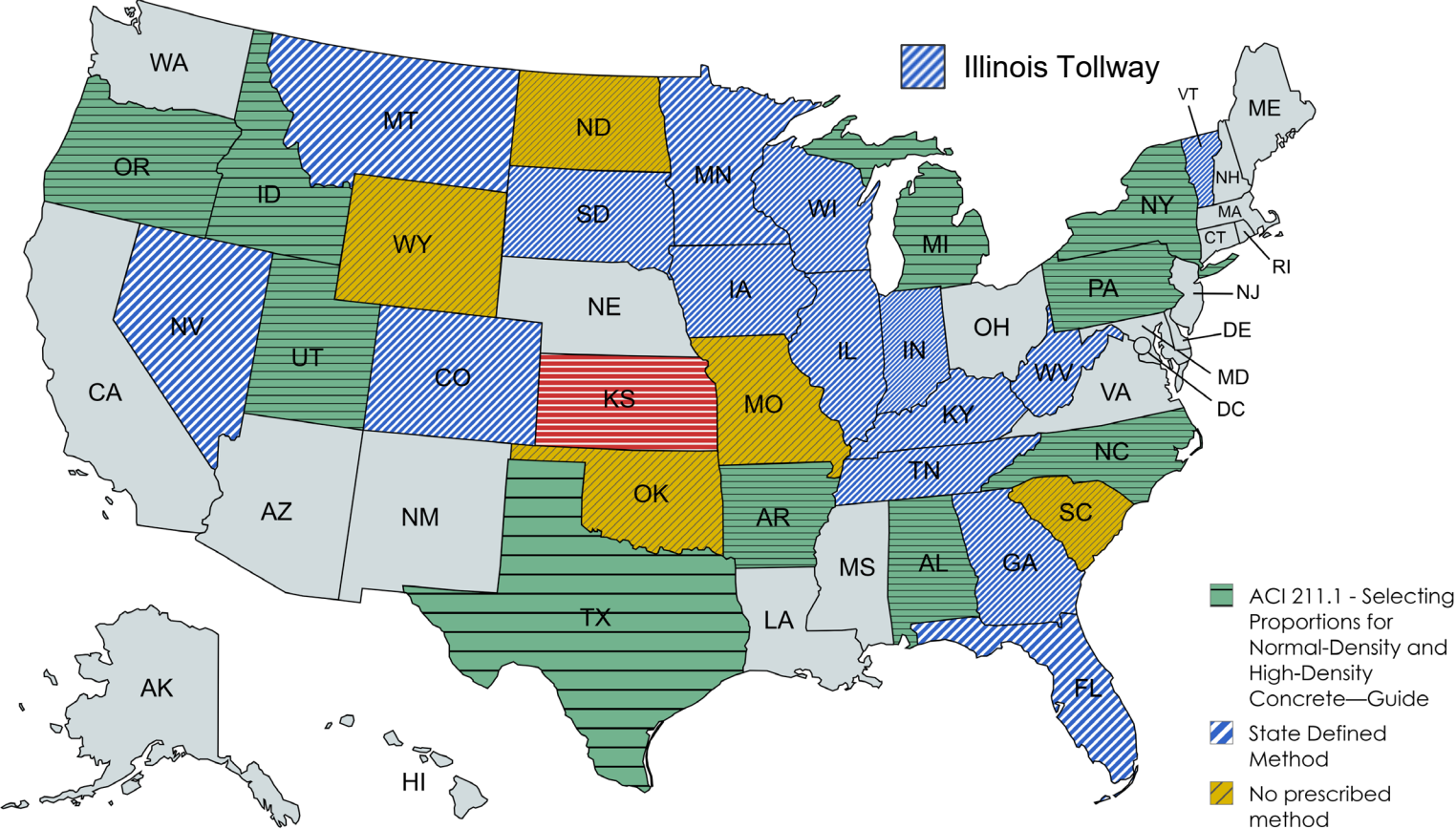
Q13: How did Contractor's react to trial batching requirements?

Answered: 30 Skipped: 4

State	Comments
South Carolina	Unknown.
South Dakota	Varies. They don't like if it affects schedule.
Texas	Trial batching has been a TxDOT requirement since 1972.
Utah	They want the trial batch's to be good for more years. They would like more flexibility.
Vermont	They typically request to skip it. Some reasons could be they didn't see it in the plans and didn't bid it that way, they have familiarity with the mix, or they just don't want to.
West Virginia	varied
Wisconsin	Ready-mix wants trail batching removed.
Wyoming	So far, it's been pretty well received.

Q14: Do you follow a standard protocol for trial batching requirements?

Answered: 32 Skij



Q14: Do you follow a standard protocol for trial batching requirements?

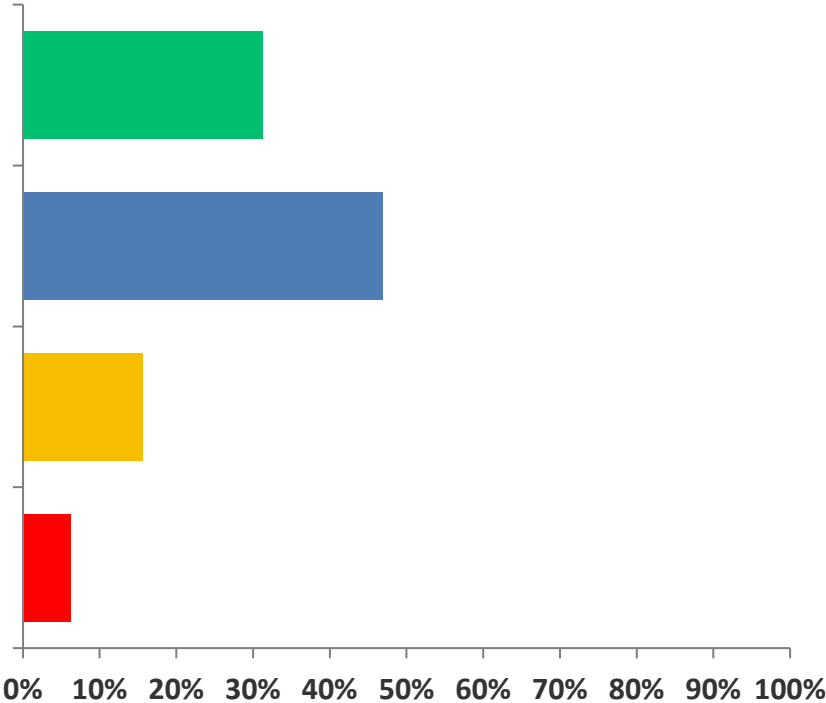
Answered: 32 Skipped: 2

ACI 211.1 - Selecting Proportions for Normal-Density and High-Density Concrete—Guide

State Defined Method

No prescribed method

Other



Q14: Do you follow a standard protocol for trial batching requirements?

Ansv	State	Comments
	Colorado	Section 601.05 at https://www.codot.gov/business/designsupport/cdot-construction-specifications/2025-construction-specifications/specs-book/2025-cdot-specs-book.pdf
	Florida	https://www.fdot.gov/specifications/material-manual FDOT Materials Manual 9.2 Volume 2
	Georgia	https://www.dot.ga.gov/PartnerSmart/Business/Source/specs/2021StandardSpecifications.pdf
	Illinois	See Section 10 in our PCC Level III Technician course manual which details our mix design method: https://www.lakelandcollege.edu/wp-content/laker-documents/as/idt/CET%20039%20PCC%20Level%20III%20Course%20Manual%202425%20revised%20010125.pdf
	Illinois Tollway	Agency-defined trial batch procedure
	Indiana	https://www.in.gov/dot/div/contracts/standards/book/sep25/500-2026.pdf Section 501.06
	Iowa	plant mixed - minimum of 3 CY
	Kansas	method producer intends to use on game day
	Kentucky	It is laid out in our Kentucky Standard Specifications. https://transportation.ky.gov/Construction/Standard%20amd%20Supplemental%20Specifications/600%20Structures%20and%20Concrete%202026.pdf

Q14: Do you follow a standard protocol for trial batching requirements?

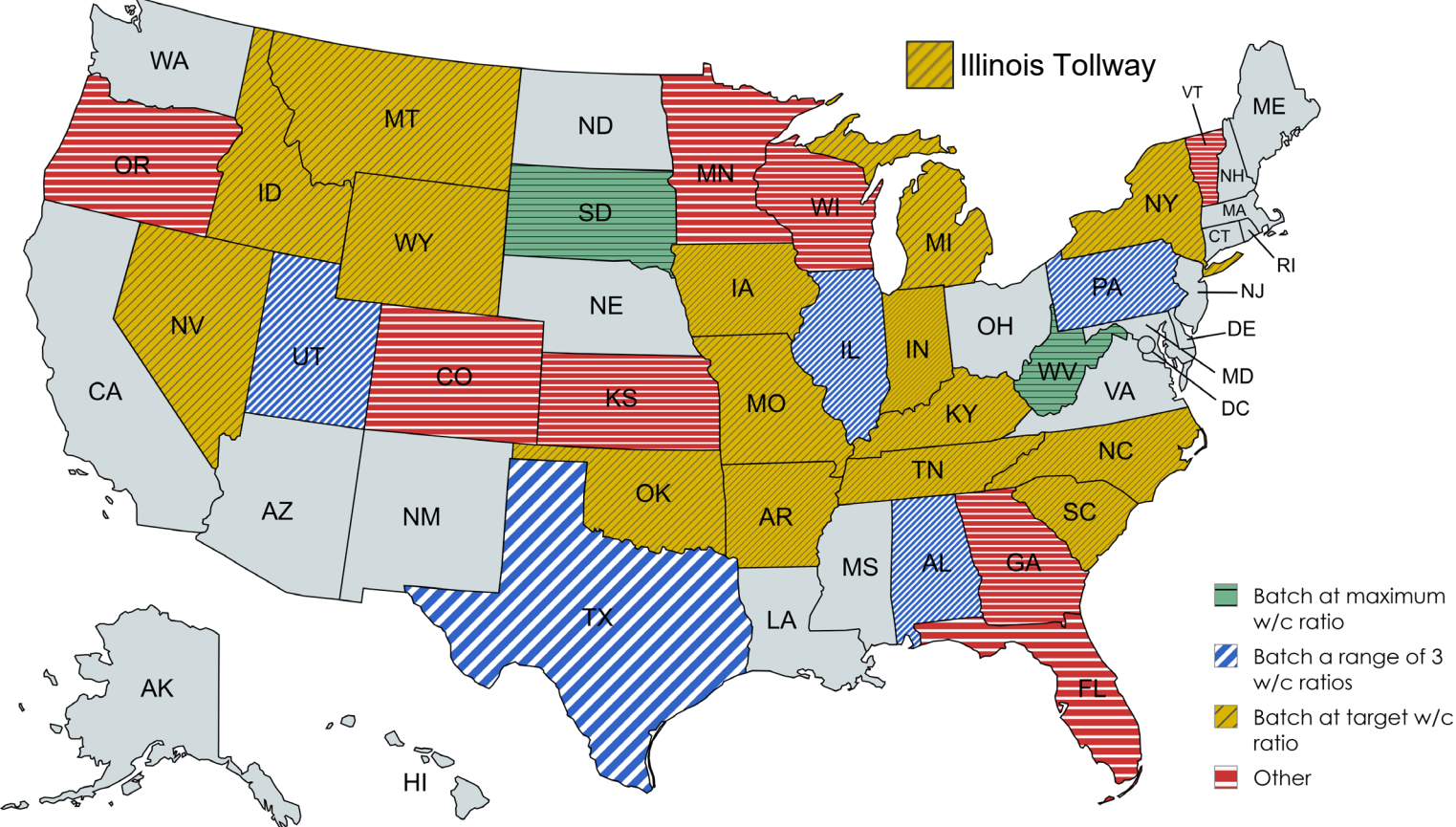
Answer

State	Comments
Minnesota	For general concrete, Level II mixes Spec 2461.2E.3.a For HPC, Mass and SCC concrete Spec 2401.2K.7.b and special provisions https://www.dot.state.mn.us/pre-letting/spec/index.html
Montana	https://www.mdt.mt.gov/publications/manuals/materials-man.aspx Section MT100
Nevada	Section 501.02.05 https://www.dot.nv.gov/home/showpublisheddocument/6916/636257041112930000
Oregon	We also cover ASTM C192 in the certification class.
Tennessee	https://www.tn.gov/content/dam/tn/tdot/hq-materials-tests/standard-operating-procedures/SOP_4-4.pdf
Vermont	Typically require a min amount to be batched and tests to be done.
West Virginia	https://transportation.wv.gov/highways/mcst/Material%20Procedures/2025%20MPs/SIGNED_711.03.23-25.pdf
Wisconsin	715.2.1(3): https://wisconsin.gov/rdwy/stndspec/ss-07-15.pdf 710.4: https://wisconsin.gov/rdwy/stndspec/ss-07-10.pdf 715.2.2: https://wisconsin.gov/rdwy/stndspec/ss-07-15.pdf Material requirements: https://wisconsin.gov/rdwy/stndspec/ss-05-01.pdf

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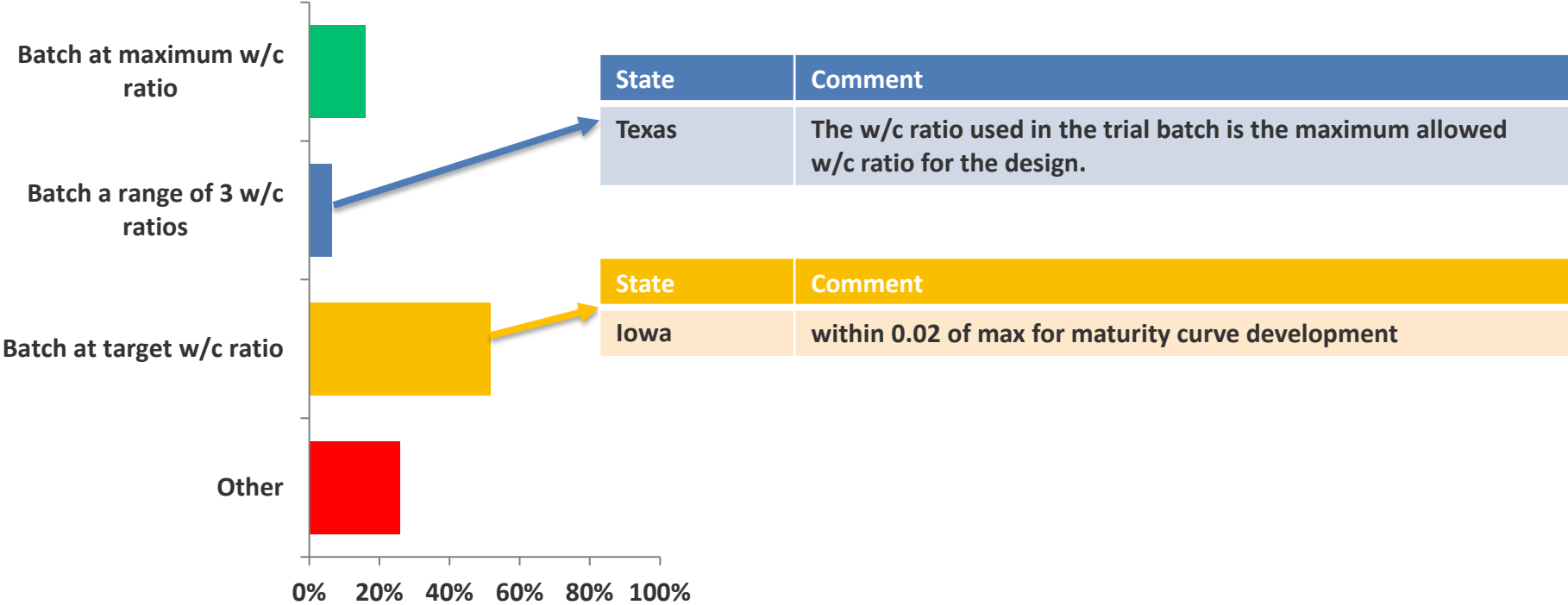
Q15: What does your Agency require when trial batching to evaluate w/c ratio?

Answered: 31 Skipped: 0



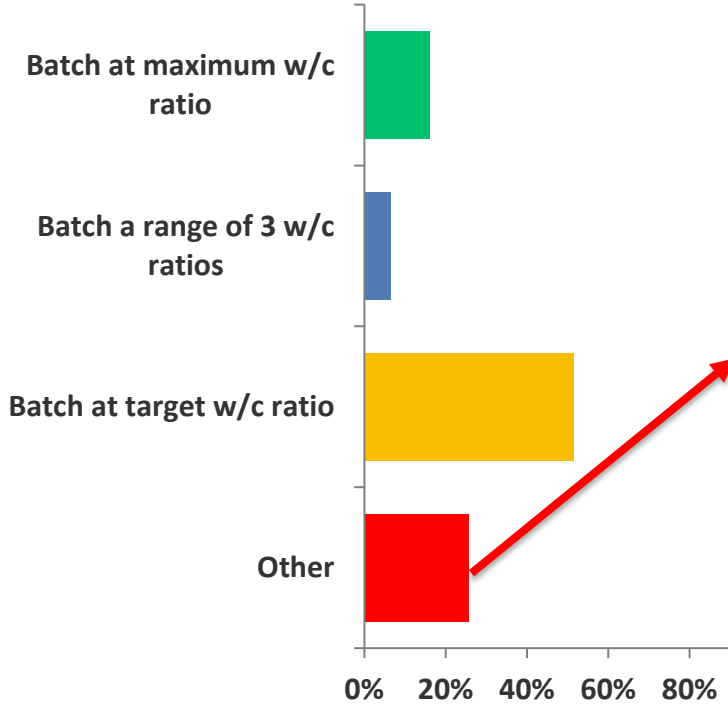
Q15: What does your Agency require when trial batching to evaluate w/c ratio?

Answered: 31 Skipped: 3



Q15: What does your Agency require when trial batching to evaluate w/c ratio?

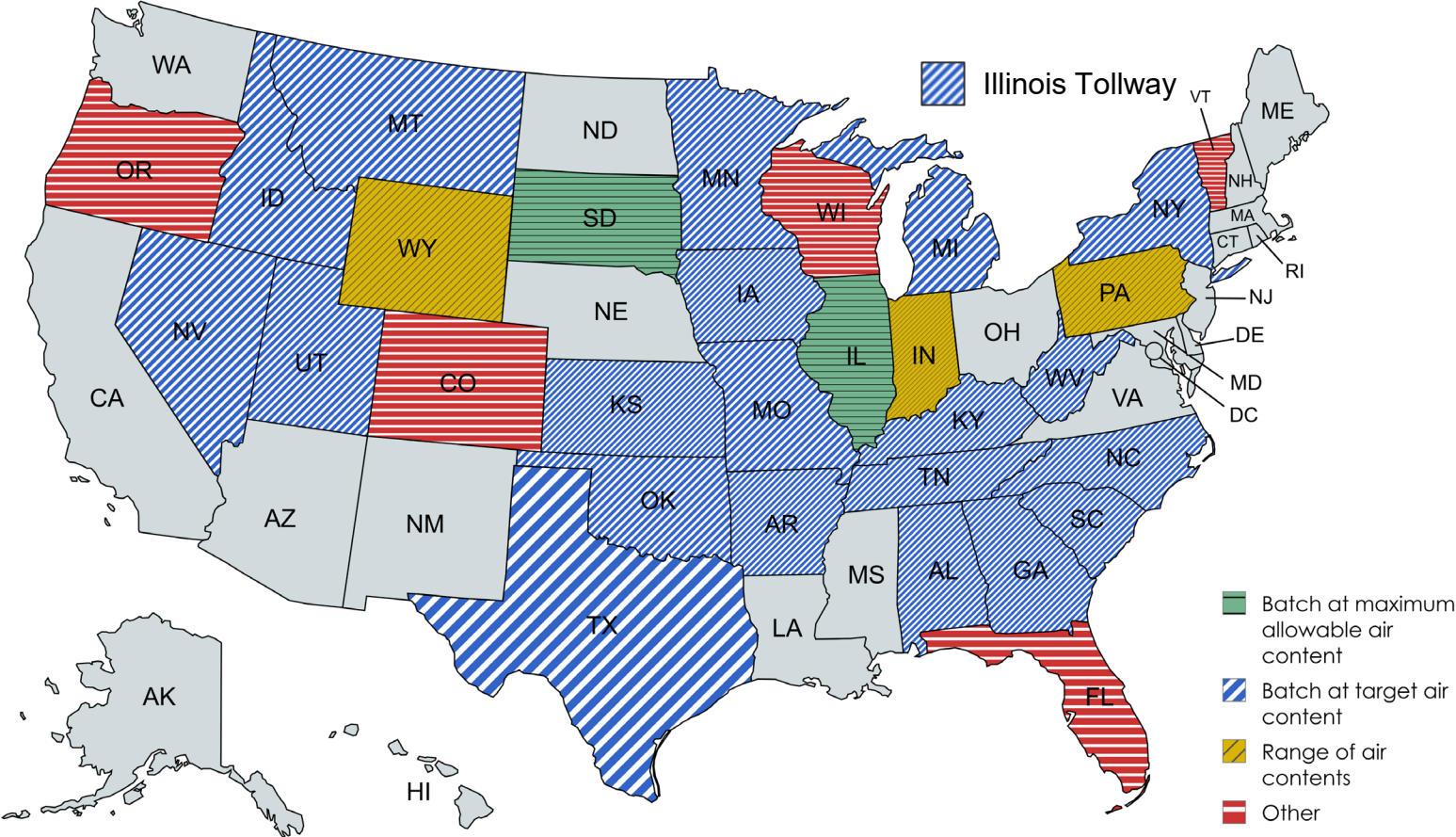
Answered: 31 Skipped: 3



State	Comment
Colorado	The w/cm ratio during the trial batch is the maximum w/cm ratio during placement
Florida	Producer is allowed to batch at any w/cm ratio per the class of concrete they are submitting for.
Georgia	They must not exceed the max water/cement ratio listed in the specification book for the mix design being used.
Minnesota	They are allowed to batch at any w/c ratio within the specification.
Oregon	Batch within tolerance which is +/- 0.03 of the design target but cannot exceed the spec maximum.
Vermont	We interpret trial batch to be done after mix is approved but before job production is started in which max w/c or less to be used. Qualification batch is used in the mix design approval process in which we require max w/c to be used.
Wisconsin	Pavements: at least 3 pairs of cylinders from 3 separate trial batches to demonstrate the compressive strength of a mix design that would be used for the project Structures: ACI 301 - Specifications for Structural Concrete - subsections 4.2.3.1 through 4.2.3.4 (range of 3 w/cm ratios)

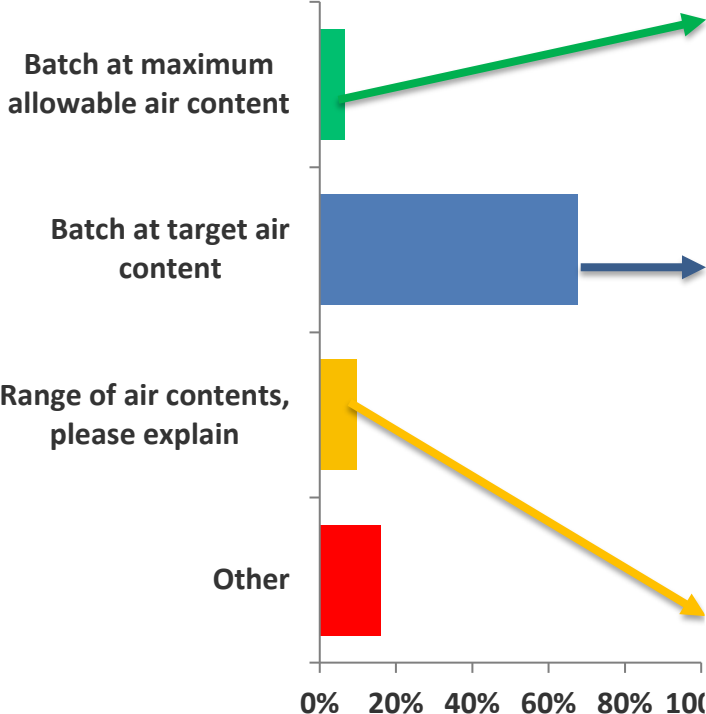
Q16: What does your Agency require when trial batching to evaluate air content?

Answered: 31 S



Q16: What does your Agency require when trial batching to evaluate air content?

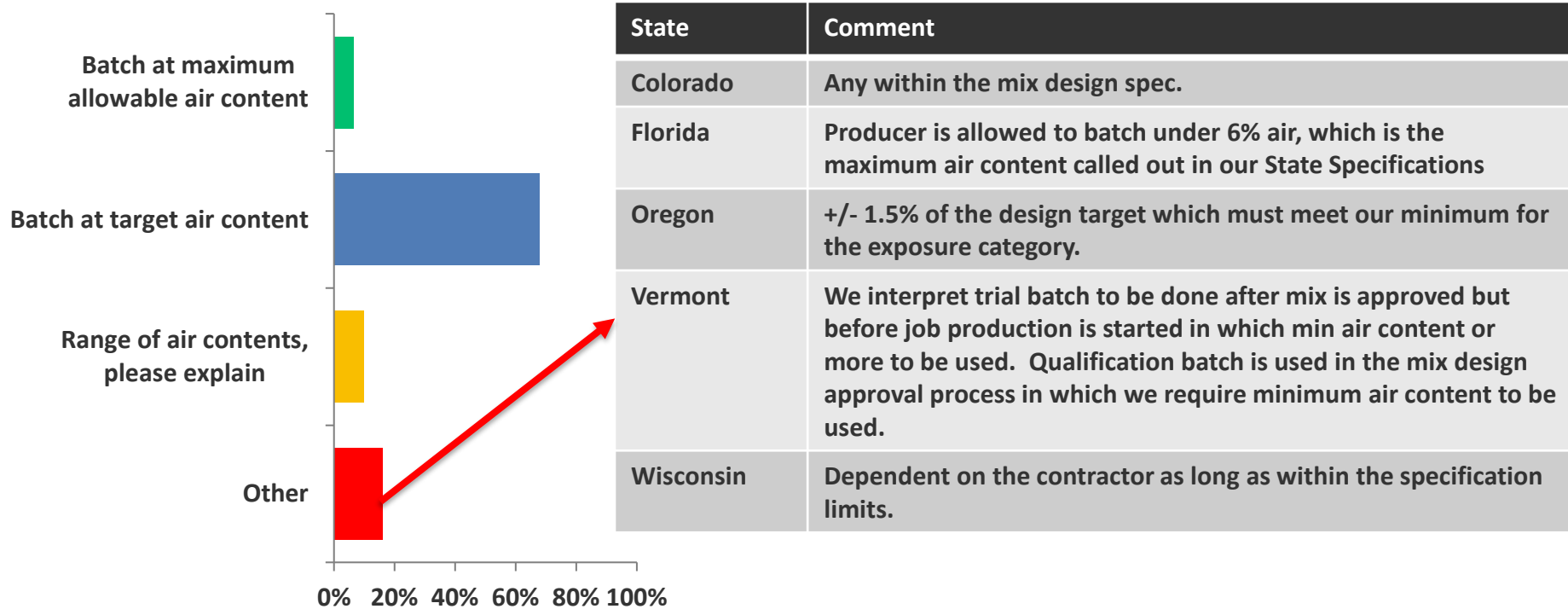
Answered: 31 Skipped: 3



State	Comment
Illinois	Batch within 0.5% of max (8%)
State	Comment
Iowa	Target within spec range
Kentucky	Specification calls for 6±2% unless otherwise called for in the standard specifications.
Texas	Air entrainment is not required for most placements. When required, the target air content must meet specification requirements and the trial batch must demonstrate the ability to meet specification requirements.
State	Comment
Indiana	Air must be within 5.5% to 10.0%
Pennsylvania	Conventional 6.0% +/- 1.5% or 2.0% Non-Conventional 7.0% +/- 1.5%
Wyoming	As long as air is in spec (4.5 - 7.5) trial batch will be accepted.

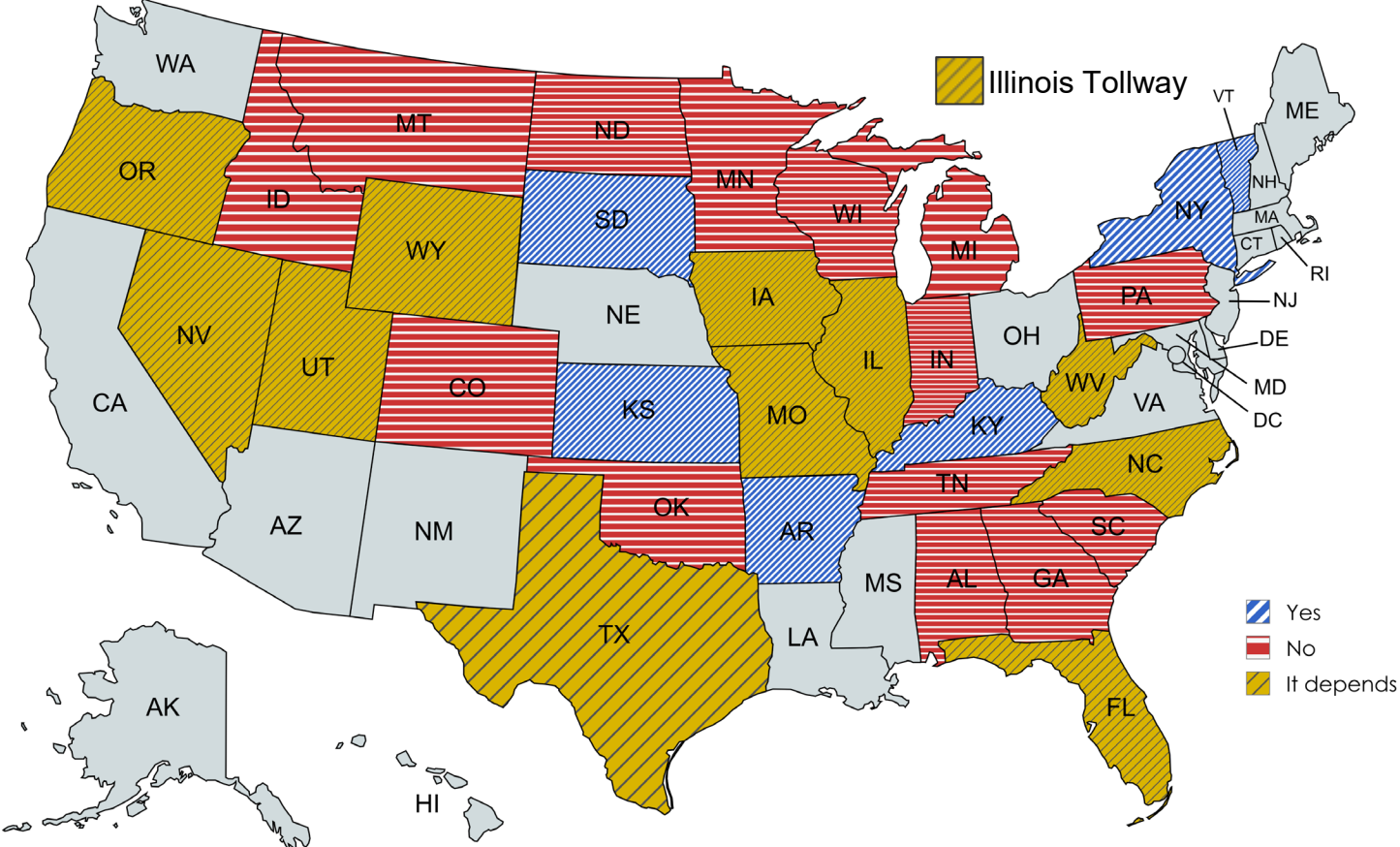
Q16: What does your Agency require when trial batching to evaluate air content?

Answered: 31 Skipped: 3



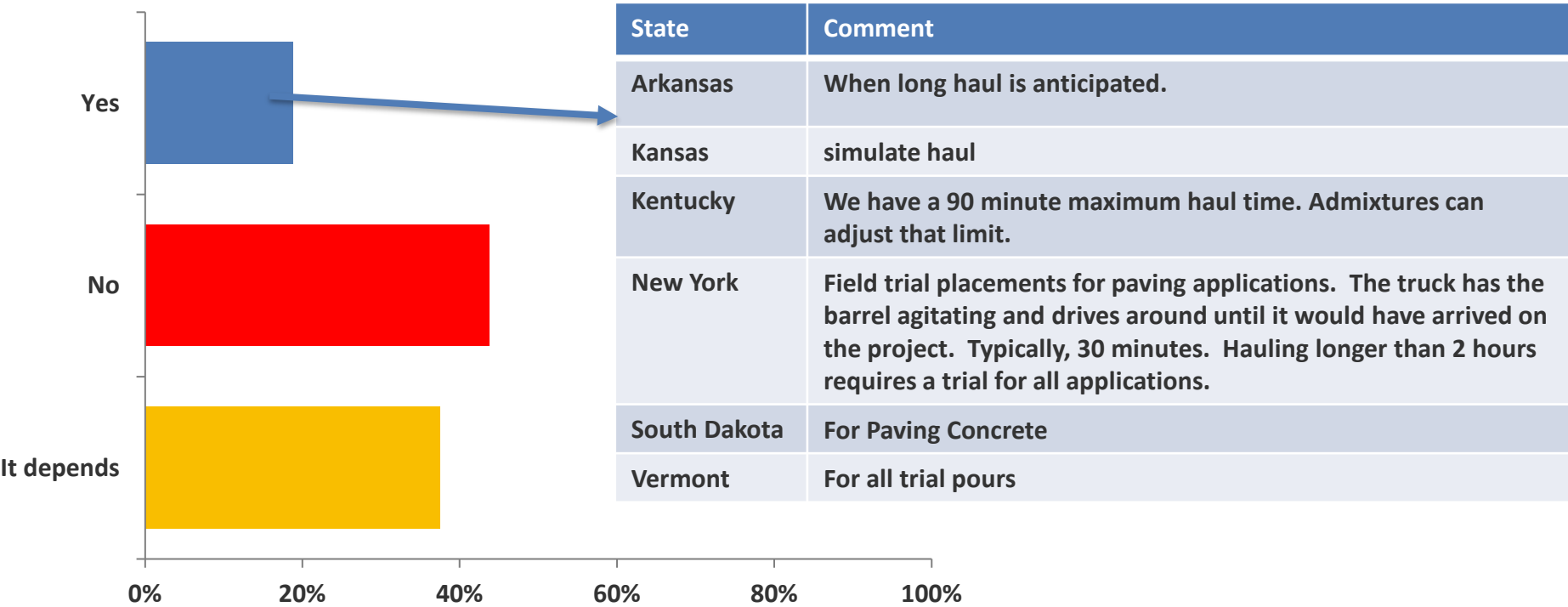
Q17: Does your Agency require simulated haul time for trial batches? If yes, what types/grade/class of concrete or which elements and what is your acceptance criteria?

Answered: 32 Sk



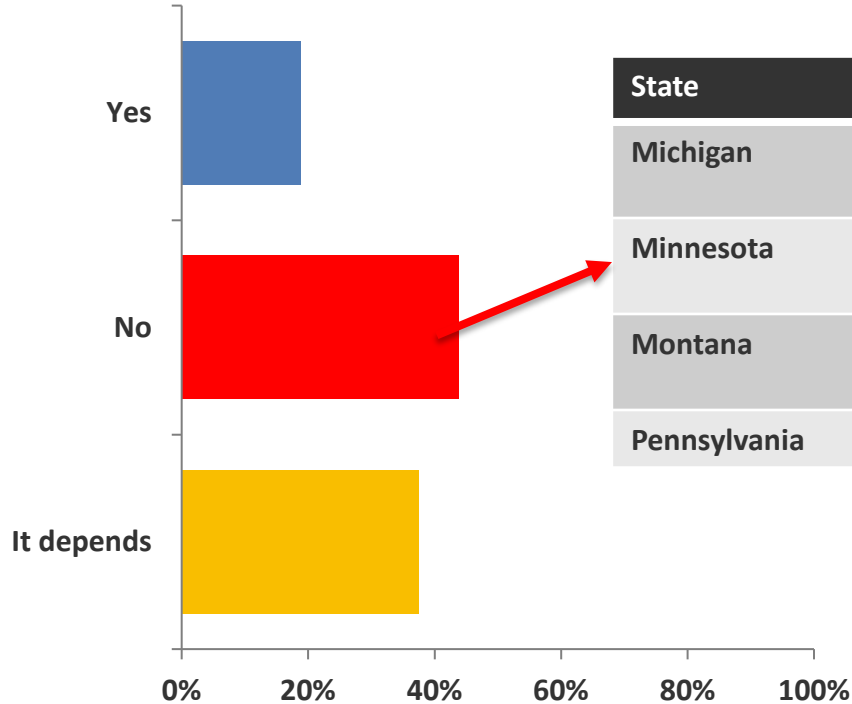
Q17: Does your Agency require simulated haul time for trial batches? If yes, what types/grade/class of concrete or which elements and what is your acceptance criteria?

Answered: 32 Skipped: 2



Q17: Does your Agency require simulated haul time for trial batches? If yes, what types/grade/class of concrete or which elements and what is your acceptance criteria?

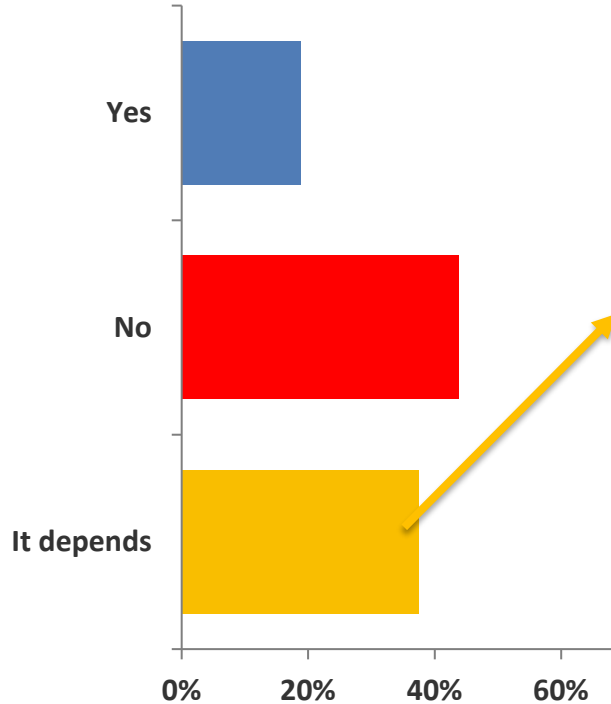
Answered: 32 Skipped: 2



State	Comment
Michigan	Simulated haul time would be part of a field placement trail (if required).
Minnesota	Simulated haul time is required for delivery beyond 90 minutes up to 120 minutes either through trial batching in a lab or a the supplier
Montana	Some suppliers will simulate for their own information but not required by MDT
Pennsylvania	Contractor's choice.

Q17: Does your Agency require simulated haul time for trial batches? If yes, what types/grade/class of concrete or which elements and what is your acceptance criteria?

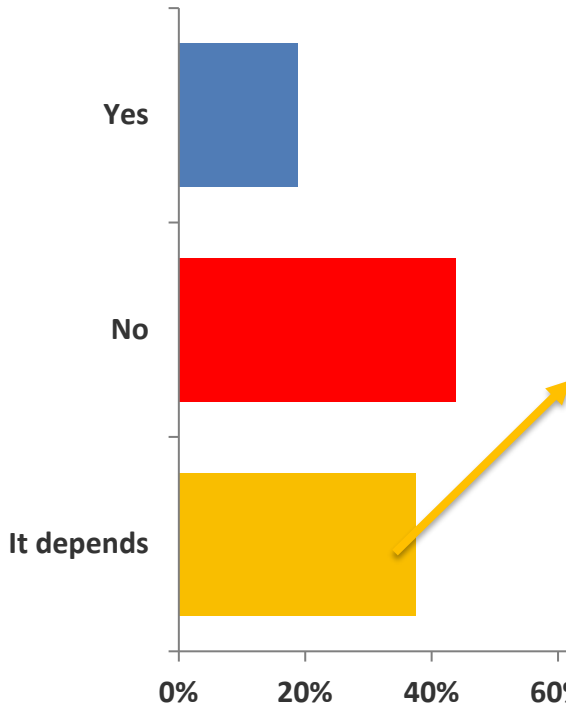
Answered: 32 Skipped: 2



State	Comment
Florida	It depends on all classes based on if the mix is simulated for hot weather conditions, slump must maintain the target slump after the simulated time per temperature.
Illinois	This may come into play if the superplasticizer is possibly going to be added at the plant instead of on the jobsite.
Illinois Tollway	Simulated haul time is conducted for HP and MC trial batches, not for TL, AX, or CAL.
Iowa	It depends of if a long haul is expected and if materials used may be time dependent on workability
Missouri	Have simulated haul time when evaluating a new type of concrete mix or silica fume concrete.
Nevada	Only when time extensions are requested to go past the standard 90 minute allowance to simulate extended time results
North Carolina	This is project specific and depends on the haul time. The goal is to have the required fresh properties when the concrete arrives at the project, otherwise it will be rejected.
Texas	Only when determining slump loss for long hauls or mass pours.

Q17: Does your Agency require simulated haul time for trial batches? If yes, what types/grade/class of concrete or which elements and what is your acceptance criteria?

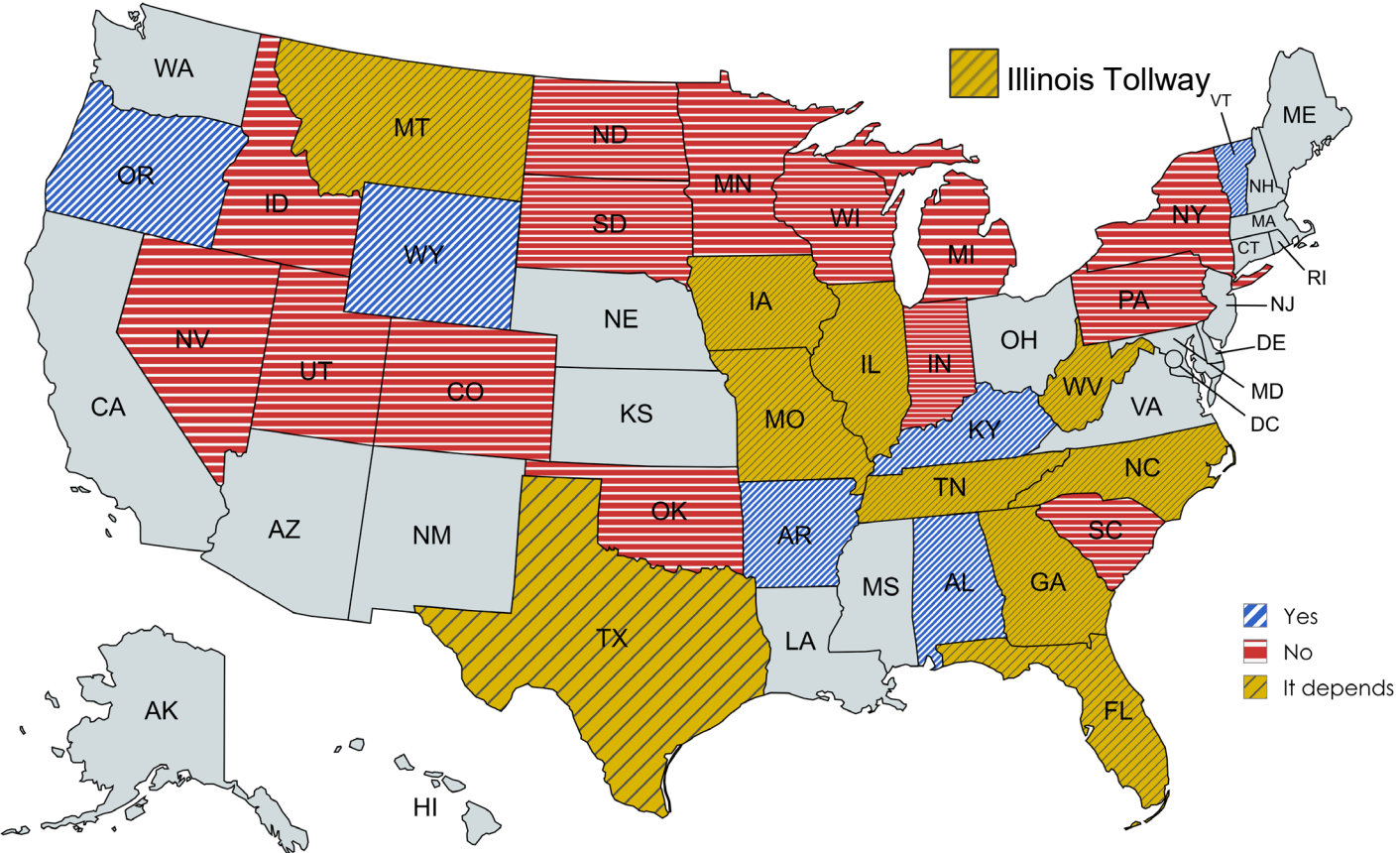
Answered: 32 Skipped: 2



State	Comment
Oregon	We have had this debate over the years. What we have found is it is best to stick with laboratory timing for lab trial batches and not try to replicate any field conditions. Then when the pour date gets closer run a truck trial batch to simulate haul time and dial in the admixtures.
Utah	Accelerators and Hydration stabilizers don't need a new trial batch. Longer haul times do need a trial batch.
West Virginia	Specialized Concrete Overlays (Slab Reconstruction): At least one week before any specialized concrete overlay is placed, the Contractor must produce one or more trial batches of the size to be hauled or mixed at the site. This trial must explicitly simulate transportation and job site conditions, utilizing the proposed materials, placement, finishing, and curing methods. Extended Haul Times (Hydration Control Stabilizing Admixtures): If a project requires an extended concrete discharge time (up to 3 hours) due to excessive haul times to remote locations, a hydration control stabilizing admixture may be used. To gain mix design approval for this extended time, the mix must undergo specific extended discharge time testing to simulate the long haul and wait. During the trial batch, air content and slump tests are performed initially and then repeated at 45-minute intervals until a period of 3 hours has elapsed after mixing.
Wyoming	If stabilizer is used for haul time, haul distance simulation is required for bridge and pavement concrete.

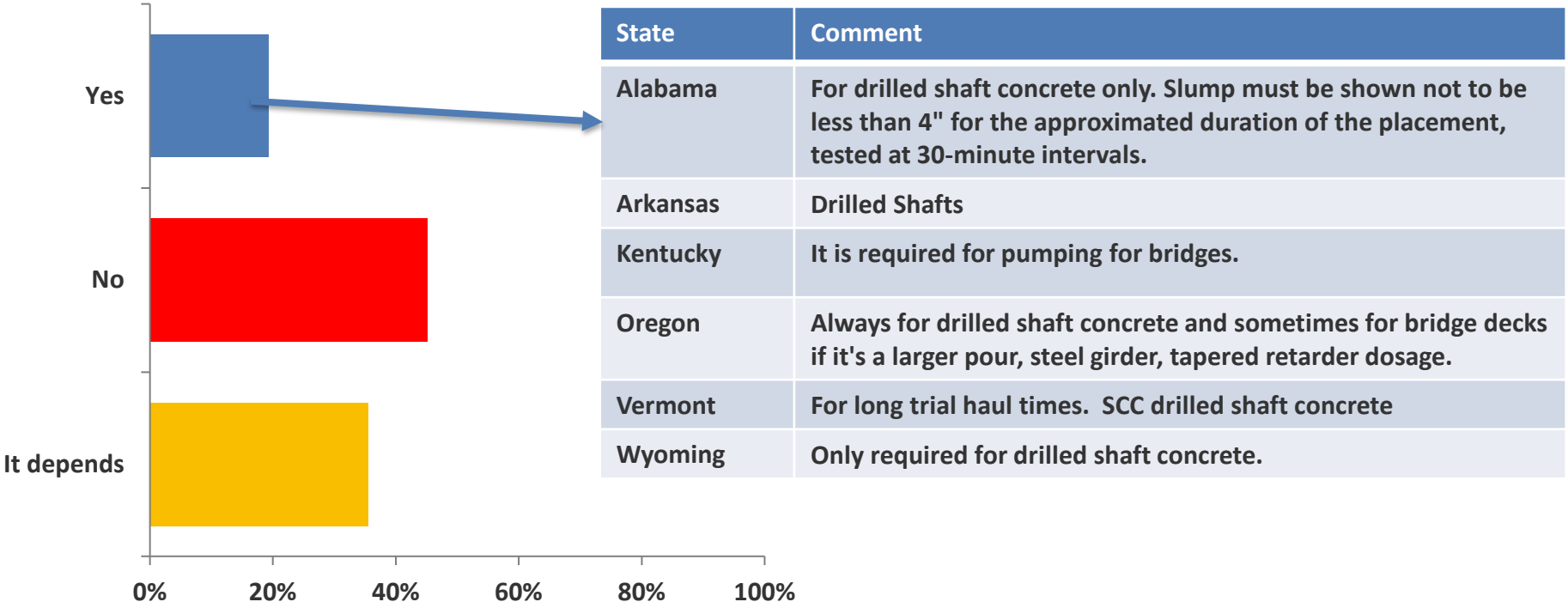
Q18: Does your Agency require slump loss measurements when trial batching? If yes, what types/grade/class of concrete or which elements and what is your acceptance criteria?

Answered: 31 Skip



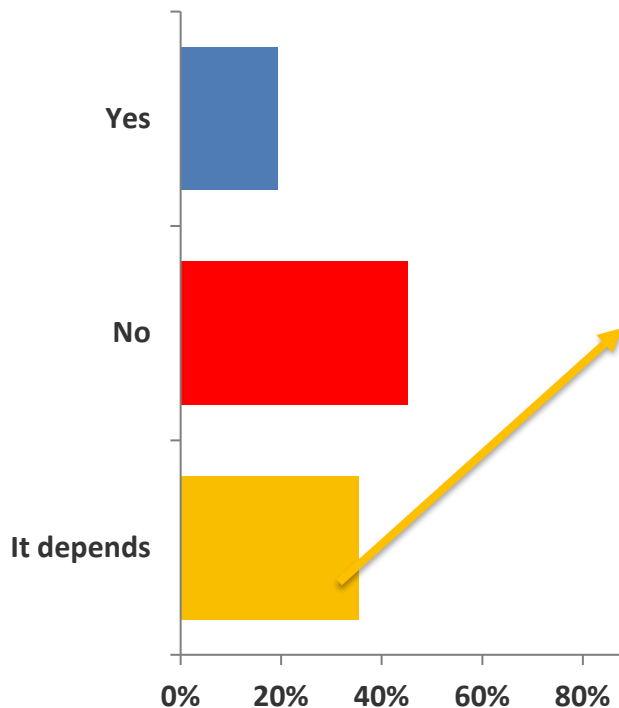
Q18: Does your Agency require slump loss measurements when trial batching? If yes, what types/grade/class of concrete or which elements and what is your acceptance criteria?

Answered: 31 Skipped: 3



Q18: Does your Agency require slump loss measurements when trial batching? If yes, what types/grade/class of concrete or which elements and what is your acceptance criteria?

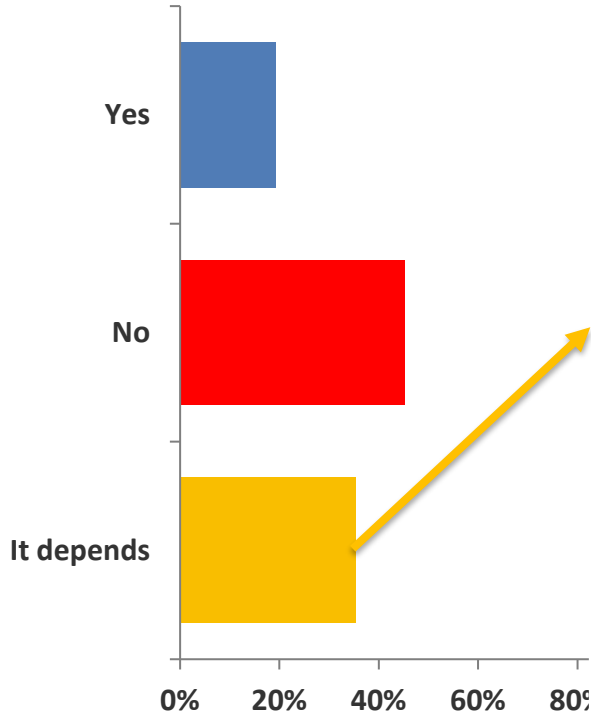
Answered: 31 Skipped: 3



State	Comment
Florida	Slump loss is required for drilled shafts, SCC, and flowing concrete. Drilled shaft concrete must maintain above 5 inches slump, and SCC/flowing is used to calculate a cutoff time for placement.
Georgia	Slump loss testing is only done when the contractor requests to extend the time for a Caisson pour.
Illinois	Drilled shaft construction has slump retention requirements: remain fluid throughout the anticipated duration of the pour plus one hour.
Illinois Tollway	Slump loss evaluation is conducted for HP and MC trial batches, not for TL, AX, or CAL. Acceptable loss is 2" max within any 20 minute period and 3" max overall. Slump is evaluated after batching/final adjustment, at 20 minutes and at 45 minutes
Iowa	In situations where the concrete is to remain plastic during placement.
Missouri	Will evaluate slump loss when evaluating a concrete mix for use in drilled shafts.
North Carolina	Not typically, but this may be project specific and would certainly be dependent upon haul time and environmental factors.
Tennessee	Slump loss measurements required when trial batching of SCC.

Q18: Does your Agency require slump loss measurements when trial batching? If yes, what types/grade/class of concrete or which elements and what is your acceptance criteria?

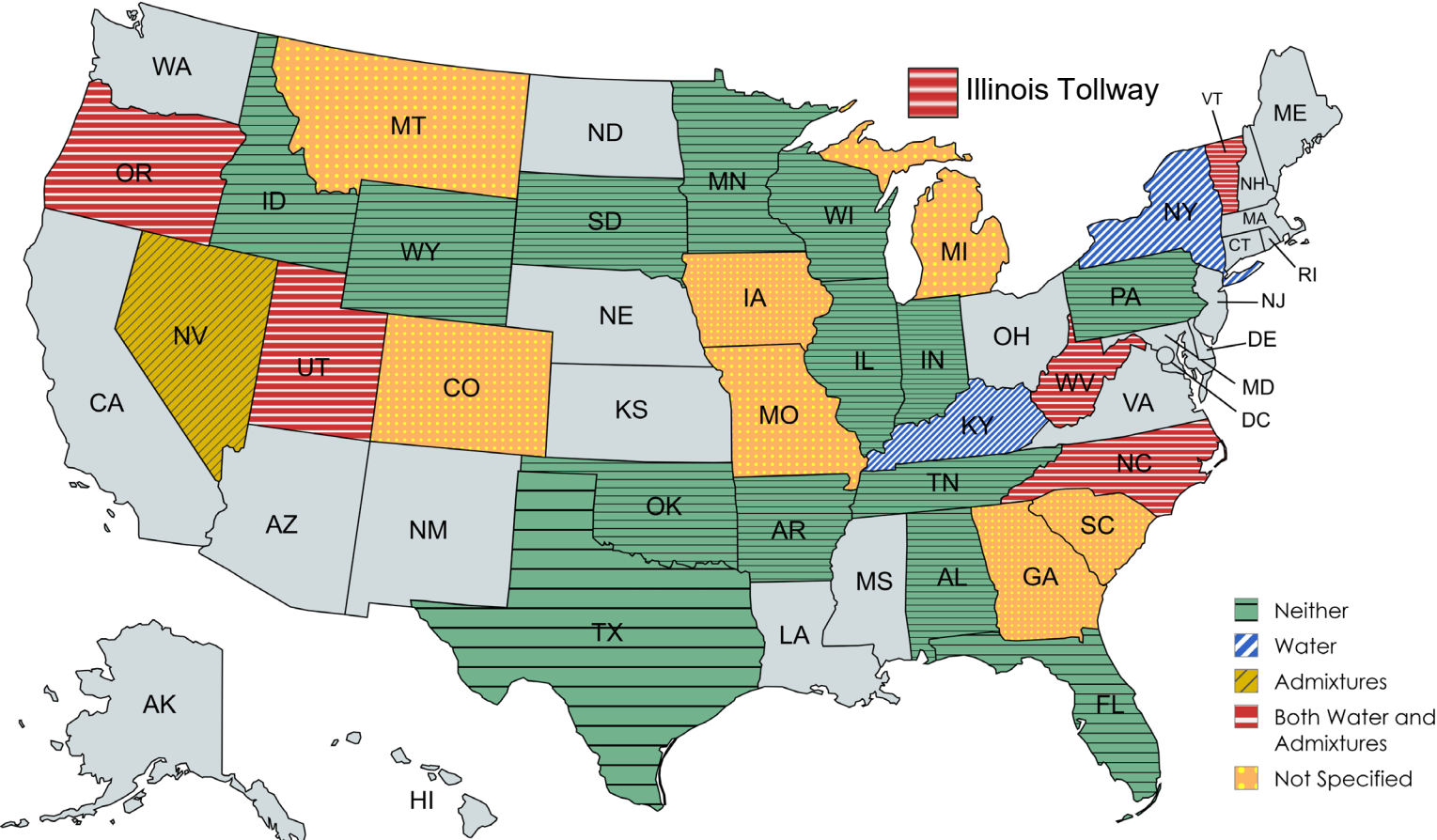
Answered: 31 Skipped: 3



State	Comment
Montana	For Class Drilled Shaft we require slump retention data to be included with the mix design based on the following: -Set a target slump no lower than 8". Do not lace drilled shaft concrete having a slump of less than 7" -Include with the mix design an estimate of the maximum time from producing the 1st batch of concrete for a shaft to the anticipated completion of the shaft. All concrete used for drilled shaft must maintain a minimum of 6" slump until 2 hours after estimated completion.
Texas	Only for long haul and mass pour situations. Slump is tested every 30 minutes until slump measurement is 2" or less.
West Virginia	Extended Discharge Times (Hydration Control Stabilizing Admixtures): If a concrete mix design uses a hydration control stabilizing admixture to extend the allowable discharge time up to 3 hours, the mix must undergo specific "extended discharge time testing" During this trial, an initial slump test is performed, and the slump must then be re-measured at 45-minute intervals until a full 3 hours have elapsed To be approved, the slump measured at any point during this 3-hour period must not vary from the initial slump test by more than 1.75 inches . Self-Consolidating Concrete (Class S-P): SCC is measured by "slump flow" rather than a standard slump test. Even if an SCC mix initially meets all fresh property requirements, the Engineer can reject the mix and require a re-design if the mix exhibits insufficient retention of the slump flow throughout the duration of the concrete placement .

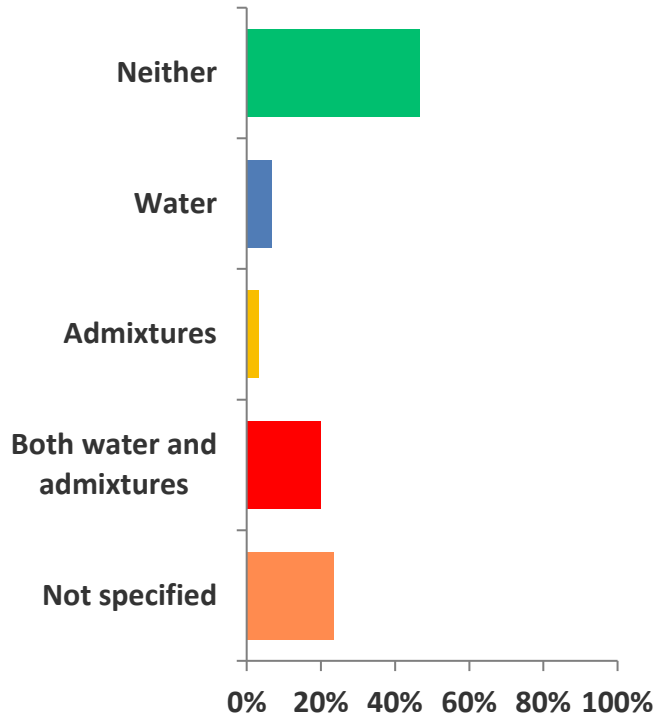
Q19: Is retempering with water or admixtures permitted for the trial batch?

Answered: 30 Sk



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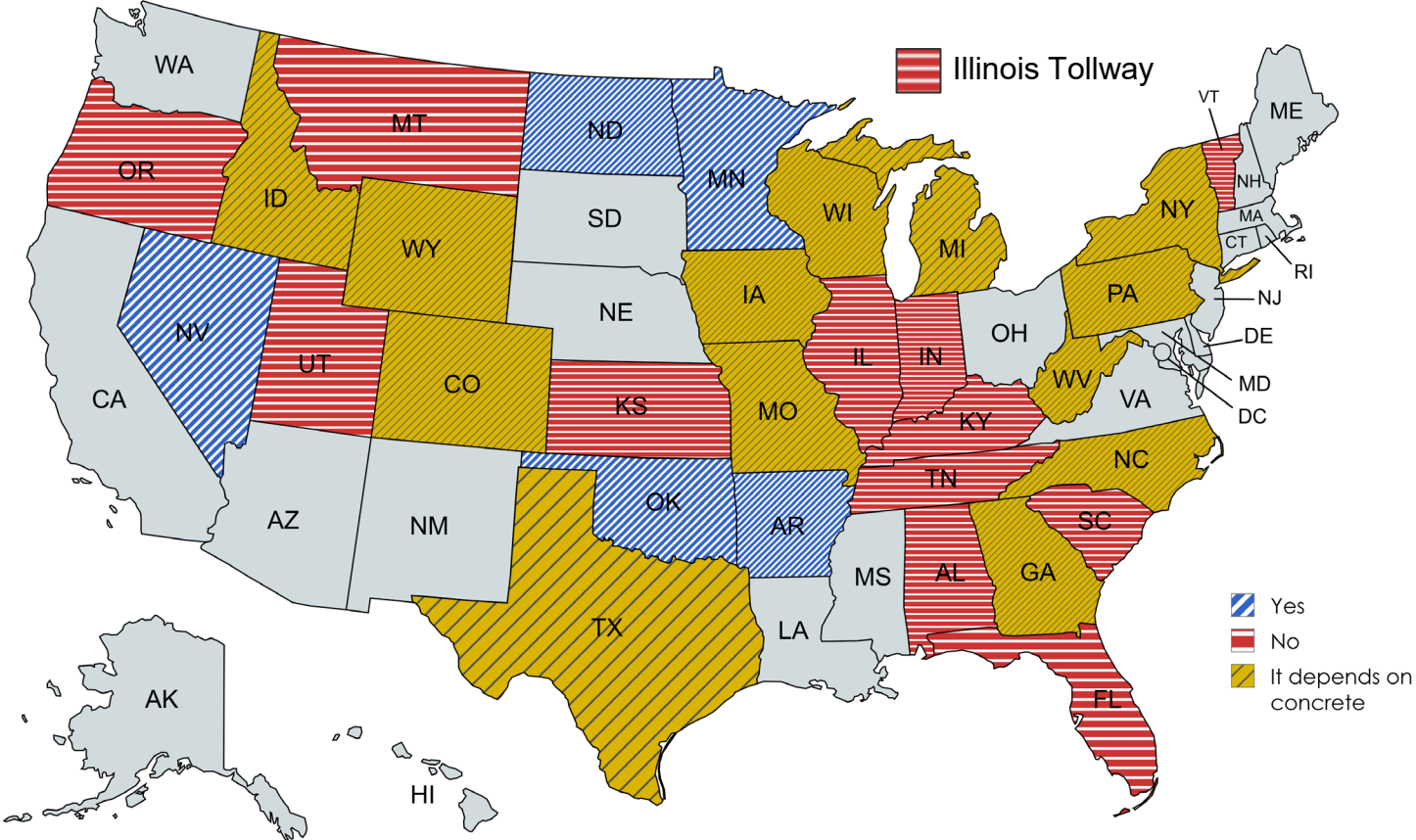
Answered: 30 Skipped: 4



State	Comment
Kansas	Trim water up to 2G/CY can be added back (leading cause for low breaks) batches can be retempered with air or WR one time
Kentucky	They are only permitted to do so with overrun.
Michigan	Michigan is silent on this. However, the trial batch and JMF need to match. So, by adding additional water or admixtures to the mix would deviate from the JMF thus requiring a modified JMF. Michigan would prefer this practice not be used.
Nevada	Plasticizers and air entraining admixtures only. No water
New York	Retempering with water is allowed as long as the w/c ratio isn't exceeded and placement hasn't started. Retempering with admixtures can be done for informational purposes. However, a new trial batch is needed with the adjusted admixture dosage through the automation system for the trial to be approved.
Utah	Just water and Air entrainers
Vermont	If it is before discharge. After discharge, some admixture adjustment allowed. This is trial mixes after the mix has been approved.
West Virginia	For Self-Consolidating Concrete, retempering with water is strictly prohibited.

Q20: Does your Agency allow field trial placements to be incorporated into the work?

Answered: 31 S



Q20: Does your Agency allow field trial placements to be incorporated into the work?

Answered: 31 Skipped: 3

Most states:

- Do not incorporate field trial placements into the work

Others:

- Allow incorporation depending on risk, concrete type, or special provisions

Testing during field trials often includes:

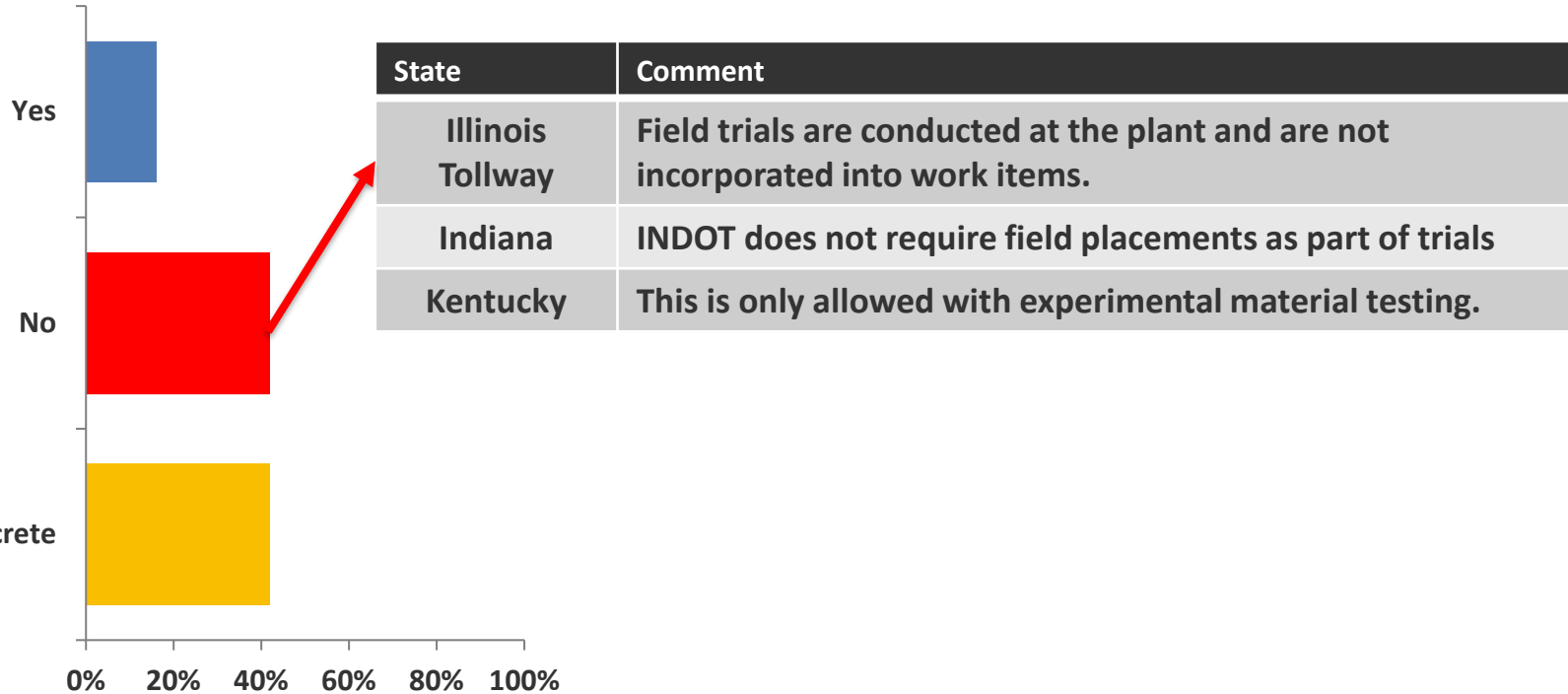
- Air content
- Slump/spread
- Strength
- Ability to finish
- Ability to pump
- SAM or box test for SCC



Microsoft 365
Copilot

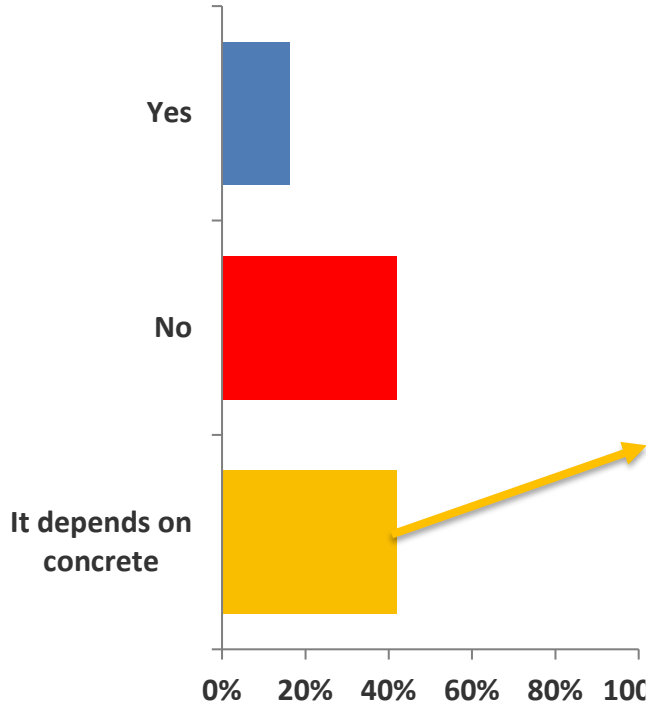
Q20: Does your Agency allow field trial placements to be incorporated into the work?

Answered: 31 Skipped: 3



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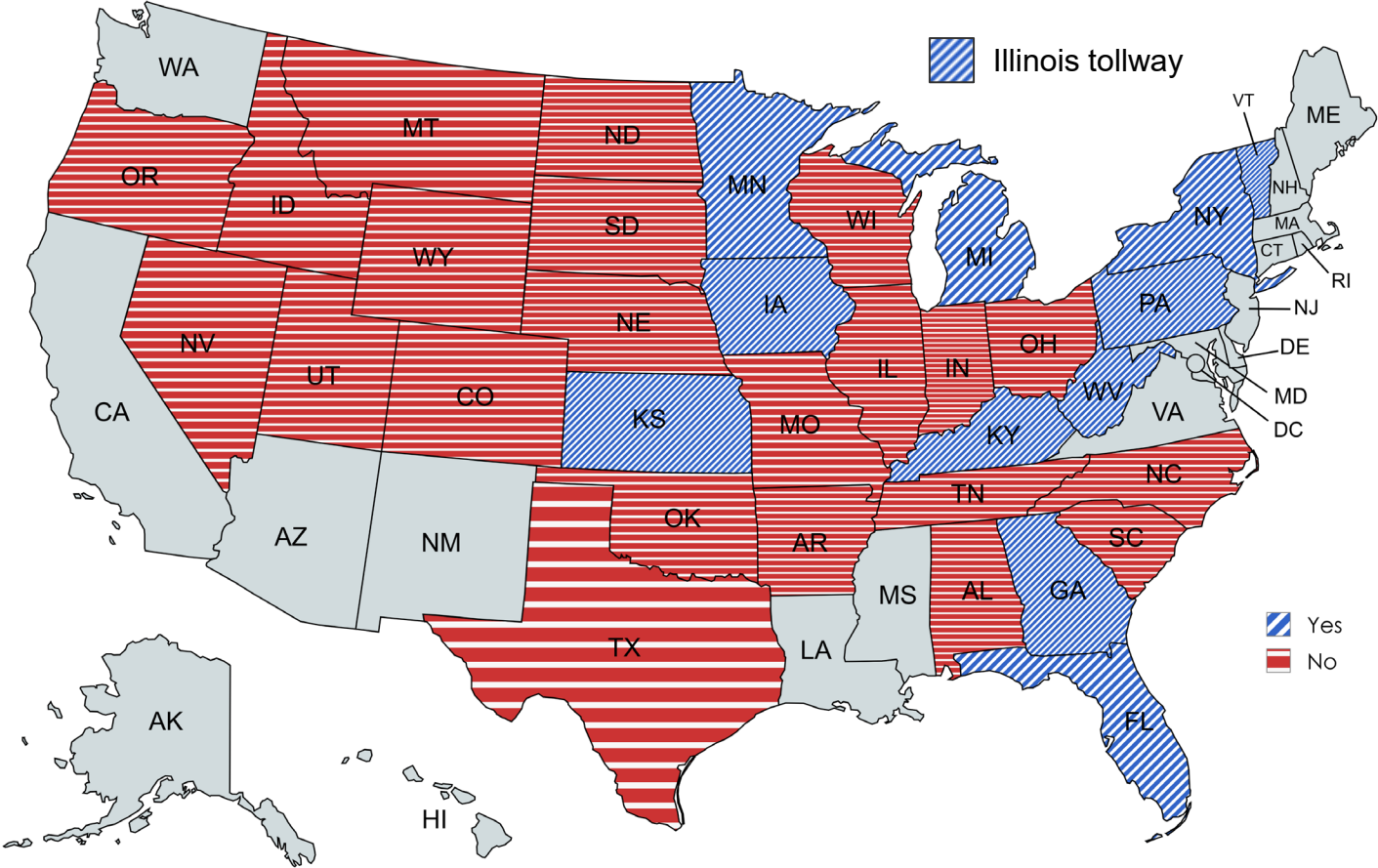
Answered: 31 Skipped: 3



State	Comment
Michigan	It depends on the special provision and the Engineer's judgment. It also depends on the type of work that is being replicated.
New York	Field trial slabs are required for pavements. The trial slabs are not included in the work. Field trials are not common for other applications but have been allowed if it benefits both the Department and the Contractor on lower risk applications. Non NYSDOT placements can be used as a trial placement if needed.
Pennsylvania	Field trail placement is at the discretion of the contractor.
Texas	Yes, as long as the concrete meets requirements.
Wisconsin	Only for structures per ACI 301
Wyoming	Only for pavement, bridge overlay and drilled shaft concrete field trials are not incorporated as they are rarely performed on-site.

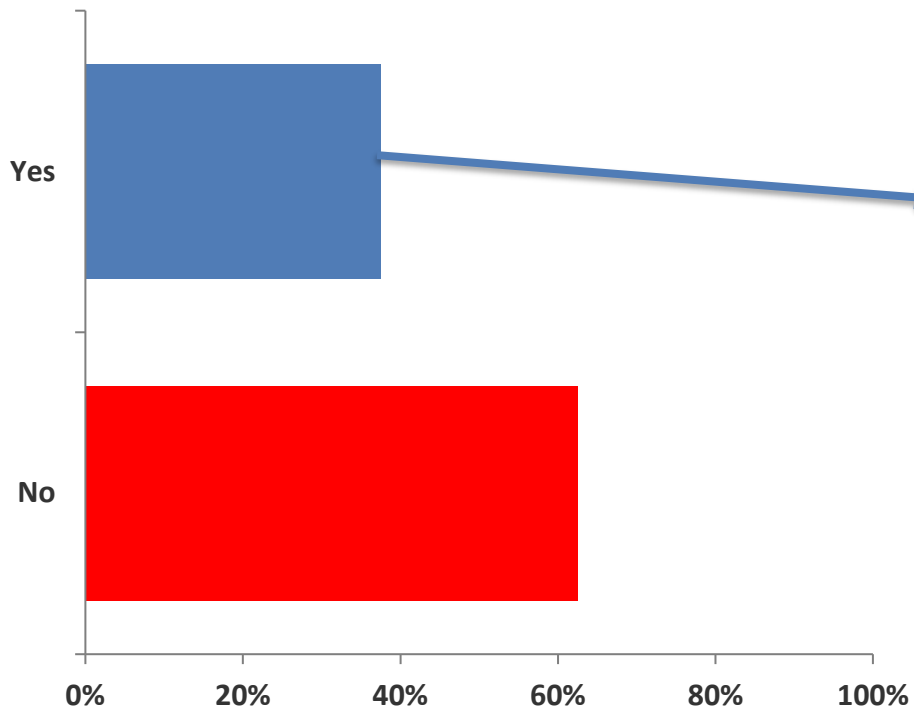
Q21: Does your Agency have a required minimum quantity to be batched for field trial placements?

Answered: 32 Skipper



Q21: Does your Agency have a required minimum quantity to be batched for field trial placements?

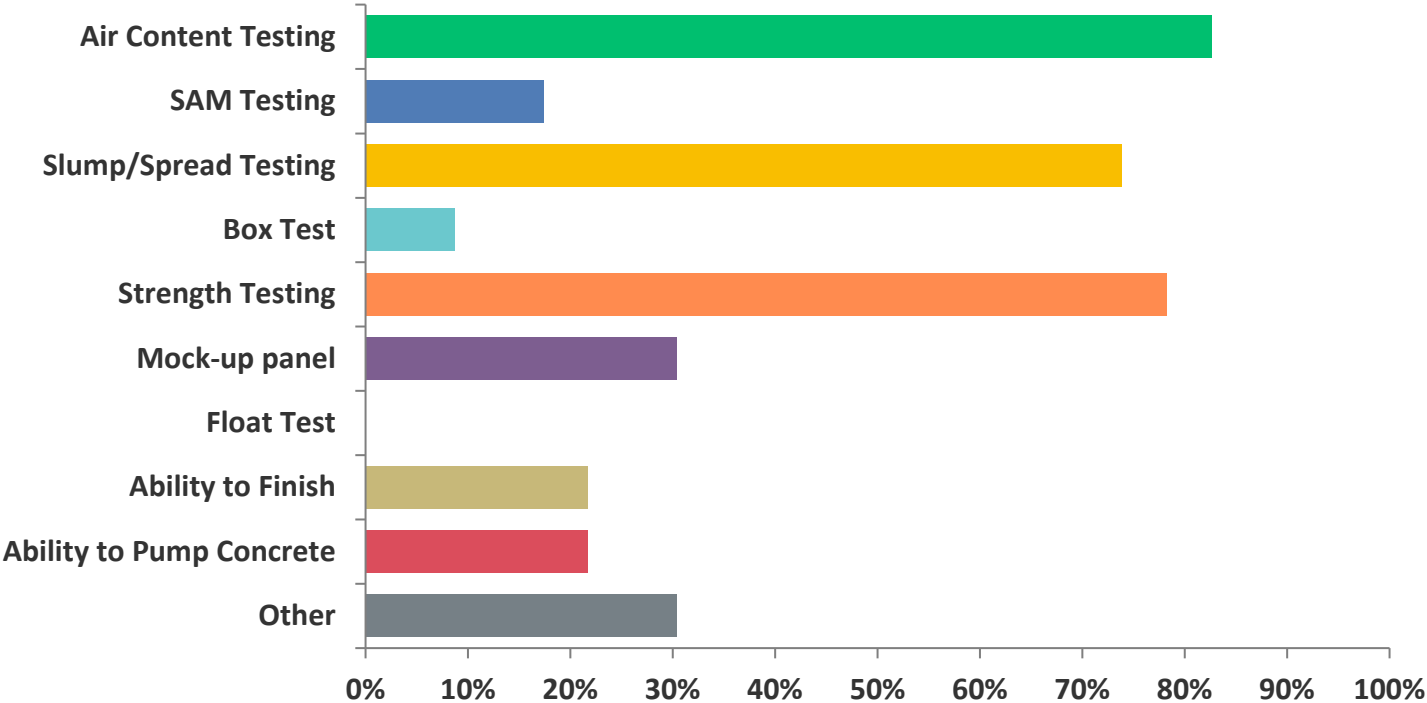
Answered: 32 Skipped: 2



State	Minimum Quantity
Florida	SCC/Flowing mockup requires three batches of 3 cubic yards.
Iowa	3 CY (plant-mixed), others may be 5 CY
Michigan	$\geq 4 \text{ yd}^3$ May require more depending on application/site conditions
Kentucky	Two 4- yd^3 loads
New York	4 yd^3
Minnesota	Two 10- yd^3 loads
Pennsylvania	1 yd^3 (precast/prestress only)
Kansas	6 yd^3
Vermont	3 yd^3
Illinois Tollway	4 yd^3
Missouri	Typically ask for ≥ 2 CY informally
West Virginia	Not specified (depends on placement)

Q22: What testing does your Agency require during field trial placements?

Answered: 23 Skipped: 11



Q22: What testing does your Agency require during field trial placements?

Answered: 23 Skipped: 11

State	Air Content	SAM	Slump/Spread	Box Test	Strength	Mock-up Panel	Ability to Finish	Ability to Pump
Alabama								
Arkansas	x		x		x			
Colorado	x		x		x			
Florida	x		x		x	x		
	Florida comment: Additional SCC/Flowing concrete tests run to verify no segregation							
Georgia	x		x		x			
Idaho	x		x		x			
Illinois								
Illinois Tollway	x	x	x		x			
Indiana								
Iowa	x	x		x	x	x	x	
Kansas	x		x		x			x

Q22: What testing does your Agency require during field trial placements?

Answered: 23 Skipped: 11

State	Air Content	SAM	Slump/Spread	Box Test	Strength	Mock-up Panel	Ability to Finish	Ability to Pump
Kentucky								
Michigan	x		x		x	x	x	x
Minnesota	x	x	x		x	x		x
Missouri	x		x		x	x	x	
Montana								
Nebraska								
Nevada	x		x		x	x		
New York	x	x	x	x	x			
North Carolina								
North Dakota								
Ohio								

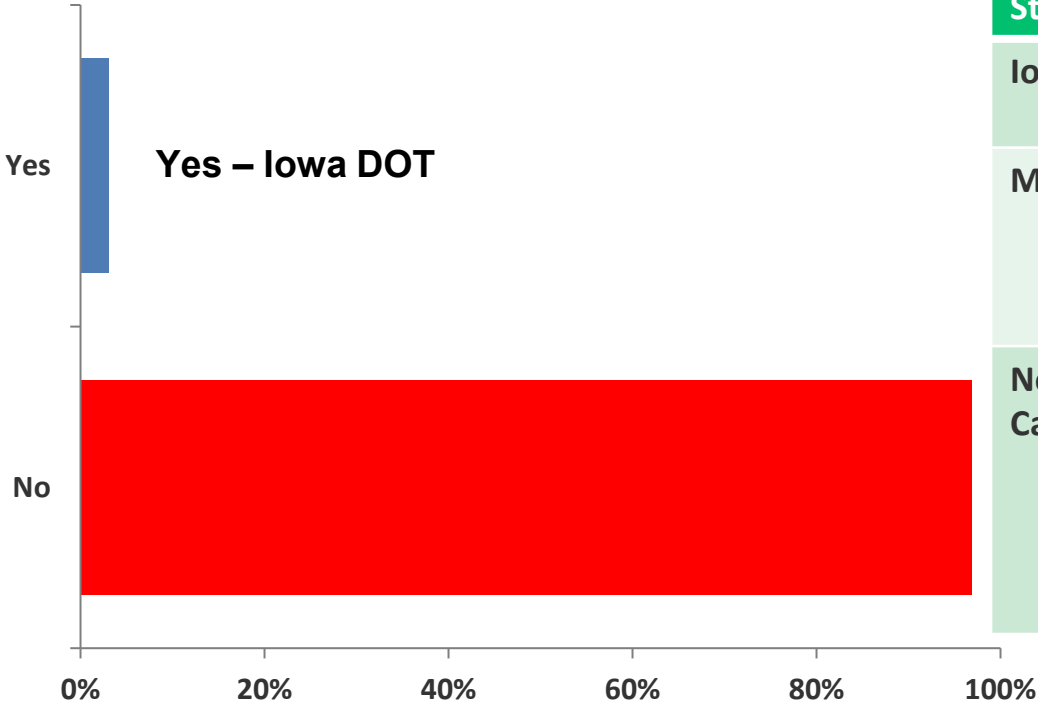
Q22: What testing does your Agency require during field trial placements?

Answered: 23 Skipped: 11

State	Air Content	SAM	Slump/Spread	Box Test	Strength	Mock-up Panel	Ability to Finish	Ability to Pump
Oklahoma	x		x		x			
Oregon	x		x		x			
Pennsylvania	Testing of fresh concrete in trial batch is at the discretion of the contractor.							
South Carolina								
South Dakota								
Tennessee								
Texas	x		x		x			
Utah								
Vermont	x						x	x
West Virginia	x		x		x	x	x	x
Wisconsin								
Wyoming	x		x		x			

Q23: Do you have a pay item for trial batching or field trial placements?

Answered: 32 Skipped: 2



State	Comments
Iowa	Trial batch item is included for some structural work
Michigan	Many added that trial batching is considered part of standard specification work and is not separately compensated
North Carolina	Not for trial batching. For field trial placements, maybe. Again, these aren't normally needed but this would be addressed on a case-by-case basis if a field trial placement was even required.

Q24: Any Additional Comments?

State	Comments
Idaho	Our trial batches usually only involve the supplier. The supplier designs to a maximum slump. They don't like it when the Contractor adds water in the field for workability because they didn't design it for a higher slump. We need the contractor involved in the trial batches too
Illinois Tollway	All component materials must be batched within IDOT batching tolerances. Adding partial loads to trucks to compensate for material shortages/overages ("Drying up" loads) is not permitted.
Kansas	Do you think A.I. will first make chickens or eggs?
Missouri	With the shift to Type IL cements, trial batching could be critical for avoiding potential field issues.
Oklahoma	Questions were answered based on field trial batching and not PC Concrete mix design submittal requirements.