

# Cure and stripping a green panel

**No panel comes out of the bed before 7 days have passed from the end of its pour.** Not six. Not "it feels hard". Seven days, and the cure log has to carry a temperature reading for every one of those days.

## The cure log: what you write down

- 1** The date and the **time the pour was finished** for that bed and slot.
- 2** The concrete temperature and the ambient temperature at placement, carried over from QF-09 Daily batch and density log.
- 3** The curing method that was applied, and whether it was still being maintained each day.
- 4** **The temperature at the bed, at least once every day**, off a calibrated instrument, with the time and your name.
- 5** Whether the enclosure or the heat was on.
- 6** The release date.

All six of those are **facts**. You write them whether or not anybody has told you what a good number looks like. Write the value, never a tick, including on the day it looks fine.

## What the readings get judged against

The accepted range is a **criterion**, and it is not a fact. It belongs to the engineer of record, it gets written on QF-07 Mix design record, and it is then copied into the header of every cure log. **Right now there is no range.** Check the header of the log in front of you: it either says a range, or it says NOT SET.

| What the log header says                                | What you do when a reading comes in                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A range, e.g. `__ F to __ F` from a mix design revision | Write the value. Mark the "in range" column <b>Y</b> or <b>N</b> . <b>If it is N: write the value, tell the quality manager the same day, and the panels are held under the nonconformance rules. Do not sign the release.</b>                                                                                                                                                                                                                                         |
| <b>NOT SET</b> , which is what it says today            | Write the value and mark the "in range" column <b>range not set</b> . Nobody can judge a reading against a range that does not exist, and you do not invent one. <b>If the reading is below 32 F or above 100 F, take it to the quality manager before the release is signed</b> and the outcome gets written on the log. Those two numbers are a <b>trigger to go and ask</b> , not a pass mark: a reading between them is not "in range", because there is no range. |

While the header says NOT SET, the release for stripping is made on the 7 day rule alone, with the temperature record complete, attached and unjudged. The moment the engineer sets a range it goes in the header and the log starts judging.

The 7 day rule is a handling rule, not a strength acceptance. It says the panel can be moved. It does not say the concrete has reached a strength, because no design strength has been set yet.

# Cure and stripping a green panel (continued)

## NOT SETTLED YET

[PE TO SET: **the accepted cure temperature range at the bed**, and whether the limit is on the concrete or on the air around it. There is no published range to borrow. ACI 523.1R-06 §5.6, the only guide written about this material, gives a curing *method* and no temperature at all; its 32 F and 100 F are rules about when you may *place*, not about how the panel is held afterwards. The cold weather and hot weather guides are written for ordinary structural concrete, not for a 35 pcf foam in a 5 in section. So this number comes out of this plant's own mix qualification and nowhere else.] [PE TO SET: whether release for stripping and for the pick may be made on a cylinder strength result instead of on elapsed time, and at what strength. Until the engineer of record sets that, the 7 day rule governs and is not shortened for anyone.] [KEN TO CONFIRM: the curing method itself. A curing compound has to be compatible with the finish that follows, and the cast face here is the interior finish face of the building, so the method has not been chosen.] [KEN TO CONFIRM: the cure enclosure or heated space that holds the temperature through the seven days. In a Montana winter that is not optional and it has not been bought, and until the range above exists nobody can even say what duty it has to meet.]

## HOLD POINT

The QC inspector signs the release on QF-11 Cure log **before the panel is stripped**. Stripping a panel without that signature is a nonconformance against the panel.

## The pick: the heaviest thing you lift all day

Taking a panel out of its slot is the heaviest routine handling in this plant. About **703 lb** for a 10 ft panel and about **879 lb** for a 12 ft 6 in wall A panel, several times a cycle, every production day. It has a written method, it has a hold point, and it gets signed for on every panel.

# Cure and stripping a green panel (continued)

| The pick            | How it is done                                                                                                                                                                                     |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Where from          | Out of its own slot in the bed, lying flat and face down. The finish face is on the liner and the stud side faces up.                                                                              |
| Where you take hold | <b>The up-facing stud side, every time.</b> The finish face is never a bearing face, never a rigging face, and the forks never touch it.                                                           |
| With what           | The forklift with the boom attachment, equipment E-8. Lift height in the model is 60 in; carry it as low as the ground lets you.                                                                   |
| Not with            | <b>No cast-in lifting insert.</b> A wall panel does not have one. If a panel turns up with an insert in it, stop and tell the quality manager: it is built to a drawing this plant does not run.   |
| Off the liner       | Lift evenly along the panel to break the suction. <b>No bar, no wedge, no prying an edge or a corner.</b> A green panel breaks at the edge, and the break is in somebody's finished interior wall. |
| Turning it upright  | With a tag line, panel clear of every person. Never with a hand.                                                                                                                                   |
| Set down            | On prepared dunnage in the storage area. Not face down on the slab, not leaned against a wall loose.                                                                                               |

## HOLD POINT

**The pick check is a hold point, signed before the first lift of every panel**, on QF-16 section 2, wall panel pick check, and it is station line 7 of QF-13 Panel and unit traveler. What gets checked before you lift:

- Cure released on QF-11 Cure log for this bed and slot, and the 7 days are up.
- The panel is identified and its pick weight is written on the traveler.
- The truck and the boom attachment are in service, and the pick weight is inside the capacity marked on them. [KEN TO CONFIRM: no truck and no attachment has been bought, so there is no marked capacity to check against yet.]
- The rigging has been inspected, is undamaged and is in service.
- **No cast-in lifting insert is in the panel.**
- The edge forms are struck, the end board is out, and nothing is fastening the panel to the bed.
- The travel path is clear, the dunnage is placed, and the set-down position is ready.
- Nobody is under it, nobody is at the pinch beside it, and nobody has a hand on it while it is still stuck to the liner.

**A panel lifted before that line is signed is a nonconformance against the panel, damaged or not.**

Look the panel over as it comes out of the slot and record any damage on QF-17 Panel dimensional and surface inspection. Damage found at the pick is a nonconformance and is handled the same way as any other one.

# Cure and stripping a green panel (continued)

## NOT SETTLED YET

**The method above is provisional. It is not an engineered pick, and nothing on this sheet is a capacity.** It is written so the operation is described, checked and recorded, which it was not before. What is waiting on the engineer of record, and what no one may fill in from experience:

- [PE TO SET: the attachment points on the panel, and whether the load is taken on the steel frame or on the concrete.]
- [PE TO SET: the stripping suction factor and the dynamic factor applied to the static pick weight.]
- [PE TO SET: whether the 12 ft 6 in wall A panel at about 879 lb needs a designed cast-in lifting insert instead of a forklift boom pick.]
- [PE TO SET: the rated capacity the truck and the boom attachment must have at the attachment load centre, for each panel weight.]
- [PE TO SET: the sling arrangement, the sling angle limit, and whether a spreader bar is required.]
- [PE TO SET: whether the flat-to-upright turn may be made in the air.]
- [PE TO SET: the dunnage and support point positions for set-down, storage and stacking.]

Until those are answered in writing, this method is followed because it is the only written method, and the signature on the form records that it was followed. It does not record that the pick is adequate.

## SAFETY

About 703 lb for a 10 ft panel and about 879 lb for a 12 ft 6 in wall A panel, on a forklift boom at 60 in of lift. Nobody under it, nobody beside it at the pinch, and nobody hands-on to steady it while it is still attached to the liner. A panel that lets go of the bed suddenly swings.

## Storing it

Panels go to the identified storage area, off the ground on dunnage, protected from weather and from mechanical damage. Moves in and out of storage use the same pick method; the hold point is signed once, before the first lift, and is not re-opened for later moves. Record where each serial number is stored, so a panel in the yard can be found again.

## NOT SETTLED YET

[KEN TO CONFIRM: whether panels are stored flat and stacked or vertical in a rack. That decision sets the dunnage, the stack limit and the yard layout, and nobody has made it.] [PE TO SET: the maximum stack height, the dunnage positions and the bearing requirements for stacked panels.] **Do not invent a stack.** Until the stack limit is set, product is not stacked.

## Cure and stripping a green panel (continued)

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### NO PICTURE EXISTS FOR THIS

No rendering shows a panel leaving the bed. The shot that would serve this sheet: the end of the **cure** phase with one panel lifted clear of its slot and the empty liner below it, camera at the bed from about 12 ft at eye level, so the panel edge and the suction break read. Nothing in the current shot list covers stripping.

### THE RECORD YOU SIGN

Two hold points on this sheet. QF-11 Cure log, with the QC inspector's release signature before the panel is stripped — and before the first daily reading goes on it, copy the accepted range out of QF-07 Mix design record into its header, or write NOT SET there. Then QF-16 section 2, wall panel pick check, signed by the QC inspector before the panel is lifted for the first time. Both are lines on QF-13 Panel and unit traveler: cure is line 6, the pick check is line 7. Damage found at the pick goes on QF-17 Panel dimensional and surface inspection and is handled as a nonconformance. Storage location and condition go on QF-32 Storage and stacking record.