The Simplified Method of Shoring/Reshoring

• Some field measurements of loads suggest that the simplified method is accurate enough for practical use. Other theoretical studies consider variable stiffness of the shores, or aspects of the slab-shore interaction. Some recommend a correction factor of 5-15 percent to be used when using compressible shores – Committee 347 is preparing a report.

• Assumption when using the Simplified Method
  1. All Slabs are identical – and shores/reshores are aligned one-on-one from floor to floor
  2. Ground level is rigid, and shores are spaced closely enough to treat the shore reactions as a distributed load.
  3. Shores and reshores are infinitely stiff relative to the slab.
  4. Slabs interconnected by shores all deflect equally when a new load is added, and carry a share of the load in proportion to their relative stiffness
Shoring/Reshoring: Simplified Analysis of Loads:
Two levels of shoring, one level of re-shoring

References: Formwork for Concrete – Special Publication #4 Seventh Ed
As per OSHA standards: Removal of the forms and shores should be specified by the engineer-architect for most major structures during construction.

Step 1: Place level 1 concrete
Notes: once slab one is placed all load is transferred to the shoring

Step 2: Place level 2 concrete
Notes: Slab 2 is placed, all load is transferred to the shoring 2, then load is transferred to shoring 1 because slab 1 can’t take load because the shoring doesn’t allow.

Step 3: Remove shoring 1
Notes: When shoring is removed both slab 1 and slab 2 deflect together allowing both to absorb their own weight

Step 4: Re-shoring 1
Notes: No change when reshoring is placed

Step 5: Place level 3 concrete
Notes: New slab is placed all the weight is transferred down through the shoring and reshoring

Step 6: Remove shoring 2
Notes: When you take away shoring 2 a major shift happens, half of the load that was carried by shoring 2 is shifted to slab 3 and the other half is shifted to slab 2. Shoring 3 is now carrying less of the load.
Step 7: Place level 4 concrete, Reshore 2 with level 1

Notes: Now when a new slab is placed the load is shared among the other three slabs. This is high load impact on. Look at how much weight slab 2 has to carry.

Step 8: Remove shoring 3

Notes: Same method as step 6

Step 9: Place level 5 concrete, Reshore 3 with level 2

Notes: Same method as step 7

Step 10: Remove shoring 4

Notes: Same method as step 6

Step 11: Place level 6 concrete, Reshore 4 with level 3

Notes: Same method as step 7

Legend
- Newly placed concrete slab
- Fully cured concrete slab
- Deflection of concrete is occurring
- Transfer of load is occurring
Shoring/Reshoring: Simplified Analysis of Loads: One levels of shoring, two level of reshoring, assuming Construction Live loads(0.5D) and shores and forms weigh(0.1D)

References: Formwork for Concrete – Special Publication #4 Seventh Ed
As per OSHA standards: Removal of the forms and shores should be specified by the engineer-architect for most major structures during construction.

Step 1: Place level 1 concrete
Notes: once slab one is placed all load is transferred to the shoring

Step 2: Place level 2 concrete
Notes: Slab 2 is placed, all load is transferred to the shoring 2, then load is transferred to shoring 1 because slab 1 can’t take load because the shoring doesn’t allow. Slab two has construction live load (CLL) and shores and forms weigh(FSW), slab just has FSW

Step 3: Remove shoring 1
Notes: When shoring is removed both slab 1 and slab 2 deflect together allowing both to absorb equally the remaining weight, which is just the self weight plus FSW of slab 2

Step 4: Re-shoring 1
Notes: No change when reshoring is placed

Step 5: Place level 3 concrete
Notes: New slab is placed all the weight is transferred down through the shoring and reshoring

Step 6: Remove shoring 2
Notes: When you take away shoring 2 a major shift happens, half of the load that was carried by shoring 2 is shifted to slab 3 and the other half is shifted to slab 2. Shoring 3 is now carrying less of the load. Also assume no CLL and only formwork on slab 3.
Notes: Now when a new slab is placed, the load is shared among the other three slabs. This is high load impact on. Look at how much weight slab 2 has to carry.

Notes: Same method as step 6. No CLL

Notes: Same method as step 7

Notes: Same method as step 6, CLL is assumed removed

Legend

- NEWLY PLACED CONCRETE SLAB
- FULLY CURED CONCRETE SLAB
- DEFLECTION OF CONCRETE IS OCCURRING
- TRANSFER OF LOAD IS OCCURRING