APPENDIX F

CHECKLIST FOR CONCRETE PRE-CONSTRUCTION CONFERENCE
Introduction

Pre-construction meetings are of prime importance in planning concrete construction work because many potential problems can be avoided at the right time – before the start of the project when the cost impact is relatively low.

In 1999, the National Ready Mixed Concrete Association (NRMCA) and the American Society of Concrete Contractors (ASCC) joined in a partnership to enhance the quality of concrete construction. This checklist is one of the ongoing initiatives of the partnership.

With permission of the original author, the Ready Mixed Concrete Association of Ontario (RMCAO) and the Ontario General Contractors Association (OGCA) have reviewed and revised this document for use on Canadian construction projects following the requirements of the most recent CSA A23.1/2 Standard.

The checklist allocates responsibilities and establishes procedures related to concrete construction – subgrade preparation, forming, concrete mix design, necessary equipment, ordering and scheduling materials and operations, placing, consolidating, finishing, jointing, curing and protection, testing and acceptance, as well as safety and environmental issues.

The checklist covers some of the issues that need to be discussed at a pre-construction meeting and is not intended to be all-inclusive.

This checklist is meant to be a guide and is not intended to address all safety issues. Please operate safely and within all the legislations in your area.
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### References

Canadian Standards Association  
CSA A23.1  
CSA A23.2  
CMATS™ www.cmats.com
SAMPLE CHECKLIST FOR THE CONCRETE PRE-CONSTRUCTION CONFERENCE

A. Project Information

1. Project name ________________________________
2. Location ________________________________
3. Project start date __________________________
4. Project completion date _____________________
5. Project participants
   Contact ___________________________________________
   Owner __________________________________________
   Architect __________________________________________
   Structural Engineer _______________________________
   Construction Manager/General Contractor ____________
   Concrete Contractor ______________________________
   Concrete Supplier ________________________________
   Concrete Pumping Contractor ________________________
   Concrete Finisher ________________________________
   Testing Laboratory _______________________________
   Inspection Agency ________________________________
   Other __________________________________________
6. Background information about the project
   ________________________________________________
   ________________________________________________
7. Unique features of the project
   ________________________________________________
   ________________________________________________
8. Distribution of completed checklist
   Project Participants ______________________________
   Others __________________________________________
B. Construction Process

1. Review notes and changes on drawings that may affect construction process

2. Sequence of construction and milestone dates
   Foundations
   Walls
   Structural slabs
   Slab-on-grade interior
   Slab-on-grade exterior

3. Construction/acceptance of base/subgrade, compaction, elevation. Responsibility for:
   Providing base and subgrade elevations to contractors
   Stability of the base and or subgrade under construction traffic
   Protecting the base and/or subgrade from water damage
   Compacting and final grading of the base and subgrade after all plumbing installations are complete
   Location of electrical lines (conduit)
     In subgrade trenched and backfilled with rock
     In rock subgrade
   Protection from truck traffic if required

4. Responsibility for site access roads and their maintenance

5. Responsibility for available space for pumping operations if required
   Access for two trucks to pump, one on each side
   Staging area for testing and slump adjustment

6. Person responsible for directing trucks to pump or placement area

7. Responsibility for directing/backing up trucks
8. Responsibility for power, lighting, water, and water pressure during placing and finishing
_______________________________________________________________________________

9. Responsibility for controlling the ambient temperatures (subgrade, forms, and air)
_______________________________________________________________________________

10. Forms
    Form sizes, types _______________________________________________________________
    Lifting equipment required ______________________________________________________
    Form materials, accessories _____________________________________________________
    Review location of reinforcement, embedded items, waterstops, drains, openings,
    openings for frames, etc.

_______________________________________________________________________________
    Scheduling form erection and removal correlated to reinforcing and concreting operations

_______________________________________________________________________________
    Responsibility for installation and inspection
      Reinforcement _________________________________________________________________
      Embedded items ____________________________________________________________
      Waterstops _________________________________________________________________
      Drains _________________________________________________________________
      Opening frames _____________________________________________________________

    Responsibility for form inspections
      Preliminary – prior to rebar placement __________________________________________
      Semifinal – with rebars, embedded items, waterstops and drains

      **Note:** Reinforcement inspection must include:
      * Location and spacing to allow access for vibration equipment and proper coverage
      * Spacing of reinforcement in relation to aggregate size

      Final – before placing concrete ________________________________________________

11. Vapor retarder or vapor barrier membrane
    Type of membrane _______________________________________________________________
    Location of membrane relative to subgrade _________________________________________
    Effect on curling _______________________________________________________________
    Effect on bonding of applied floor coverings ______________________________________
    Basis of acceptance for installation of moisture sensitive flooring materials (wood, carpet, tiles)
    on the slab
      Moisture emission requirements for flooring materials to be installed
      ____________________________________________________________

_______________________________________________________________________________
Responsibility for
Testing and reporting of the test results
Acceptance of the slab

12. Placing concrete: equipment and procedures
Deposit from truck
Buggy
Belt conveyor
Bucket placement
Pumping
Other

13. Consolidation of concrete: equipment and procedures
Vibrators
Vibratory screeds (surface vibrators)
Back up equipment
Power source
Other

14. Responsibility for inspection of placing and consolidation of concrete

15. Ventilation in enclosed spaces
Type of test required
Responsibility for ventilation:
During placement
During finishing
16. Strike off technique

<table>
<thead>
<tr>
<th>Technique</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand strike off</td>
<td></td>
</tr>
<tr>
<td>Vibratory screed</td>
<td></td>
</tr>
<tr>
<td>Laser screed</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

17. Finishing

**Types of finishes**
- Area 1
- Area 2
- Area 3
- Area 4

**Special materials for finishes**

**Dry-shake hardener**
- Rate of application
- Procedure to install

**Tools and equipment required**

**Back up tools and equipment required**

18. Specified tolerances for

**Vertical concrete surfaces:**
- Plumbness
- Dimensions
- Thickness
- Texture
- Colour
  - Acceptable variances
- Surface defects
- Others

**Slabs-on-grade and floors**
- Flatness/levelness
- Dimensions
- Thickness
- Texture
- Colour
  - Acceptable variances
- Surface defects
<table>
<thead>
<tr>
<th>Joint spacing</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Elevated slabs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flatness/levelness</td>
</tr>
<tr>
<td>Thickness</td>
</tr>
<tr>
<td>Texture</td>
</tr>
<tr>
<td>Acceptable variances</td>
</tr>
<tr>
<td>Others</td>
</tr>
</tbody>
</table>

Procedures for measuring tolerances (when and how)

Review specifications for possible conflict between the concrete installer and other trades

Review specifications for conflict between the surface profile provided by the concrete installer and the surface profile required by installer of finished material

Responsibility for
- Reporting F-numbers to concrete contractor
- Accepting floors
- Measuring tolerances
- Repairing “air or bug holes” in vertical surfaces
- Removing curing compounds prior to application of sealers

19. Jointing

Review/verification of contraction, isolation, and construction joint layout plans

<table>
<thead>
<tr>
<th>Structures (walls)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments (number, location, spacing, details)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slabs-on-grade</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments (number, location, spacing, details)</td>
<td></td>
<td></td>
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</tbody>
</table>
Type of joints
☐ contraction  ☐ isolation  ☐ construction

Formed joints

Tooled joints

Early entry saw-cut

Timing

Depth of cut

Joint spacing

Equipment

Conventional saw-cut

Timing

Depth of cut

Joint spacing

Equipment

20. Slabs-on-grade

Joints
☐ Yes  ☐ No

Reinforcement
☐ Yes  ☐ No

Position of reinforcement in slab

Method of supporting reinforcement at specified elevation

Termination at joints

Load transfer devices (e.g. dowel bars)

Type, size, and location

Check for specified alignment

Define unacceptable cracks (see surface defects in tolerances)

Method of repair of unacceptable cracks

Responsibility for repair of unacceptable cracks

Sealing (filling) joints
☐ Yes  ☐ No

Epoxy joint filler
☐ Yes  ☐ No

Elastomeric sealant
☐ Yes  ☐ No

Timing (review product directions and ACI Guidelines)

Depth of filling

Procedure (flush or slightly crowned for epoxy joint or concave for Elastomeric sealant)

Responsibility for future touch up
21. Curing and Sealing

Curing methods ____________________________________________________________
Curing periods __________________________________________________________
Responsibility for curing floors placed prior to erection of roof, walls

<table>
<thead>
<tr>
<th>Temperature Control</th>
<th>Yes</th>
<th>No</th>
<th>Specify</th>
</tr>
</thead>
</table>
| If temporary heaters are used, responsibility for venting to prevent concrete dusting
| Excessive evaporation control | Specify |
| Evaporation retarder | Yes | No |
| Fogging | Yes | No |
| Other | Specify |
| Responsibility for inspection of curing operations/timing |
| Responsibility for removing curing compounds |

Applying sealers

<table>
<thead>
<tr>
<th>Types</th>
<th>Locations</th>
</tr>
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</table>

22. Protection of concrete

<table>
<thead>
<tr>
<th>Roof and walls</th>
<th>Yes</th>
<th>No</th>
<th>Specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floors coverings</td>
<td>Yes</td>
<td>No</td>
<td>Specify</td>
</tr>
<tr>
<td>Floor protection</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Specify age/strength of floor prior to the use of floor by</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foot traffic</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pneumatic tire traffic</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Hard wheel traffic</td>
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<td></td>
<td></td>
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<tr>
<td>Construction traffic</td>
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</tbody>
</table>
Specify age/strength of floor when
- Equipment is installed ________________________________
- Racks are erected ________________________________

23. Responsibility for storage areas and site security

____________________________________________________________________________________

24. Form removal
What is the minimum strength requirement for form removal? __________ MPa
What formal report is required before form removal?
____________________________________________________________________________________

Type of field or in-place strength tests (if used) and evaluation criteria?
____________________________________________________________________________________

Name(s) of personnel authorized to approve form removal
____________________________________________________________________________________

25. Procedures for hot weather concreting

____________________________________________________________________________________

26. Procedures for cold weather concreting

____________________________________________________________________________________

C. Concrete Requirements

1. Concrete mix designations
All concrete materials and supply shall conform to CSA A23.1

2. Concrete mix designs submittal
   - Have mix submissions been received □ Yes □ No
   - Prescriptive requirements □ Yes □ No
   - Performance requirements □ Yes □ No
   - Comments: ________________________________

   Copies of the mix submittal provided to
   - Owner □ Yes □ No
   - Architect □ Yes □ No
   - Structural engineer □ Yes □ No
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Construction manager or general contractor  ☐ Yes  ☐ No
Concrete contractor  ☐ Yes  ☐ No
Concrete pumping contractor  ☐ Yes  ☐ No
Concrete finisher  ☐ Yes  ☐ No
Testing laboratory  ☐ Yes  ☐ No
Inspection agency  ☐ Yes  ☐ No

3. Additional mix designs required  ☐ Yes  ☐ No

Specify _____________________________________________

4. Consideration for aggregates other than CSA – prescriptive specification only

Gradation _____________________________________________________________________

Sand requirements  ☐ Yes  ☐ No

5. Pumped concrete  ☐ Yes  ☐ No

6. High early strength  ☐ Yes  ☐ No  Strength required __________ MPa at age __________

7. Lightweight concrete  ☐ Yes  ☐ No

8. Other  ☐ Yes  ☐ No

Comments ___________________________________________________________________

9. Concrete supply

RMCAO Production Facility Certification receive  ☐ Yes  ☐ No – do not proceed with supply
Primary Plant ______________________________ Backup Plant ____________________________
Plant Contacts ____________________________ Phone Number ____________________________

Revolutions or time limits for mixing concrete _______________________________________

Note: Refer to CSA A23.1

10. Review project specifications for conflicts in performance requirements (compressive/flexural strength, durability, shrinkage, curling and water-cementitious materials ratio, water content, slump, air content)

________________________________________________________________________

________________________________________________________________________

11. Other performance ingredient materials required

Mid range water reducing admixture  ☐ Yes  ☐ No
High range water reducing admixture  ☐ Yes  ☐ No
Non-chloride accelerator  ☐ Yes  ☐ No
Corrosion inhibitors  ☐ Yes  ☐ No
Fly ash  ☐ Yes  ☐ No
GGBF slag  ☐ Yes  ☐ No
CHECKLIST FOR CONCRETE PRE-CONSTRUCTION CONFERENCE

Silica fume

Fibres

Colour

Other

☐ Yes  ☐ No

☐ Yes  ☐ No

☐ Yes  ☐ No

☐ Yes  ☐ No

Note 1: Batching all ingredient materials at the plant ensures best quality control of concrete. 
Jobsite modifications to mixture shall be documented on the delivery tickets.

Note 2: Add appendices with the approved concrete mix design submittals

12. Project specification requirements for air content

Normal weight air-entrained concrete (not recommended if floors require a machine troweled finish, but recommended for all exterior work)

Comments

__________________________________________________________________________

__________________________________________________________________________

Are adjustments to air content allowed on the jobsite  ☐ Yes  ☐ No

Comments

__________________________________________________________________________

__________________________________________________________________________

Air-entrained lightweight concrete for interior slabs

Comments

__________________________________________________________________________

__________________________________________________________________________

Other requirements

Comments

__________________________________________________________________________

__________________________________________________________________________

13. Project specification requirements for slump limits

Conventional concrete

Max. __________________________  Min. __________________________

Pumped concrete

Max. __________________________  Min. __________________________

Comments

__________________________________________________________________________

Plasticized concrete

Max. __________________________  Min. __________________________

Comments

__________________________________________________________________________

Other:

Max. __________________________  Min. __________________________

Comments

__________________________________________________________________________
14. Jobsite slump adjustments

Responsibility for:
- Making/permitting jobsite slump adjustments
- Recording of adjusted batch

Materials permitted to adjust the slump:
- Water
- Mid-range water reducer
- High-range water reducer

Procedure to be followed and limitations that apply to jobsite slump adjustment (maximum amount, subsequent mixing, sampling of the load)

15. Project specification requirements for temperature

Required temperature of concrete as delivered:
- Max: __________ °C
- Min: __________ °C

Responsible person for requiring and approving special measures to meet concrete temperatures such as hot water, heated aggregate, cold water, ice, liquid nitrogen

Outline procedure to be followed and limitations that apply for measurement of concrete temperature and acceptance of concrete at the jobsite

16. Project specification requirements for concrete delivery time – 120 minutes as per CSA A23.1/2

Other

17. Project specification requirements for lightweight concrete

- Maximum unit weight
- Slump
- Air content
- Pumping operations

18. Architectural concrete

Finish details
- Exposed aggregate
- Smooth finish
- Rubbed finish
- Colored
- Imprinted

Details (grouted joints, textured)
Special materials
- Cement
- Aggregates
- Water
- Admixtures
- Sealers
- Release agents

Architectural samples or mockups
- Location
- Preservation
- Responsibility for acceptance
- Repair methods

D. Ordering and Scheduling Concrete
1. Person(s) responsible for ordering concrete (concrete must be ordered by mix design code)
2. Minimum time notice required for most placements
3. Define large and specialty orders
4. Minimum notice required for large and specialty placements
5. Procedure for handling will call orders
6. Procedure for handling revised orders
7. Contact name(s) and phone number(s) for last-minute cancellations
   - Supplier
   - Concrete contractor
   - Construction manager or general contractor
8. Person on jobsite responsible for reviewing delivery ticket prior to placement
9. Regular hours are between ____________ am and ____________ pm
   Regular workdays are ____________ through ____________ not including designated holidays

10. Are there any anticipated holiday and/or overtime placements?  
    □ Yes  □ No
    Comments ____________________________________________________________________________

11. Delivery schedules
   Location of placement ____________________________________________________________________
   Anticipated placement sizes __________________________ cubic metres
   Minimum load size __________________________ cubic metres
   What are anticipated placement rates? __________________________ cubic metres/hour
   Approximate placements dates ____________________________________________________________________
   Inclement weather plant capability ____________________________________________________________________

12. Concrete delivery
   Acceptance/rejection responsibility ___________________________________________________________________
   Any traffic restrictions at or near the jobsite  
    □ Yes  □ No
    Comments ____________________________________________________________________________
   Any restrictions on entrance to or exits from jobsite  
    □ Yes  □ No
    Comments ____________________________________________________________________________
   Other Items
    Comments ____________________________________________________________________________

13. Trucks:
   Number of trucks ____________________________________________________________________________
   Interval schedule (turn around time) ____________________________________________________________________

E. Environmental Aspects

1. Environmentally sensitive areas around the project:  
    □ Yes  □ No
    Comments ____________________________________________________________________________

2. Contractor identified concrete wash out area at the jobsite ____________________________________________________________________

3. Responsibility for clean up of the wash out areas ____________________________________________________________________

4. Person responsible for directing trucks to the wash out area ____________________________________________________________________

5. Are spill response kits available on site?  
    □ Yes  □ No
    Comments ____________________________________________________________________________

6. On-site emergency contact person ____________________________________________________________________

7. Responsibility for disposal of curing compounds ____________________________________________________________________

8. Other items ____________________________________________________________________
F. Quality Control/Assurance

1. CSA/CCIL Accreditation requirements for laboratory

2. Certification requirements for
   Laboratory testing technicians name(s)
   - CSA Concrete Laboratory Testing Technician
   Field testing technicians name(s)
   - ACI Grade I Certified
   - CSA Certified Concrete Tester
   - CCIL Type J Certified Concrete Tester

3. Advance notice for scheduling testing personnel

4. Procedures for verification of specified requirements
   - Strength tests
   - Other

F.1. Concrete Sampling and Testing Requirements

1. Sampling frequency

2. Sampling location
   - Point of discharge
   - Point of placement
   - Comments (agreement on sampling location)

3. Tests performed on each sample
   - Slump
   - Temperature
   - Density (unit weight)
   - Air content
   - Compressive strength
   - Flexural strength
   - Other

4. Cylinder size for compressive strength test
   - 100X200 mm
   - 150x300 mm

5. Beam size for flexural strength test
   - 150X150 mm
   - Other size
   - Length: refer to CSA A23.2 – 3C

Note: If beam breaks are low, compare acceptable concrete with suspect concrete by coring
6. Number of cylinders per sample ________________________________
   (hardened cylinder weight must be recorded on concrete strength reports)

7. Number of beams per sample

8. Number of cylinders/beams to be cured ____________ Field? __________ Lab? __________

9. At what ages are cylinders/beams to be tested? ________________________________

10. Number of cylinders/beams per test (minimum 2) ________________________________

11. Are reserve cylinders/beams required?   ☐ Yes   ☐ No   How many? ___________

12. Frequency of yield tests and compliance checks (three-load average of unit weight)

   ____________________________________________________________

F.2. Test Cylinder Storage and Transportation

1. As per CSA A23.2

F.3. Acceptance/Rejection of Fresh Concrete

1. Who has the authority to accept/reject a concrete delivery?

   ____________________________________________________________

   **Note:** A second person may be designated as having the authority for FINAL rejection of a concrete delivery

2. What criteria will be used to reject concrete?
   Slump ______________________________________________________
   Air content _________________________________________________
   Unit weight ________________________________________________
   Temperature ________________________________________________
   Time limit __________________________________________________
   Other ______________________________________________________

3. Are re-tests allowed before rejection?   ☐ Yes   ☐ No
   Procedure _________________________________________________

F.4. Acceptance Criteria for Hardened Concrete

1. Review acceptance criteria
   Other _______________________________________________________

   ____________________________________________________________

CHECKLIST FOR CONCRETE PRE-CONSTRUCTION CONFERENCE

Best Practices Guidelines for Concrete Construction

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F.5. Distribution of Test Reports (to all participants)

1. CMATS™ shall be used for project
   
   **Note:** Concrete supplier and concrete contractor must receive reports directly and immediately from the laboratory to allow timely response to any deficiencies.

2. Early age test result strength requirements
   
   Anticipated concrete strength for earlier age breaks: _______ / _______ (% specified strength/days)

F.6. Testing of Hardened In-Place Concrete

1. In what situations will additional (or referee) testing be required?
   
   Running average of three consecutive strength tests is less than specified – CSA A23.1
   
   Other __________________________

2. Procedure(s) to be followed for evaluation of low-strength tests
   
   Evaluation of test results and testing procedures – including laboratory operations
   
   Comments __________________________

   Non-destructive testing
   
   Penetration probe in accordance with ASTM C 803
   
   Rebound hammer in accordance with ASTM C 805
   
   Other (combined method) __________________________

   **Note:** Refer to ACI 228.1R

   Evaluation of structural adequacy of questionable sections by the structural engineer

   __________________________

   Core testing and evaluation in accordance with CSA A23.1
   
   Procedure for conditioning cores prior to testing __________________________

   Load testing in accordance with CSA A23.1
   
   Other __________________________

   Remove and replace
   
   Comments __________________________

3. How do the project specifications handle additional testing?
   
   __________________________

   If additional testing is required, __________________________ will notify the following parties

   __________________________

   __________________________
4. What investigative procedures will be used?
_______________________________________________________________________________________
_______________________________________________________________________________________

5. Who will be employed to conduct additional testing and who employs them?
_______________________________________________________________________________________
_______________________________________________________________________________________

6. How will the test results be evaluated?
_______________________________________________________________________________________
_______________________________________________________________________________________

7. Who will pay the costs of additional testing?
Specified strength confirmed _____________________________________________________________
Specified strength not confirmed __________________________________________________________

G. Safety

1. Personal protective equipment required:
   Hard hats    □ Yes    □ No
   Safety boots □ Yes    □ No
   Eye protection □ Yes    □ No
   Safety vests □ Yes    □ No
   Specific protective clothing □ Yes    □ No
   Respirators □ Yes    □ No
   Other ______________________________________________________________

2. Responsibility for
   First aid supplies _________________________________________________________________
   Providing and maintaining information such as Material Safety Data Sheets (MSDS) and Spills Response Plans at the jobsite _________________________________________________________________
   Job site Ingress and Egress _________________________________________________________
   Fall protection _________________________________________________________________
   Safety inspections ______________________________________________________________
   Signalers __________________________________________________________________________
   Safety meetings _________________________________________________________________

3. Emergency contacts ______________________________________________________________