



## Initial Draft Minutes

### NRMCA 100 Committee Meeting #3

Location: Virtual TEAMS meeting

Time: 3pm, July 9, 2025

1. The chair called the meeting to order at 3:02pm.

Present: Robert Sculthorpe (chair), Will Gold, Ahmed Abdel-Mohti, Julian Mills-Beale, Pooja Patel, and Kelvin Doerr.

Regrets: Michael Weber

2. The chair read the Anti-trust statement

3. Approval of agenda:

Moved by K. Doerr, seconded by A. Abdel-Mohti, Carried

4. Approval of June 18, 2025 meeting minutes:

Moved by W. Gold, seconded P. Patel, Carried

5. A. Julian presented the draft RFP for the structural engineering consultant to be retained by NRMCA to, in summary, update the tables in NRMCA 100 to comply with standard ASCE 7 load requirements. Committee members are asked to provide comments they may have by Monday morning, July 14 2025. Furthermore, committee members are asked to provide names of consultants they recommend be included on the invitation list. Please find the draft RFP attached.

B. Julian reviewed the draft Terms of Reference (TOR) for the following subgroups, followed by the proposed project schedule for the task groups:

- Concrete with Glass Fiber Reinforced Polymer (GFRP)
- Placement and consolidation of concrete in ICF walls
- Update to Cement Terminology in NRMCA 100
- Alignment of NRMCA 100 with ASCE 7 load criteria

Please find the draft TORs and the proposed project schedule attached.

Committee members are asked to provide comments they may have by the morning of July 14, 2025.

C: Julian advised that the NRMCA does not have file sharing software in-house. Therefore, each subgroup is to identify a system which works best for them. Several suggestions were made including One Drive, Google Drive and Share Point.

D: Julian reported that no responses to the call for public input have been received to date.

6. Other Business: Julian and Kelvin have not yet followed up with David Schreck but will do so and report back to the committee at the next meeting.
7. It was agreed that the next meeting (Meeting #4) will be held at 3pm EDT, July 30 2025.
8. The meeting adjourned at 4pm on a motion by K Doerr.



## REQUEST FOR PROPOSALS (RFP)

### ENGINEERING REVIEW AND REVISION OF NRMCA 100 PRESCRIPTIVE DESIGN TABLES

#### Background

The National Ready Mixed Concrete Association's 100-2023 "Prescriptive Design of Exterior Concrete Walls for One- and Two-Family Dwellings" provides an approach to the design of concrete footings, foundation walls, and above-grade walls - both load and non-load bearing. Originally developed by the American Cement Association (formerly the Portland Cement Association), NRMCA now maintains the standard to meet state-of-the-practice industry needs with prescriptive structural designs.

NRMCA 100 has seven (7) chapters with the content based on PCA 100-2017. Table 1 provides the title of each chapter in the standard <sup>1</sup>.

Table 1. NRMCA 100-2023 Chapters

NRMCA 100 Chapter No.	Chapter Description
Chapter 1	General
Chapter 2	General Requirements
Chapter 3	Footings and Foundation Walls
Chapter 4	Above-Grade Walls
Chapter 5	Solid Walls for Resistance to Lateral Forces
Chapter 6	Requirements for Connections and Diaphragms
Chapter 7	Requirements for Lintels and Reinforcement around Openings

The standard NRMCA 100 is referenced in other codes and standards, including but not limited to:

- 1) International Residential Code (IRC);
- 2) American Concrete Institute (ACI) Codes 332 "Code Requirements for Residential Concrete;
- 3) ACI 560 "Report on Design and Construction with Insulating Concrete Forms (ICFs); and
- 4) National Fire Protection Agency (NFPA) Standard 5000 "Building Construction and Safety Code."

NRMCA 100 is used by architects, ~~designers~~, engineers, designers, contractors, developers, building product manufacturers, building code officials and the academic community.

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<sup>1</sup> NRMCA 100 is available for download here:

<https://my.nrmca.org/Main/ItemDetail?iProductCode=2PP100&Category=STAN&WebsiteKey=ccc47b8b-8f64-4219-ad5b-0c98afb23ccc>

## Project Overview

In accordance with the American National Standards Institute (ANSI) compliance requirements, NRMCA 100 is currently undergoing periodic revision required by ANSI. During this revision cycle, NRMCA has identified alignment of the prescriptive design provisions with ASCE/SEI 7 “Minimum Design Loads and Associated Criteria for Buildings and Other Structures” as a new work item. ASCE/SEI 7-22 includes updated loading provisions for various hazards, including dead, live, soil, flood, snow, wind, seismic and tsunami loads.

## Terms of Reference

- **Scope**

The project will cover the content of NRMCA 100-2023, the current edition of the standard. NRMCA 100-2023 was based on PCA 100-2017. Descriptions of the prescriptive design tables that this project is anticipated to address is provided in Table 2a, 2b and 2c. Furthermore, this project will seek to address the interrelationship between using NRMCA 100 and parallel standards such as the International Residential Code (IRC) and the International Code Council (ICC) 600 “Standard for Residential Construction in High Wind Regions”, with the objective of preparing submissions to these standards at their next review cycle

- **Project Objectives**

- a. Investigate, review and assess the back-end calculations resulting in the development of the NRMCA 100 (previously PCA 100) prescriptive design tables.
- b. Examine the correlation between the NRMCA 100 prescriptive design tables, the IRC and the ICC 600 standards.
- c. Compare the differences between the loads and stresses used in developing the NRMCA 100 prescriptive tables with those of the current ASCE/SEI 7-22 design load criteria.
- d. Develop the methodology for creating an updated NRMCA 100 design prescriptive tables based on existing acceptable design load conditions as per ASCE/SEI 7-22.
- e. Prepare a technical report with details of the findings, comparative analysis and recommendations for updating the prescriptive design tables in NRMCA 100-2023 to align with the IRC and ICC 600 standards.

- **Expected deliverables**

The consultant will be required to produce a draft report followed by a final report. The draft report will be reviewed by the NRMCA 100 202X Committee before the submission of a final report. These reports are expected to contain updated prescriptive design tables with recommendations, design notes and commentary where necessary.

## Consultant Qualifications and Eligibility

The proposing consultant shall be a registered Structural Engineer (SE) with professional experience in concrete mix design, reinforced concrete design and demonstrate an understanding of seismic and wind design principles, codes and standards.

Table 2a. Scope of Potential Prescriptive Design Tables for Review during Revision Cycle

<b>NRMCA 100 Chapter</b>	<b>Table No.</b>	<b>Design Table for Possible Review</b>
Chapter 2	Table 2.1	Dimensional requirements of walls
	Table 2.2	Lap Splice and Tension Development Requirements
	Table 2.3	Maximum spacing for alternate bar size and/or alternate grade of steel.
Chapter 3	Table 3.1	Minimum width of concrete footings for concrete walls.
	Table 3.2	Required tributary weight of slab-on-ground for anchorage of stem wall.
	Table 3.3	Required tributary weight of slab-on-ground for anchorage of stem wall.
	Table 3.4	Minimum vertical reinforcement for concrete crawlspace walls
	Table 3.5	Minimum horizontal reinforcement for concrete basement walls
	Table 3.6	Minimum vertical reinforcement for 6-in nominal (152-mm) nominal flat concrete basement walls.
	Table 3.7	Minimum vertical reinforcement for 8-in nominal (203-mm) nominal flat concrete basement walls.
	Table 3.8	Minimum vertical reinforcement for 10-in nominal (252-mm) nominal flat concrete basement walls.
	Table 3.9	Minimum vertical reinforcement for 6-in (152-mm) waffle-grid basement walls.
	Table 3.10	Minimum vertical reinforcement for 8-in (203-mm) waffle-grid basement walls.
	Table 3.11	Minimum vertical reinforcement for 6-in (152-mm) screen-grid basement walls.
Chapter 4	Table 4.1	Minimum vertical reinforcement for flat above-grade walls
	Table 4.2	Minimum vertical reinforcement for waffle-grid above-grade walls
	Table 4.3	Minimum vertical reinforcement for 6-in screen-grid above-grade walls
	Table 4.4	Minimum vertical reinforcement for flat, waffle- and screen-grid stem walls designated continuous with above-grade walls.

Table 2b. Scope of Potential Prescriptive Design Tables for Review during Revision Cycle

NRMCA 100 Chapter	Table No.	Design Table for Possible Review
Chapter 5	Table 5.1A	Unreduced length of solid walls, UL, required in each exterior endwall for wind perpendicular to ridge one story or top story of two-story
	Table 5.1B	Unreduced length of solid walls, UL, required in each exterior endwall for wind perpendicular to ridge first story of two-story
	Table 5.1C	Unreduced length of solid walls, UL, required in each exterior sidewall for wind parallel to ridge
	Table 5.2	Reduction factor, $R_{5.3}$ , for buildings with mean roof height less than 35 feet
	Table 5.3	Reduction factor, $R_{5.3}$ , for floor-to-ceiling wall heights less than 10 feet
	Table 5.4A	Reduction factor, for design strength, $R_{5.4}$ , and layout of reinforcement at each end of solid wall segments for flat walls
	Table 5.4B	Reduction factor, for design strength, $R_{5.4}$ , and layout of reinforcement at each end of solid wall segments for waffle-grid and screen-grid walls
	Table 5.5A	Unreduced length of solid wall, UL, required in each exterior endwall and sidewall for seismic resistance one story or top story of two-story
	Table 5.5B	Unreduced length of solid wall, UL, required in each exterior endwall and sidewall for seismic resistance first story of two-story
	Table 5.5C	Unreduced length of solid wall, UL, required in each exterior endwall and sidewall for seismic resistance first story of two-story with second story exterior walls of light-framed construction
	Table 5.6A	Reduction factor, $R_{5.6}$ , for floor-to-ceiling wall heights of less than 10 feet second story exterior walls of concrete construction
	Table 5.6B	Reduction factor, $R_{5.6}$ , for floor-to-ceiling wall heights of less than 10 feet second story exterior walls of light-framed construction
	Table 5.7	Reduction factor, $R_{5.7}$ , for exterior wall covering weighing 3 psf or less
	Table 5.8	Reduction factor, $R_{5.8}$ , for ground snow load equal to 40 psf
Chapter 6	Table 6.1	Maximum nail spacing for wood structural panel sheathing in wood framed floor diaphragms
	Table 6.2	Maximum screw spacing for wood structural panel sheathing in cold-formed steel framed floor diaphragms
	Table 6.3	Maximum nail spacing for wood structural panel sheathing in wood framed roof and ceiling diaphragms
	Table 6.4	Maximum screw spacing for wood structural panel sheathing in cold-formed steel framed roof and ceiling diaphragms

Table 2c. Scope of Potential Prescriptive Design Tables for Review during Revision Cycle

NRMCA 100 Chapter	Table No.	Design Table for Possible Review
Chapter 7	Table 7.1A	Factored roof uplift force
	Table 7.1B	Number, size and grade of vertical reinforcement on each side of opening
	Table 7.2	Lintel design loading conditions
	Table 7.3	Maximum allowable clear spans for 4-in nominal thick flat lintels in load-bearing walls roof clear span 40 feet and floor clear span 32 feet
	Table 7.4	Maximum allowable clear spans for 4-in nominal thick flat lintels in load-bearing walls roof clear span 32 feet and floor clear span 24 feet
	Table 7.5	Maximum allowable clear spans for 6-in nominal thick flat lintels in load-bearing walls roof clear span 40 feet and floor clear span 32 feet
	Table 7.6	Maximum allowable clear spans for 6-in nominal thick flat lintels in load-bearing walls roof clear span 32 feet and floor clear span 24 feet
	Table 7.7	Maximum allowable clear spans for 8-in nominal thick flat lintels in load-bearing walls roof clear span 40 feet and floor clear span 32 feet
	Table 7.8	Maximum allowable clear spans for 8-in nominal thick flat lintels in load-bearing walls roof clear span 32 feet and floor clear span 24 feet
	Table 7.9	Maximum allowable clear spans for 10-in nominal thick flat lintels in load-bearing walls roof clear span 40 feet and floor clear span 32 feet
	Table 7.10	Maximum allowable clear spans for 10-in nominal thick flat lintels in load-bearing walls roof clear span 32 feet and floor clear span 24 feet
	Table 7.11	Maximum allowable clear spans for 6-in thick waffle-grid lintels in load-bearing walls maximum roof clear span of 40 feet and maximum floor clear span of 32 feet.
	Table 7.12	Maximum allowable clear spans for 6-in thick waffle-grid lintels in load-bearing walls maximum roof clear span of 32 feet and maximum floor clear span of 24 feet.
	Table 7.13	Maximum allowable clear spans for 8-in thick waffle-grid lintels in load-bearing walls maximum roof clear span of 40 feet and maximum floor clear span of 32 feet.
	Table 7.14	Maximum allowable clear spans for 8-in thick waffle-grid lintels in load-bearing walls maximum roof clear span of 32 feet and maximum floor clear span of 24 feet.
	Table 7.15	Maximum allowable clear spans for 6-in thick screen-grid lintels in load-bearing walls maximum roof clear span of 40 feet and maximum floor clear span of 32 feet.
	Table 7.16	Maximum allowable clear spans for 6-in thick screen-grid lintels in load-bearing walls maximum roof clear span of 32 feet and maximum floor clear span of 24 feet.

<b>NRMCA 100 Chapter</b>	<b>Table No.</b>	<b>Design Table for Possible Review</b>
Chapter 7	Table 7.17	Maximum allowable clear spans for flat lintels without stirrups in non-load bearing walls
	Table 7.18	Maximum allowable clear spans for waffle-grid and screen-grid lintels without stirrups in non-load bearing walls
	Table 7.19	Maximum allowable clear spans for 4-in nominal thick flat lintels top story walls subject to roof uplift forces
	Table 7.20	Maximum allowable clear spans for 6-in nominal thick flat lintels top story walls subject to roof uplift forces
	Table 7.21	Maximum allowable clear spans for 8-in nominal thick flat lintels top story walls subject to roof uplift forces
	Table 7.22	Maximum allowable clear spans for 10-in nominal thick flat lintels top story walls subject to roof uplift forces
	Table 7.23	Maximum allowable clear spans for 6-in thick waffle-grid lintels in top story walls subject to roof uplift forces
	Table 7.24	Maximum allowable clear spans for 8-in thick waffle-grid lintels in top story walls subject to roof uplift forces
	Table 7.25	Maximum allowable clear spans for 6-in thick screen-grid lintels in top story walls subject to roof uplift forces

## Proposals

Interested consultants should submit a proposal by 11:59 pm EDT on August 15, 2025 via e-mail to Dr. Julian Mills-Beale of NRMCA at [jmills-beale@nrmca.org](mailto:jmills-beale@nrmca.org).

The proposal should include the following information:

1. Qualifications of the consultant including all individuals and subconsultants who will work on the project.
2. Proposed methodology for completing the project.
3. Proposed detailed schedule for completing the project.
4. Proposed fee for completing the project.

## Questions

For any questions regarding this RFP, contact Dr. Julian Mills-Beale, NRMCA's Director of Codes and Standards at 484-633-7452 or [jmills-beale@nrmca.org](mailto:jmills-beale@nrmca.org).



## WORK PLAN (NRMCA 100 – 202X)

### Standard for Prescriptive Design of Exterior Concrete Walls for One- and Two-Family Design NRMCA 100 Committee SubGroups Work Schedule

Goal	Projected Date	Remarks
Discussion on Terms of Reference (TOR) for each SubGroup task.	<b>July 9, 2025</b>	Based on draft prepared by Julian and open for committee input.
Committee input to finalize the Terms of Reference (TOR).	<b>July 14, 2025</b>	All inputs received and documented to create a plan for each Subgroup.
Subgroups start work (not including Public Input)	<b>July 15, 2025</b>	SubGroups will create their own meeting schedule to achieve their objectives.
Hold committee meeting to discuss responses to Call for Public Input". Public Input Agenda (Round 1) for committee to adjudicate comments.	<b>September 2025</b>	Responses are due August 7 <sup>th</sup> . Responses will be collected and archived. Post and distribute Public Input Agenda to committee and IPs.
SubGroups Work Begin work on Public input items	<b>September 2025</b>	SubGroups will create their own meeting schedule to achieve their objectives.
Monthly updates and progress reports.	<b>September – December 2025</b>	Each committee will give a brief 10 minutes updates on progress work.
Preliminary draft report for committee discussion.	<b>November 2025</b>	Submit to Chair and Julian – prior to November meeting.
Complete and approve task group report and proposals. Prepare Initial Draft for public input posting.	<b>December 1, 2025</b>	Committee consent for the initial draft including responses to public input and comments.
Start of consultant's work (pending funding) from NRMCA.	<b>January 6, 2026</b>	Consultant will be selected to complement committee's work.



**NRMCA 100 – 202X COMMITTEE SUBTASKS**  
**ALIGNMENT OF NRMCA 100-2023 WITH ASCE 7-22 GENERAL LOAD CRITERIA**

**TERMS OF REFERENCE (TOR)**

- **Scope**

The project will cover the content of NRMCA 100-2023, the current edition of the standard. NRMCA 100-2023 was based on PCA 100-2017. Descriptions of the prescriptive design tables that this project is anticipated to address is provided in Table 2. Furthermore, this project will seek to address the interrelationship between using NRMCA 100 and parallel standards such as the International Residential Code (IRC) and the International Code Council (ICC) 600 “Standard for Residential Construction in High Wind Regions”.
- **Project Objectives**
  - a. Investigate, review and assess the back-end calculations resulting in the development of the NRMCA 100 (previously PCA 100) prescriptive design tables.
  - b. Examine the correlation between the NRMCA 100 prescriptive design tables, the IRC and the ICC 600 standards.
  - c. Compare the differences between the loads and stresses used in developing the NRMCA 100 prescriptive tables with those of the current ASCE/SEI 7-22 design load criteria.
  - d. Develop the methodology for creating an updated NRMCA 100 design prescriptive tables based on existing acceptable design load conditions.
  - e. Prepare a technical report with details of the findings, comparative analysis and recommendations for updating the prescriptive design tables in NRMCA 100-2023 for submission to the IRC and ICC 600 standards during current or future review.

Work Activity	Comments	Nominated Lead/Consultant	Support/alternate
Seismic and Wind Load Effect	Align designed load impact with ASCE 7 revised loads	Consultant	Julian Mills-Beale



## **NRMCA 100 – 202X SUBGROUPS FOR COMMITTEE SUBTASKS**

### **PLACEMENT AND CONSOLIDATION OF CONCRETE IN ICF WALLS**

#### **TERMS OF REFERENCE (TOR)**

- **Scope**

This subtask will focus on developing relevant ICF consolidation material for integration into key portions of NRMCA 100. This shall include a review of Sections 2.2.3 and Sections 2.2.6 among others. The work shall be primarily focused on literature review and information gathering – surveys and questionnaires.
- **Project Objectives**
  - a. Conduct a literature review of ICF consolidation case studies from reports, journals and research journals.
  - b. Develop a questionnaire to survey and gather information regarding the project experience of engineers, designers and ICF contractors. ICFMA members shall be a good starting point.
  - c. Develop a questionnaire to survey and gather information from code officials at the local, state and national level.
  - d. Examine ACI-318, ACI 309R and ACI 301 and how NRMCA 100 can best adapt some relevant chapter language or text.
  - e. Based on (a), (b) and (c), examine any gaps in knowledge and provide a guiding framework on how ICF consolidation shall be addressed in the revised edition of NRMCA 100.

<b>Work Activity</b>	<b>Comments</b>	<b>Champion / Lead</b>	<b>Support/alternate</b>
Consolidation in ICF Walls	Proper placement and consolidation of concrete in ICF walls, and approaches to confirm proper placement & consolidation	Ahmed-Mohti	Pooja Patel, Robert S., Kelvin D.



## **NRMCA 100 – 202X SUBGROUPS FOR COMMITTEE SUBTASKS**

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  - c. Develop a questionnaire to survey and gather information from code officials at the local, state and national level.
  - d. Examine ACI-318, ACI 309R and ACI 301 and how NRMCA 100 can best adapt some relevant chapter language or text.
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<b>Work Activity</b>	<b>Comments</b>	<b>Champion / Lead</b>	<b>Support/alternate</b>
Consolidation in ICF Walls	Proper placement and consolidation of concrete in ICF walls, and approaches to confirm proper placement & consolidation	Ahmed-Mohti	Pooja Patel, Robert S., Kelvin D.



## NRMCA 100 – 202X SUBGROUPS FOR COMMITTEE SUBTASKS

### UPDATE TO CEMENT TERMINOLOGY IN NRMCA 100

#### TERMS OF REFERENCE (TOR)

- **Scope**

This subtask will focus on updating cement nomenclature to align with proposals and co-proposals that NRMCA, ACI and PCA submitted to the IRC and IBC for consideration. The outcome will reflect the results of approved ICC hearings on this subject. Further information will be provided in this direction.
- **Project Objectives**
  - a. Review the results of cement nomenclature proposals approved by the ICC in the IRC and IBC.
  - b. Review cement nomenclature in standards as codes as listed below:
    1. ICC codes (IBC, IRC, WUIF, Green building code, ICC 600)
    2. ICC-ES AC and applicable ERs
    3. NFPA 5000
    4. ACI codes and standards (332, 318, 560, & relevant others).
    5. ASTM E2634
  - c. Identify key section of NRMCA 100 where existing cement nomenclature needs to be reviewed and updated accordingly.
  - d. Develop a roadmap for aligning the cement nomenclature changes in the IRC and IBC with NRMCA 100.
  - e. Submit a report with those nomenclature updates for consideration by the committee.

Work Activity	Comments	Champion/ Lead	Support/alternate
Updates to nomenclature	Updates to terms, definitions, etc. to align with state-of-the practice.	Pooja Patel	JMB, Robert S.

#### Selected Reference Table of Information for pending ICC code changes

ICC Group A Proposal No.	Proposal Description	Section Details
<b>G6-25</b>	IBC: Section 202 1805.2.2.1 2109.2.4.8.9.4 2510.7, 2512.8.1	Definitions Soils and Foundations Masonry Gypsum Panel Products and Plaster

<b>RB 17-25</b>	IRC: Section 202 R406.1 BJ104.4.4.1 BK 102.1 BL104.3.6.4	Definitions Foundations Appendix BJ – Strawbale Construction Appendix BK – COB Construction Appendix BL – Hempcrete Construction
<b>RB 199-25</b>	IRC: R606.2.8, Table R606.2.8	Mortar Proportions
<b>S144-25</b>	IBC: 2103.2.3 2103.2.3.1 2103.2.3.2 2103.2.3.7	Mortars for ceramic wall and floor tiles Dry-set cement mortars Modified dry-set mortars Cement grouts
<b>S178-125</b>	IBC: TABLE 2507.2	Lath, Plastering Materials and Accessories