ENGINEERING REVIEW

UNIRAC
BETTER SOLAR STARTS HERE

EDITION 01 | Q4 2026

QUARTERLY PERSPECTIVES ON DESIGN, INDUSTRY STANDARDS, AND PRODUCT UPDATES



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FROM THE DIRECTOR



Welcome to the inaugural edition of the UNIRAC Engineering Review! In this first issue, I'd like to introduce myself and the Engineering Services team, highlight the expertise we bring to UNIRAC and our customers, and provide an overview of this publication and the topics currently featured.

I joined UNIRAC earlier this year as Director of Engineering Services. As a licensed Civil Engineer with more than 15 years of experience in structural and solar engineering, I've built my career solving complex challenges. **These experiences have shaped my vision for UNIRAC's Engineering Services: to be the trusted engineering partner that combines technical excellence, responsive support, and practical solutions that help customers navigate challenges with confidence.**

The Engineering Services team supports both internal stakeholders and customers through expertise in structural engineering, codes and standards, research and development, and project support. **We work closely with customers to translate complex requirements into clear, actionable guidance, providing technical support, responsive communication, and practical solutions that help reduce risk and keep projects moving forward.** By combining deep technical expertise with real-world application and a commitment to customer success, we help drive successful project outcomes while strengthening UNIRAC's industry leadership.

The UNIRAC Engineering Review was created to strengthen that commitment. Through this publication, we aim to provide greater visibility into engineering requirements, code developments, industry standards, product innovations, and technical resources that impact solar projects. **Our goal is to share knowledge and practical insights that help customers stay informed, navigate evolving requirements, and move projects forward with confidence.** In this inaugural edition, we provide insight into ASCE 7-22 updates and adoption, an area where many customers have requested greater clarity and support, and explore other topics relevant to customers and project teams.

We welcome your feedback. Whether you have questions, suggestions, or ideas for how we can better support your projects, we want to hear from you. We are also grateful to the customers who challenge us every day with unique projects, evolving requirements, and thoughtful questions. Your partnership helps us continuously improve our expertise, solutions, and support, and we appreciate the trust you place in our team.

Thank you for your partnership. We hope you find this first edition valuable, and we look forward to hearing from you.

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SHORT ON TIME? START HERE.

WHAT MATTERS THIS QUARTER

NAVIGATING CHANGE IN CODES AND STANDARDS



This executive briefing summarizes the most important developments from this quarter's issue and what they may mean for future projects.

INSIGHT #1:
ASCE 7-22 IS BECOMING TODAY'S DESIGN REALITY

What You Should Know
Jurisdictions across the country continue adopting code revisions that incorporate ASCE 7-22, bringing updated structural loading provisions into more projects and permitting processes.

As adoption expands, project teams may encounter different requirements depending on project location, code cycle, and local adoption schedules. Understanding which requirements apply, and when, is becoming increasingly important during project planning.

Why It Matters
Design assumptions that worked under previous code editions may not always produce the same engineering outcomes under newer requirements. Early awareness helps reduce the likelihood of redesigns, documentation revisions, and permitting delays later in the process.

KEY INSIGHT Adoption is accelerating.

READ MORE ASCE 7-22 Adoption Update

INSIGHT #2:
NEW REQUIREMENTS CAN INFLUENCE PROJECT OUTCOMES

What You Should Know
ASCE 7-22 introduces updates to snow, wind, and load-path requirements that may affect project design, engineering documentation, and permitting. Depending on project conditions, these changes could result in additional attachments or ballasts, increased documentation requirements, and greater scrutiny from permitting authorities.

Why It Matters
Changes to design requirements can influence system layouts, project costs, permitting timelines, and optimization decisions. Understanding these impacts early helps teams plan more effectively and reduce risk throughout project execution.

KEY INSIGHT Design assumptions, requirements, and results are changing.

READ MORE Engineering Impacts of ASCE 7-22

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INSIGHT #3:
EARLY COORDINATION SUPPORTS BETTER PROJECT OUTCOMES

What You Should Know
As requirements evolve, successful project execution depends on more than understanding the code. Early coordination between project teams, permitting authorities, manufacturers, and engineering partners can help identify project-specific considerations, documentation needs, and potential approval challenges before they affect schedules or designs. UNIRAC Engineering Services provides technical guidance, engineering resources, and project support to help customers navigate these requirements with confidence.

Why It Matters
Projects are most successful when key requirements and constraints are identified early in the design process. Engaging engineering resources early can improve permitting readiness, streamline decision-making, and provide greater visibility into potential project impacts.

KEY INSIGHT **Engineering support helps teams navigate change.**

READ MORE **ASCE 7-22 Support Available**



ENGINEERING IMPACTS OF ASCE 7-22

Recent updates to wind, snow, seismic, and tornado provisions can affect structural assumptions, engineering workflows, and project economics for roof mount solar.

WHAT THIS MEANS FOR SOLAR PROJECTS

• Expect some projects to see higher snow and wind design loads, which may result in increased attachment counts, additional ballast requirements, or other design modifications needed to maintain compliance.

• Structural load-path requirements may receive greater scrutiny, potentially requiring additional engineering documentation, calculations, coordination with module manufacturers, increased AHJ review, or design changes to reduce load-path demands and module loading.

• Project-specific factors such as location, building characteristics, seismic conditions, and system configuration may have a greater influence on final design and engineering requirements.

• Critical facilities may be subject to new tornado design requirements depending on project classification and location.

STAY TUNED:
Future editions will explore how these changes translate into real-world project impacts through location-specific examples and design comparisons.

As jurisdictions adopt ASCE 7-22, solar project stakeholders may see changes in design loads, ballast and attachment requirements, permitting documentation, and project-specific engineering considerations. While many of these revisions occur within engineering calculations, they can ultimately affect system design, project economics, and permitting.

Snow Loading: A Significant Change in Methodology

ASCE 7-22 introduces significant changes to how snow loads are determined. New reliability-targeted ground snow load maps use expanded climate data and updated statistical methods, resulting in different design loads in many parts of the country. Some regions may experience notable increases, while others may see smaller changes depending on location and Risk Category. ASCE 7-22 also eliminates the snow importance factor and instead provides separate ground snow load maps for different Risk Categories, which can lead to different design assumptions than those used under previous code editions.

ASCE 7-22 also updates snow drift and thermal factor provisions. Revised drift procedures can affect loading near parapets, rooftop equipment, and elevation changes, while thermal factor calculations now account for roof insulation, building heating conditions, and local snow climate. Together, these changes place greater emphasis on project-specific conditions and can influence structural loading assumptions and system design outcomes. As a result, accurate roof information and early feasibility assessments are becoming increasingly important when evaluating rooftop solar projects.

Wind Loading: Updated Design Inputs and Solar Provisions

ASCE 7-22 includes several wind-related updates that may affect rooftop and ground-mounted solar designs. Updated wind speed maps, particularly in some hurricane-prone regions, can change design pressures and influence attachment requirements, ballast quantities, and overall project economics depending on project location. The standard also expands solar-specific design guidance and adopts ASCE 49-21, which updates procedures for wind tunnel testing and data interpretation. For ballasted rooftop systems, where wind tunnel testing is frequently used to optimize ballast requirements and support permitting documentation, these changes may affect design wind pressures and project outcomes.

UNIRAC has incorporated ASCE 7-22 and ASCE 49-21-compliant wind tunnel testing into U-BUILDER® for GRIDFLEX®, RM10 EVO®, and ECOFOOT® 2+ systems, helping customers design projects using methodologies aligned with current code requirements. ASCE 7-22 also includes refinements to the wind load calculation methodology, including changes to how the wind directionality factor (Kd) is applied within certain calculations. While these updates are largely procedural, they reflect the broader effort within ASCE 7-22 to improve consistency across wind design provisions and align design methodologies with current industry practices.

Tornado Loading: A New Consideration for Critical Facilities

ASCE 7-22 introduces tornado loading provisions for certain Risk Category III and IV structures located in tornado-prone regions. Many commercial rooftop solar projects will not be directly affected, but hospitals, emergency facilities, and other critical infrastructure projects may require additional analysis and documentation. For these projects, early coordination with design professionals and permitting authorities can help identify any tornado-related requirements before they impact schedules or permitting.

Seismic Loading: Increased Attention on Load Paths and Documentation

ASCE 7-22 includes several seismic updates, including revised response spectrum procedures, expanded site classifications, and refinements to nonstructural force calculations. For rooftop solar projects, however, the most significant change may be increased scrutiny of load paths in fully ballasted systems.

The standard states that photovoltaic modules should not be considered part of the structural load path resisting interconnection forces unless they have been appropriately evaluated or tested for that purpose. Because ASCE 7-22 does not establish a specific testing methodology or compliance path, documentation expectations may vary among Authorities Having Jurisdiction (AHJs), particularly in higher seismic regions.

This makes product selection and early coordination increasingly important. UNIRAC GRIDFLEX® systems do not rely on modules as part of the structural load path for interconnection forces, which may simplify consideration of this requirement on some projects. For bay-style products such as ECOFOOT® 2+ and RM10 EVO®, acceptance requirements may vary based on AHJ expectations and available documentation. UNIRAC has supported some projects using engineering analysis and internal testing to help address module load-path considerations and assist customers during project review. However, because ASCE 7-22 does not establish a defined compliance path or industry-standard test methodology for this requirement, those efforts should not be interpreted as a guarantee of acceptance by any AHJ. In some cases, AHJs or module manufacturers may request additional information, testing,

or manufacturer approval regarding the module's ability to transfer project-specific lateral loads, and any such approval remains at the discretion of the AHJ and module manufacturer.

Note that projects in Seismic Design Category A are exempt from ASCE 7-22 seismic design requirements, and projects in Seismic Design Category B are exempt from certain nonstructural seismic requirements. Even so, some AHJs may still request documentation demonstrating a complete and continuous load path.



HAVE AN UPCOMING **COMMERCIAL ROOFTOP PROJECT?**

PROJECT DESIGN SUPPORT

ENGINEERING SUPPORT

Engage UNIRAC's Commercial Services and Engineering Services teams early to evaluate project-specific design requirements, including ASCE 7-22 compliance, wind and snow loading, ballast and attachment strategies, module compatibility, and permitting considerations.

Our teams can help identify engineering considerations before they become costly project changes, provide technical guidance, and support customers as they navigate evolving code requirements and jurisdiction-specific expectations.

ASCE 7-22 SUPPORT AVAILABLE TODAY

The following systems are available in U-BUILDER® with updates that support project evaluations under ASCE 7-22, including enhanced wind tunnel testing data for flat roof products, updated snow load calculations and load combinations, applicable ASCE 7-22 references in reports, and tornado speed inputs when the appropriate Risk Category is selected.

PITCHED ROOF FLUSH-MOUNT SYSTEMS	**FLAT ROOF** SYSTEMS
SOLARMOUNT®	**GRID**FLEX® **5D** / **GRID**FLEX® **10D**
NXT UMOUNT®	**RM10** EVO®
	ECOFOOT® 2+

For pitched roof tilt systems, including Tilt Legs, customers should contact their Sales or Commercial Services representative for ASCE 7-22 design support.

LEARN MORE >

ASCE 7-22 INTEGRATION: KEEPING YOU AHEAD OF THE CURVE

Overview of how UNIRAC has integrated ASCE 7-22 requirements into its products, testing, and design tools.

SOLAR MOUNTING SYSTEMS BUILT TO ASCE 7-22 STANDARDS

Summary of key ASCE 7-22 updates affecting solar projects, along with product-specific considerations and resources.

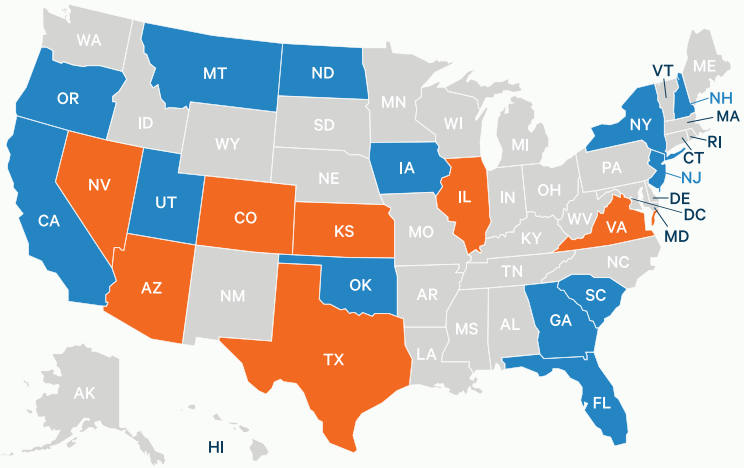
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ASCE 7-22 ADOPTION UPDATE

13
STATEWIDE ADOPTION STATES

7
LOCAL / HOME RULE STATES

5
TRANSITION WATCH MARKETS



Statewide Adoption | Local / Home Rule Adoption | Adoption Not Identified

Virginia has adopted certain ASCE 7-22 provisions. Consult the applicable Authority Having Jurisdiction (AHJ) for project-specific requirements and implementation guidance

TRANSITION WATCH MARKETS

FLORIDA
- ASCE 7-22 currently referenced through amendments
- 2026 Florida Building Code effective Dec 31, 2026

MASSACHUSETTS
- Currently operating under ASCE 7-16
- 2027 code update under development; timing TBD

NEW HAMPSHIRE
- Adopted July 2026
- Transition period applies

NEW JERSEY
- Adopted Aug. 2026
- Transition period applies

SOUTH CAROLINA
- Implementation begins Jan 1, 2027

IMPORTANT CUSTOMER REMINDER

State adoption does not automatically mean identical requirements statewide.
Jurisdictions may:

- Adopt local amendments
- Establish transition periods
- Maintain independent building code requirements
- Apply project-specific permitting interpretations

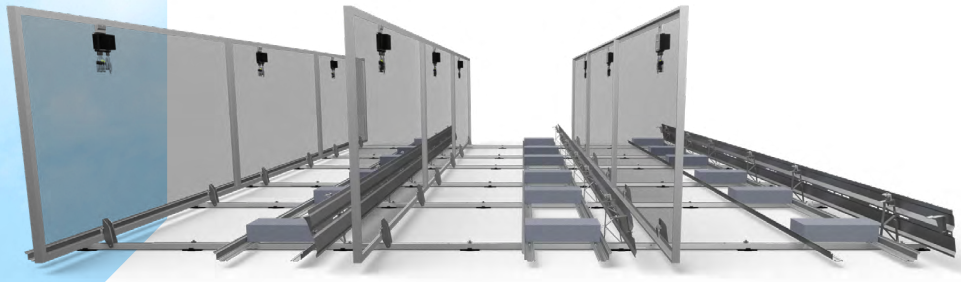
Always verify project-specific requirements directly with the Authority Having Jurisdiction (AHJ).

Prepared by UNIRAC
Independent summary. Not affiliated with or endorsed by ASCE.
Information reflects publicly available resources as of October 2026. Adoption schedules, implementation dates, transition periods, and local amendments may change. This document is provided for general informational purposes only and should not be relied upon as a substitute for confirmation with the applicable Authority Having Jurisdiction (AHJ).

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DESIGN GUIDANCE AND BEST PRACTICES

Practical engineering recommendations improve design consistency, streamline permitting, and reduce project risk.



MULTI-MODULE GRIDFLEX® DESIGNS FOR DOMESTIC CONTENT CONSIDERATIONS

To support domestic content strategies, we are seeing increased interest in using multiple module types within individual GRIDFLEX® arrays. When designing mixed-module arrays, the following guidelines can help streamline engineering review and maintain design consistency:

- Modules within a GRIDFLEX® array must have the same length and width.
- Modules do not necessarily need to have the same thickness and weight; however, selecting modules with similar thicknesses and weights will generally result in a more efficient and straightforward design evaluation.
- For engineering evaluations, conservative assumptions may be used by analyzing uplift with the lightest module and downforce/psf loading with the heaviest module. Depending on project-specific conditions, this approach may provide additional flexibility if module allocations change later in the project.
- This approach is not a guarantee that future module substitutions or revised module splits will be acceptable. All proposed changes should be reviewed against project-specific engineering requirements and applicable design criteria.

Customers planning to mix modules within a GRIDFLEX® array should coordinate with UNIRAC Commercial Services early in the design process to confirm project-specific assumptions and requirements.

PRODUCT TOURS AND INSTALLATION RESOURCES

Looking for additional product guidance?

Visit our website and YouTube channel for product tours, installation tips, and best practices.

GRIDFLEX®
- PRODUCT **PAGE**
- PRODUCT TOUR **VIDEO**
- **UNIRAC TIPS & TRICKS:** GRIDFLEX® 10

RM10 EVO®
- PRODUCT **PAGE**
- PRODUCT TOUR **VIDEO**



CONNECT WITH UNIRAC AT RE+

Meet directly with members of UNIRAC's engineering, design, commercial business development, and sales teams to discuss code changes, product developments, and project-specific challenges.

Something BIG is coming to RE+ Las Vegas, and we're keeping the details under wraps...for now. We've been working behind the scenes, and we can't wait to give you a first look in Las Vegas.

NOVEMBER 16–19 LAS VEGAS CONVENTION CENTER | BOOTH #N504