FAQs on ASCE Standards

What You Always Wanted to Ask

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This quarterly article answers some of the questions received from engineers, building officials, and other design professionals about structural standards developed by the Structural Engineering Institute (SEI) of the American Society of Civil Engineers (ASCE). Questions such as these are often considered to develop future editions. Following are some questions received and SEI's responses.

ASCE/SEI 7

When will the IBC require ASCE 7-22 tornado loads?

Q: Our office has been educating ourselves about the new tornado load provisions, and we are curious about when we will start to use them. When will ASCE 7-22, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, be adopted into the International Code Council's (ICC) *International Building Code* (IBC) and be required by my jurisdiction?

A: The easy, short, partial answer is that the 2022 edition of ASCE 7 has been approved for adoption into the 2024 editions of the ICC's I-Codes, including the IBC and the *International Existing Building Code*. The ICC's Code Development Cycle for the 2024 Codes concluded in 2022. The development cycle includes two hearings: the Committee Action Hearings in March and the Public Comment Hearings in September, followed by an online government consensus vote. The longer answer to the second part of the question regarding your jurisdiction – it is up to your jurisdiction. Some jurisdictions adopt the most recent updated codes as they are published; however, many do not. Please check with your specific jurisdiction regarding the adoption of the 2024 IBC and further confirm the inclusion of the tornado provisions requirements. One additional comment regarding the use of the provisions; it is always possible and often appropriate to work with your clients and the jurisdiction to use ASCE 7 provisions prior to adoption by the jurisdiction. This can be done at the jurisdiction level or per-project basis.

What is the correct load required on intermediate rails?

Q: ASCE 7-16 Section 4.5.1.2 Guardrail System Component Loads discusses the loading on guard infill material. The section states, "Balusters, panel fillers, and guardrail infill components, including all rails except the handrail and the top rail, shall be designed to resist a horizontally applied normal load of 50 pounds on an area not to exceed 12 inches by 12 inches, including openings and space between rails and located so as to produce the maximum load effects." Is it correct to interpret that Section 4.5.1.2 allows the distribution of a 50-pound load over a 12-inch by 12-inch area of the infill components, meaning that each individual member receives its distributed portion of the load, not a 50-pound load on each infill member?

A: Yes, that is correct. The 50-pound load should be distributed to each member that crosses the 12-inch by 12-inch square cited in the provisions within the area of contact of the 12-inch by 12-inch square. In the case of spaced vertical framing, the load would be distributed to each vertical element that passes through the 12-inch by 12-inch square, as indicated in your request. While the total load resisted by all such members is 50 pounds, the load on any one vertical framing element would be less than this.

What is the wind load on a temporary tent structure?

Q: I am a building official. I am reviewing a design for a large tent structure for which the design professional used ASCE 37-14 *Design Loads on Structures During Construction* to reduce the loads on the temporary structure. The tent will have removable wall components that will only be installed in case of bad weather, but I cannot find any guidance in ASCE 37 regarding removable components. How should the wind load on the tent walls be accommodated in addition to without the walls?

A: First, the design team is using the wrong standard. ASCE 37 is only applicable for calculating lower, temporary design loads that would be applied during construction. These lower loads are justified in ASCE 37 because of the controlled occupancy of a construction site – in other words, for a structure that is not accessible to the public. ASCE 37 is not the correct document to use for temporary structures that are accessible to the public.

That said, there is a gap in the provision of ASCE 7 *Minimum Design Loads and Associated Criteria for Buildings and Other Structures* for lower loads for temporary structures. However, the good news is that an ad hoc committee of experts worked for two years to develop provisions submitted for adoption into the 2024 IBC to fill this gap. As a result, the new IBC Section 3103 Temporary Structures was developed by a large stakeholder group – including ASCE 7 members, ICC Committee members, building officials from large jurisdictions such as New York City, San Diego, Seattle, and Las Vegas, the Entertainment Services and Technology Association (ESTA), and National Council of Structural Engineers Code Advisory Committee members – to align with the design basis for IBC Chapter 16 and ASCE 7, to provide the appropriate level of risk and structural reliability to the public. Given a favorable outcome of the ICC process, this new section and related definitions and pointers will be included in the 2024 IBC.

Following this effort in the IBC, the next step is to include loads on temporary structures provisions into the 2028 edition of ASCE 7, and the committee will work to do just that. Then there will be a consistent, reliable approach to use for the design of temporary structures. Until then, temporary structures should be designed in accordance with IBC Chapter 16 and ASCE 7 unless the jurisdiction permits otherwise.▪

If you have a question you want to be considered in a future issue, send it to **sei@asce.org** with FAQ in the subject line. Visit **asce.org/sei** to learn more about ASCE/SEI Standards.

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