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Email: [rbergman@titanbuildingproducts.com](mailto:rbergman@titanbuildingproducts.com)Subject: Equivalency Evaluation of 2024 IBC and IRC Code Sections to Previous

Dear Mr. Bergman,

Intertek Testing Services has conducted an evaluation on the applicable Code Sections from the 2024 IRC and IBC and has compared them with previously tested sections of the codes for respective Titan Building Products' products. The conclusion of the claims of the comparison conducted for the code published in 2024 and its sections will be limited to this comparison only, and has no judgement to any code sections outside the scope of this report.

ICC-ES AC273 Acceptance Criteria for Handrails and Guards, Approved June 2017. Sections 4.2.4 and 4.2.6

ICC-ES AC273 *Acceptance Criteria for Handrails and Guards*, approved June 2017 has been editorially revised in 2024 and referenced in the 2024 IRC edition. This edition still addresses the same structural performance requirements as set forth in the 2024 IRC for handrails/guards, that are defined in the 2021 and 2018 IRC editions.

More specifically, the tests outlined in ICC-ES AC273 (2017 and 2017 - Rev 2024) Sections 4.2.4 and 4.2.6 are still applicable in the 2024 IRC Tables R301.5 and R312. Fundamentally, these define that the test requirements must match the 200-lbf concentrated load applied on the top rail and a horizontal normal load of 50 lbf applied to 1 ft<sup>2</sup> for in-fill components. The guard height, requirements where guards are needed, and handrail continuity/geometry are unchanged in 2024 IRC edition. With the new code edition, the code language on the definition of guard/handrail load path requirements and applications are among the scope of updates, however the evaluation criteria's ICC-ES AC273 2024 editorial revision as used in the 2024 IRC code remain the same. This is a practical update that does not change the numeric loads, but where/how they apply. Only if the 2024 IRC had changed the handrail/guardrail requirements substantively, and the acceptance criteria ICC-ES AC273 technically updated, would there be a need to re-evaluate.

ICC-ES AC 273 Acceptance Criteria for Handrails and Guards, Approved June 2017. Section 4.4.

Similarly, ICC-ES AC 273 *Acceptance Criteria for Handrails and Guards*, approved June 2017 has been editorially revised in 2024 and referenced in the 2024 IRC edition. This edition still addresses the same structural performance requirements as set forth in the 2024 IRC for handrails/guards, that are defined in the 2021 and 2018 IRC editions.

More specifically, the tests outlined in Section 4.4 of ICC-ES AC273 (2017 and 2017 - Rev 2024) is referenced as per 2024 IRC section R312.1.3 (uniformly distributed live loads) and Table R301.5 (guard opening limitations). There is no technical material change applied to this content and the same loads and opening limitations requirements also apply in the 2024 IRC. Required guards shall not have openings exceeding 4 inches, and the rail height shall be not less than 36 inches above the supporting surface. A concentrated horizontal test load of 500 lbf (increased to 600 lbf for wood substrates) is applicable for this test. Just as above with the new code edition, editorial/formatting and local amendments by jurisdictions are among the scope of updates, however the evaluation criteria's ICC-ES AC273 2024 editorial revision as used in the 2024 IRC code remain the same. This editorial update does not change the table entries of R301.5, and the sphere-size opening limits, nor the numeric loads. Only if the 2024 IRC had changed these requirements substantively, and the acceptance criteria ICC-ES AC273 technically updated, would there be a need to re-evaluate.



International Building Code (2015) Section 1607.8.1.1 Concentrated Load for one – and two-family dwellings. Factored loads applied as given in Clause 6.2.4. of ASTM D7032 Standard Specification for Establishing Performance Ratings for Wood – Plastic Composite and Plastic Lumber Deck Boards, Stair Treads, Guards and Handrails.

The International Building Code (2015) Section 1607.8.1.1 Concentrated Load has been editorially sequenced in the International Building Code (2024) as Section 1607.9.1. The content however remains the same, as handrails and guards shall be designed to resist a concentrated load of 200 lbs (0.89kN) in accordance with section 4.5.1 of ASCE 7-10 in the 2015 IBC and ASCE 7-22 in the 2024 IBC. The 2024 IBC has an added reference to glass handrails and guard assemblies as complying with section 2407. ASCE 7-22 differs from ASCE 7-10 with updated mapping and hazard tools for wind, simplified zoning with reduced pressure for roof wind loads, new distinct load provisions for elevated buildings, new coverage for tornado loads, granular maps for higher snow loads and removal of simplified method provisions of ASCE 7-10. ASCE 7-22 also adopts ASTM D7032-21 as the latest standard edition for the factored loads of wood-plastic composite and plastic lumber and their deflection limits at 200 lbf on the top rail and post. This edition includes updates to procedures for establishing performance ratings meeting current safety and performance standards. However, it is important to note that the IBC does not automatically adopt the latest editions of referenced standards, and local jurisdictions may still enforce earlier standards in the 2024 IBC. With that, the factored load requirements have not changed in clause 6.2.4 of ASTM D7032 between 2017 and 2021. The IBC language is substantively the same and the factored load application as provided in ASTM D7032 has not technically changed. Only if the 2024 IBC had changed these requirements substantively, and the factored load application in clause 6.2.4. of ASTM D7032 technically updated, would there be a need to re-evaluate.

International Residential Code (2021) Section R507.3

The 2021 IRC Section R507.3 is unchanged to the 2024 International Residential Code section R507.3. The fundamental material remains the same with minimal editorial revision to code language completed in the 2024 edition. There would there be no need to re-evaluate.

International Residential Code (2021) Section R403.1.4 Minimum Depth and Section R403.1.4 Frost Protection

The 2021 IRC Section R403.1.4 Minimum Depth and Section R403.1.4 Frost Protection is unchanged with minimal editorial revision to code language in the 2024 IRC section R403.1.4 Minimum Depth and Section R403.1.4.1 Frost Protection. In both editions, the minimum depth shall be placed no less than 12 inches below the undisturbed ground surface, and where applicable, depth of footings shall comply with section R403.1.4.1 and Deck Footings with section R507.3. The frost method protections and exceptions material remains the same in both editions of Section R403.1.4.1. As such, there would there be no need to re-evaluate.

The above code editions and standard criteria in effect between 2015 to 2021 have no technical material changes as reviewed in the 2024 editions of the IBC and IRC in the above respective sections. Intertek can conclude that the above material in the 2015 and 2021 IBC and IRC sections identified remain current with the 2024 editions of the IBC and IRC.

If you have any questions regarding this letter report, please do not hesitate to contact the undersigned.

Sincerely,

**INTERTEK TESTING SERVICES NA, LTD.**

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## LAST PAGE & REVISION SUMMARY

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DATE	SUMMARY	REPORTER	REVIEWER
September 25, 2025	Original	J. Ononiwu	J. Reed