



Safety Codes Council

**COUNCIL ORDER NO. 2023-03
BEFORE THE ADMINISTRATIVE TRIBUNAL OF THE BUILDING SUB-COUNCIL**

(the "Tribunal")

ON APRIL 5, 2023

IN THE MATTER OF the *Safety Codes Act*, Revised Statutes of Alberta 2000, Chapter S-1 (the "Act");

AND IN THE MATTER OF the order of a safety codes officer dated December 27, 2022 (the "Order") for [REDACTED] ("the Building") issued to Groupe Touchette Real Estate Inc. (the "Appellant") by the City of Calgary (the "Respondent");

UPON REVIEWING AND CONSIDERING the evidence named in **The Record**, including written submissions of the Appellant and Respondent; and **UPON HEARING** the testimony of the parties at the hearing;

IT IS HEREBY ORDERED THAT the Order is varied.

Appearances, Preliminary, Evidentiary, or Procedural Matters:

1. The hearing for this matter was conducted by virtual means.
2. At the commencement of the hearing, the Coordinator of Appeals confirmed the subject of the appeal as the Order and confirmed the names of those in attendance:
 - a. Appearing for the Appellant, the Tribunal heard from: [REDACTED]
 - b. Appearing for the Respondent, the Tribunal heard from: [REDACTED].
 - c. Facilitating the hearing on behalf of the Safety Codes Council: [REDACTED].
 - d. Attending as Technical Advisor for the hearing: [REDACTED].
 - e. Attending as observers for the hearing: [REDACTED]
3. The Coordinator of Appeals then introduced the Chair of the Tribunal (the "Chair"), [REDACTED] and turned the hearing over to them.

4. The Chair called the hearing to order and introduced the other Tribunal members: [REDACTED], [REDACTED].
5. The Appellant and Respondent confirmed there were no objections to any members of the Tribunal, and that the Safety Codes Council in general and the Tribunal in particular had jurisdiction to hear and decide the appeal. The Tribunal also confirmed they had jurisdiction to hear and decide this appeal.
6. The Chair then explained the process of the hearing and advised of the list of the written material before the Tribunal, consisting of the documents listed below in **The Record** (see paragraph 7). The Appellant confirmed that there were no objections to any of the material submitted to the Tribunal. The Respondent had an objection to some of the documents in Exhibit 4 Appellant indicating issues related to relevancy, bringing in information from other buildings, and redaction of information in some of the documents. The Tribunal accepted Exhibit 4 Appellant determining it was relevant.

The Record:

7. The Tribunal considered, or had available for reference, the following documentation:

<u>Item</u>	<u>Description</u>	<u>Date</u>
i.	Notice of Appeal	January 30, 2023
ii.	Safety Codes Council’s Appeal Acknowledgment Letter	February 1, 2023
iii.	Application for Stay Pending Appeal	February 21, 2023
iv.	Stay Pending Appeal – Appellant’s Additional Information Requested from Administrator	February 23, 2023
v.	Stay Pending Appeal – Respondent’s Submission	February 23, 2023
vi.	Stay Pending Appeal – Appellant’s Rely Submission	February 24, 2023
vii.	Safety Code’s Council’s Stay of Order with Condition	February 27, 2023
viii.	Safety Codes Council’s Notification of Hearing Letter	March 6, 2023
ix.	Exhibit 1 Appellant – Appellant’s Appeal Brief	-
x.	Exhibit 2 Appellant – Appellant’s Preliminary Engineering Report	-
xi.	Exhibit 3 Appellant – Appellant’s Preliminary Engineering Report Appendices D-H	-
xii.	Exhibit 4 Appellant – Natural Resources Canada earthquake data, email exchanges related to occupational health and safety, email	-

from manufacturer, and November 23, 2022 Occupational Health and Safety Contact Report

- xiii. **Exhibit 1 Respondent** – Respondent’s Appeal Brief -
- xiv. **Exhibit 2 Respondent** – Ownership of Building Title -

Issue:

- 8. This appeal concerns issuance of the Order for the Building to the Appellant by the Respondent with respect to storage racks issued under the National Building Code – 2019 Alberta Edition (the “Code”).

Positions of the Parties:

Appellant

From the Appellant’s submissions and testimony, the Appellant’s position is summarized as follows:

- 9. It is the Appellant’s position that the Order be revoked as the storage racks are portable and not subject to the Code.

Respondent

From the Respondent’s submissions and testimony, the Respondent’s position is summarized as follows:

It is the Respondent’s position that the Order be confirmed with the timeline for compliance varied and additional conditions added to ensure engineering experts are overseeing the project as the storage racks are not portable and are subject to the Code.

Summary of the Evidence Provided on Behalf of the Appellant:

Submissions on behalf of [REDACTED]

- 10. The Appellant’s storage racks are not designed to be anchored to the building, so they are free-standing.
- 11. The Appellant’s free-standing storage racks are designed by the manufacturer to be moved by forklift while storing tires and are used this way, so they are portable storage racks. This was confirmed by a Code review by a professional engineer (The Record - Exhibit 2 and Exhibit 3 Appellant).
- 12. The Appellant’s free-standing storage racks are designed by the manufacturer to directly store tires on each rack and then to stack each rack. These individual racks do not use a separate pallet for stored tires to sit on. Therefore, these are not free-standing pallet storage racks.

13. Free-standing, portable storage racks are not a building, nor are they a structure or an alteration to a building. Therefore, they are not subject to the Code, and no permit and compliance is required as directed by the Order.

14. While floor-mounted steel pallet storage racks are included in the table in section 4.1.8.18 of the Code that includes “Elements of Structure, Non-Structural Components and Equipment”, neither free-standing steel pallets nor portable racks are listed in the table. Free-standing steel pallet storage racks are mentioned in sentence (13) of Article 4.1.8.18 and allows them to meet different requirements. The relevant excerpt is reproduced below:

Article 4.1.8.13 (13) Free-standing steel pallet storage racks are permitted to be designed to resist earthquake effects using rational analysis, provided the design achieves the minimum performance level required by Subsection 4.1.8. (See Note A-4.1.8.18.(13).)

15. The Structural Commentaries - (User’s Guide - NBC 2015: Part 4 of Division B) also support the conclusion that free-standing storage racks and portable storage racks are not a component of or an alteration to a building. The relevant excerpts are reproduced below:

229 Items that are attached to buildings, i.e. non-loading bearing structural elements, architectural components, mechanical equipment and electrical equipment, must be designed so that they neither fail nor become detached from the building during earthquake ground motion and become a major threat to life safety. ...

230 The design requirements in NBC Article 4.1.8.18 are intended to ensure that attached components and their connections to the building retain their integrity during ground shaking.

243 ... Interior structures, such as free-standing storage racks, that are at or below grade and surrounded by, but not otherwise connected to, the building structure should be analyzed either as separate structures or as Category 23 or 24 components from NBC Table 4.1.8.18. ... Other rack structures within a building, such as portable racks, cantilever racks, drive-in/drive-through racks and shelving, are not included in the scope of these documents.

16. The Order was unreasonable as the timeframe for compliance and requirement to only using the free-standing storage racks at one level will result in the Appellant sustaining significant financial losses and negatively affect the supply chain in Alberta.

17. The Order has no effect because it conflicts with occupational health and safety’s decision the free-standing storage racks are safe at higher levels under occupational health and safety legislation and provincial occupational health and safety legislation has paramountcy over local safety codes.

18. The Order was issued for an improper purpose and in bad faith as the Respondent involved the occupational health and safety regulators and had charges laid for contravening the *Act* while they were still negotiating compliance.

Evidence on behalf of Shawn Meerveld:

19. The witness is employed by the Appellant to manage projects and operations.

20. The Appellant's storage racks are not connected to the Building by the wall or floor. The storage racks enable individual storage racks to be stacked on top of each other. Individual storage racks are moved using a forklift. Examples of the use of the racking system include: removing the top one or two storage racks using a forklift and placing the cages in a truck for transportation to a client; using the forklift to take a few tires from a storage rack and putting them in a truck for transportation to a client. The storage racks are usually stacked until there are five storage racks on top of each other.
21. These storage racks have been in use by the Appellant at locations across Canada for around 30 years and in the area under the Respondent's jurisdiction at other locations since 2015.
22. There have been no issues with the storage racks related to seismic events. This is known because Natural Resources Canada seismic data from 2014 to present (The Record –Exhibit 4 Appellant) was reviewed to determine whether the Appellant's locations were impacted and then whether there were any safety incidents related to storage racks at that time. The results were that no seismic events were felt at the Appellant's locations and none of the storage racks failed due to a seismic event.
23. In February 2021, the Appellant began operations at the Building.
24. In August 2021, the Respondent toured the Building. Following this, a notice was received indicating there were concerns about the lateral loading for the storage racks and the request to change the use of the storage racks so they are anchored to the Building when stacked.
25. In November 2021, the Respondent indicated to the Appellant that a permit was required for the Building and that a professional engineer would need to attend a meeting between the parties.
26. In December 2021, the Appellant and Respondent came to an interim agreement to reduce the number of racks stacked on top of each other while the permit was pursued. The December permit application was not approved by the Respondent because the engineering documents provided did not verify that the storage racks, when stacked, were safe given various types of loading - specifically there was no assessment of lateral loading.
27. In December 2022, the Respondent brought in their engineer to tour the facility with the approval of the Appellant. The engineer had a short tour and did not perform any tests or interview any employees. Following this, the Order was received, which included a requirement to reduce the number of storage racks in each stack.
28. Currently, the majority of the Building's storage racks are stacked two storage racks high. There are approximately five rows that are stacked 3 storage racks high. There are no storage racks stacked four high. All the storage racks are stacked with like storage racks and associated parts.

Evidence on behalf of [REDACTED]:

29. The witness is employed by the Appellant to manage occupational health and safety and has relevant education and experience in occupational health and safety. The witness has been present at the Building more than 10 times in the past two years.

30. The witness had multiple meetings and interactions from October 2021 to January 2022 with a Government of Alberta occupational health and safety officer related to identifying and addressing safety issues under the *Occupational Health and Safety Act*, safety issues including not following manufacturer guidelines by using damaged storage racks and components and stacking storage racks incorrectly in various ways.
31. On January 24, 2023, an occupational health and safety officer conducted a re-inspection of the Building and issued an Occupational Health and Safety Contact Report indicating that compliance was achieved for the issues under the Occupational Health and Safety Act (The Record - Application for Stay Pending Appeal).
32. No discussion related to compliance under the Code occurred with the occupational health and safety officer and none of the Appellant's engineering reports discussing the structural sufficiency of the racking system were provided to the Government of Alberta's occupational health and safety office for consideration.
33. The Crown in Right of Alberta has commenced charges against the Appellant. On December 15, 2022, the officer swore an Information charging the Appellant under section 67(4)(d) of the *Act* which states a person who "fails to carry out any action required in an order to be taken within the time specified in it, is guilty of an offence" (The Record – Application for Stay Pending Appeal). In January 2023, the Appellant and certain employees or related employees were served with a summons to appear in the Provincial Court of Alberta to answer to the charges. The witness was aware that there were concerns and orders of non-compliance before receiving the summons.

Evidence on behalf of [REDACTED]:

34. The witness is the owner of the Appellant.
35. The Appellant has over 25 locations in Canada and in every Canadian province except Prince Edward Island and has been in business for over 45 years and in the Respondent's jurisdiction since 2012.
36. The racking system is used in all their locations and there would be a profound negative impact on their businesses if it could no longer be used without the racks being fixed.
37. The racking system is designed for tire storage and other uses and is the only racking system suitable to their business in terms of capacity and efficiency. Other racking systems would be less efficient.
38. The Building is for tire distribution only, it is not a retail store for the public.
39. The witness was not aware of the details of the order, the Respondent's permitting process, or the Appellant's engineering report that indicates that stacking storage racks at higher levels presents safety issues.

Evidence on behalf of [REDACTED]:

40. The witness is a professional engineer in Alberta focused on structural engineering, employed by H Group Structural Engineering.
41. In 2022, upon the request of the Appellant, the company completed a study to review the vertical/gravity loading of the storage racks. The witness allowed that in hindsight the analysis was too limited and should have included other forces that could reasonably be expected to be exerted

on the racking system in addition to the gravity loading, including lateral, seismic and wind, and potentially impact loading, although not all these forces are generally required by the Code.

42. On March 27, 2023, upon request of the Appellant, a preliminary study to “review the structural adequacy of the storage racks at the Building was completed and provided to the Appellant (The Record –Exhibit 2 and Exhibit 3 Appellant).
43. The study was based on site visits to the warehouse, review of material specifications and sizes provided by the client and produced by the manufacturer, a review of the relevant building codes, desktop analysis of the racking assemblies, SAP2000 modelling of the racking assemblies, and in-house testing of storage racks stacked (The Record –Exhibit 2 and Exhibit 3 Appellant). The study did not model or test the impacts of two storage racks systems placed back-to-back, which is how they are placed in the Building.
44. Site visit observations were of two types of storage racks. The first type is blue rated by the manufacturer for 1000 kg per and stackable up to four high. The second type is orange and rated by the manufacturer for 1100 kg per and stackable to five high. The racks are flexible and could be made to deflect and sway laterally pushing back and forth by hand. Neither racking system is designed to be fastened or connected to the floor and the individual storage racks are only designed to store tires (The Record –Exhibit 2 Appellant).
45. The building codes review found that the Code includes direction in respect to design of fixed storage racks and provides a number of design code references and collectively indicates that portable storage racks are excluded from the Code. The Appellant’s storage racks are portable. The witness was not aware of anyone having conducted the alternative analysis related to seismic loading for fixed, free-standing storage racks, as permitted by the Code.
46. The design load calculations assumed that the Code applies, even though that may not be the case. The equivalent static lateral loads were calculated for each separate portable pallet and applied that load at mid-height of each pallet. The limit state design factors were applied as outlined in the Code and a “low” importance factor was selected as the Building is a low human-occupancy building, defined as a building demonstrating that collapse is not likely to cause injury or other serious consequences (The Record – Exhibit 2 Appellant).
47. Based on the witness’s desktop analysis of the storage racks, fastening of the storage racks to the concrete at their base is a minimum requirement if stacking to four high is to be implemented (The Record – Exhibit 2 Appellant).
48. SAP2000 modeling analysis, which is a civil-engineering software for structural system analysis and design, was used to model the racking system. The SAP2000 modeling analysis assumed pinned supports at the base of racks and a connection between storage racks, suggested:
 - storage racks may be stacked to two high without reinforcement;
 - storage racks stacked to three high appeared to require reinforcement in their longitudinal, or down aisle direction; and
 - storage racks stacked to four high appeared to require connection to the base slab and reinforcement in both directions.

(The Record – Exhibit 2 Appellant).

49. The Witness's in-house testing in March 2023 of stacking storage racks two, three and four high found:

- lateral deflections exceeded lateral deflections recommended for building design in all cases;
- there was no material failure of members or connections during testing to two high stacks;
- storage racks stacked three high or more sometimes showed permanent lateral deflection after removal of lateral loads, although there was no member or connection material damage;
- performance of storage racks appeared acceptably strong stacked to two high without reinforcement but showed high deflection, as much as 160mm, at design load;
- storage racks stacked to three high appear to require reinforcement in their longitudinal, or down aisle, direction to accommodate loads required;
- racks stacked three high showed excessively high deflections, in some cases over 400mm at end of testing;
- storage racks stacked to four high appeared to require connection to the base slab, and reinforcement in both directions; and
- storage racks stacked four high showed excessively high deflections, in some cases, in some cases over 700mm at end of testing

(The Record – Exhibit 2 Appellant).

50. Future additional testing and additional information, such as all the storage racks specifications from the manufacturer, is needed and the Appellant is considering other types of testing (The Record – Exhibit 2 Appellant).

51. The preliminary conclusions, given the significant strength of the stacked storage racks are:

- Storage racks stacked to two high without reinforcement appear to be acceptable;
- storage racks stacked to three high appear to require reinforcement in their longitudinal, or down aisle, direction; and
- racks stacked to four high appear to require connection at base, and reinforcement in both directions (The Record – Exhibit 2 Appellant).

52. The witness stated that, while the conclusions presented were preliminary, the conclusion would not significantly change with additional analysis.

53. There are concerns if there was a seismic event but given that additional testing is needed and that the storage racks have been in use without incident for many years, it is premature to direct the Appellant to reduce the height of the stacking of the storage racks. This analysis would change if the storage racks were fastened to the Building.

Summary of the Evidence Provided on Behalf of the Respondent:

Submissions on behalf of [REDACTED]:

54. Under the Act and associated regulations, buildings must comply with the Code.

55. The Order was issued under the *Act*, which the Respondent is accredited to be a delegate of the province to deliver. It is not a municipal code.
56. A building permit is required as the storage racks are an alteration and addition to the Building and life safety is at issue.
57. The storage racks are only portable if they are not stacked, which is not how it is used by the Appellant. Stacking storage racks at two or more levels results in the storage racks not being portable. The manufacturer guidelines indicate that storage racks must never be moved when stacked (The Record –Exhibit 1 Respondent).
58. Since July 29, 2021, the Appellant has been informed of the requirements for a building permit for the storage racks (The Record – Exhibit 1 Respondent).
59. The Respondent has provided ongoing support and documentation since approximately the end of July, 2021, including building permit deficiencies lists, Code analysis documents, emails, meetings, and inspections (The Record – Exhibit 1 Respondent).
60. The Order was issued by a safety codes officer acting within their jurisdiction and was issued in good faith with safety being the focus of actions.
61. Through various inspections, the Respondent has observed that the storage racks have been used improperly by being top loaded or unevenly loaded and damaged storage racks being used, which is not according to the manufacturer’s instructions (The Record –Exhibit 1 Respondent).
62. No professional engineer registered to practice in the province of Alberta has provided full assurances for the storage racks, including seismic and lateral loads (The Record –Exhibit 1 Respondent).
63. Occupational health and safety legislation is not conflicting, nor does it have paramountcy to the *Act* and associated regulations and has no bearing on this appeal.

Evidence on behalf of [REDACTED] :

64. The witness has been a safety codes officer for 11 years. Prior to her work as a safety codes officer, the witness worked as an architect for 11 years previously. The witness issued the Order.
65. On July 29, 2021, an inspection was completed and a notice provided directing the Appellant to obtain permits required for the installation of storage racks, fire alarm and sprinkler verification and any work required under the Code. Compliance was required on August 4, 2021 (The Record – Exhibit 1 Respondent).
66. On July 30, 2021, and August 3, 2021, two separate building permit applications, BP2021-13489 and BP2021-13543, were received. On August 23, 2021, the Appellant was notified via pre-screen email that there was insufficient information to start a review (The Record –Exhibit 1 Respondent).
67. On each of August 10, 2021, August 26, 2021 (following an inspection), and November 5, 2021, notices were provided directing the Appellant to stop work, stop occupancy, obtain the permits required and complete any work required under the Code (The Record –Exhibit 1 Respondent).

68. On November 10, 2021, a building permit was issued for [REDACTED], the scope of which excluded the free-standing storage racks (The Record –Exhibit 1 Respondent).
69. On November 23, 2021, a building permit application, [REDACTED] was received for the free-standing storage racks. The application was not approved because of insufficient information provided (The Record –Exhibit 1 Respondent).
70. In February 2022, the Respondent had discussions with the Appellant indicating that the documentation on the free-standing storage racks had not provided sufficient information to assure the Respondent that the storage racks are designed to accommodate building deflections in alignment with the Code (The Record –Exhibit 1 Respondent).
71. On March 21, 2022, an order dated March 8, 2022, was served on the Appellant, directing the Appellant to obtain a permit for the free-standing storage racks, provide written verification for the construction project, remove all illegal construction, and to notify the Appellant that tasks were completed by May 4, 2022 (The Record –Exhibit 1 Respondent).
72. On August 15, 2022, occupancy was granted for [REDACTED], the scope of which excluded the free-standing storage racks. This building permit included sprinkler systems, fire alarms, washrooms, the anchored storage racks, and assumed that the free-standing storage racks would obtain a permit for compliance (The Record –Exhibit 1 Respondent).
73. On November 3, 2022, following an inspection, a notice was provided directing the Appellant to stop work, stop occupancy, and obtain permits required and complete any work required under the Code. Compliance with the March 21, 2022, order was not met (The Record –Exhibit 1 Respondent).
74. On December 1, 2022, an inspection was completed and a notice provided on December 2, 2022 directing the Appellant to fully comply with the March 21, 2022 order requirements (The Record –Exhibit 1 Respondent).
75. On December 9, 2022, an inspection was completed and a notice provided on December 13, 2022, directing the Appellant to fully comply with the March 21, 2022 order requirements (The Record –Exhibit 1 Respondent).
76. On December 21, 2022, an inspection was completed with the Respondent’s professional engineer (The Record –Exhibit 1 Respondent).
77. On December 22, 2022, the Respondent’s engineering assessment was received, which recommended the free-standing storage racks be dismantled and the tires stored in individual storage racks until the stacked storage racks are designed and constructed to resist lateral loads described in the Code (The Record –Exhibit 1 Respondent).
78. On December 27, 2022, the Order was served directing the Appellant to obtain a permit for the free-standing storage racks, provide written verification for the construction project, remove all illegal construction, and to notify the Respondent tasks were completed by February 28, 2023 (The Record –Exhibit 1 Respondent). This is the renewal of the March 21, 2022 order.
79. Between March 24, 2022, and December 2022, the Respondent had discussions and reviewed documents with the Appellant to obtain sufficient information required and to remove illegal

construction related to the free-standing storage racks. The Appellant stopped responding in December, 2022.

80. On February 15, 2023, an inspection was completed and a notice provided on February 16, 2022. The Notice stated that notice from November 5, 2021, remained outstanding and directed the Appellant to stop work and cease occupancy, to have no storage on the racking until written permission had been obtained by the Safety Codes Officer, and to provide professional engineer stamped drawings for the racking by November 17, 2021 (The Record –Exhibit 1 Respondent).
81. Multiple site inspection observations confirmed that three different types of storage racks were in use at the Building. The first type is free-standing blue storage racks which are stackable up to four high. The second type is free-standing orange and yellow storage racks which are stackable to five high. The third are anchored storage racks, not subject to the Order.
82. The free-standing storage racks are not portable when stacked. No observations were made that the individual storage racks were moved by forklift. It is also not possible to move the lower storage racks with other storage racks stacked on top of them.
83. The Building’s free-standing storage racks are subject to article 2.2.10.1.(1) of the Code because it meets its definition of an alteration and addition to the Building, as it was added to the Building and affects safety, including affecting appropriate design for the sprinkler system). The Code defines alteration as a change or extension to any matter or thing or to any occupancy regulated by this Code. The Oxford University Press 2004, Canadian Oxford Dictionary, 2nd Edition, defines addition as the act of process of adding or being added or a person or thing added (The Record –Exhibit Respondent 1).
84. The Building’s free-standing storage racks are subject to article 4.1.8.18 of the Code because it is an element or component of the building, given that article 4.1.8.18.13 discusses free-standing steel pallet storage racks and indicates that an alternative approach may be used to calculate and ensure the design is appropriate to accommodate building deflections. The Building’s free-standing storage racks meet the definition of a rack. The Building’s free-standing storage racks also are considered pallets as the individual storage racks are used as portable platforms for transporting and storing loads. The relevant excerpts from Oxford University Press 2004, “Canadian Oxford Dictionary, 2nd Edition are reproduced below (The Record –Exhibit 1 Respondent):

Pallet n.– a portable platform for transporting and storing loads.

Rack n. – a framework usu. with rails, bars, hooks, etc., for holding or storing things (roof rack; coat rack).

85. Note A-4.1.8.18(1) of the Code indicates that free-standing steel pallet storage racks contain only materials typically loaded by forklift. They are designed to store loaded pallets, however in some cases, the stored material does not sit on a pallet. There is no occupancy within the racks. Information on racks can be found in the Commentary entitled Design for Seismic Effects in the “Structural Commentaries (User’s Guide – NBC 2015: Part 4 of Division B) (The Record –Exhibit 1 Respondent).
86. The Appellant has not obtained a permit for the free-standing storage racks nor demonstrated the necessary assurances that the free-standing storage racks are appropriately designed to

accommodate building deflections when stacked. Additionally, the Appellant's March 27, 2023, preliminary engineering report (The Record –Exhibit 2 and Exhibit 3 Appellant) indicates there would be safety issues if the free-standing storage racks are stacked at higher levels allowed by the manufacturer.

Evidence on behalf of [REDACTED]:

87. The witness is a professional engineer in Alberta, employed by RJC Engineers.
88. In December 2022, at the request of the Respondent, an assessment of the free-standing storage racks at the Building was completed to comment on the free-standing racking system's compliance with the Code.
89. On December 22, 2022, a structural assessment letter was provided to the Respondent. The structural assessment letter was based on one site visit to the warehouse and a review of manufacturer guidelines.
90. Site visit observations were that multiple free-standing storage racks were observed with varying levels of stacking between four and five storage racks high. The free-standing storage racks are not designed to be fastened or connected to the floor and the storage racks are only designed to store tires.
91. The Code review found that the Code includes direction in respect to design of fixed storage racking and provides several design code references. Specifically, article 4.1.8.18 would apply because the free-standing storage racks are not portable when they are stacked.
92. The recommendation is that the free-standing storage racks be dismantled so they are no longer stacked until the racking system is designed and constructed to resist lateral loads described in the Code. Dismantling would make the racks portable. There are limitations to this analysis.
93. The witness stated that the importance factor should be 1.0 for design load calculations because the Building was designed using a 1.0 importance factor.

Evidence on behalf of [REDACTED]:

94. The witness has been a safety codes officer for over 20 years.
95. The Respondent has been clear that the Code applies to the free-standing storage racks when stacked, as they are not portable, and that it is necessary for a professional engineer registered to practice in the province of Alberta provides full assurances of this free-standing storage racks stacking, including seismic and lateral loads.

Technical Advisor – Questions & Answers:

96. Richard Frederick was the Technical Advisor with Alberta Municipal Affairs present for the hearing. The role of the Technical Advisor is to clarify questions of the Tribunal regarding the interpretation of the relevant codes and any related code issues.

97. The Tribunal deliberated on the questions for the Technical Advisor in camera. All parties including the Technical Advisors and observers reconvened in the virtual hearing room and the Chair posed the Tribunal’s questions to the Technical Advisor and received the following responses:

98. There is no definition for free-standing storage racks in the Act, regulations, or the Code, so the Canadian Oxford Dictionary, 2nd edition must be used, as stated at section 1.4.1.1.5 in the code. The relevant excerpt is reproduced:

Free-standing adjective 1 not supported by another structure. 2 not affiliated with a larger organization: autonomous.

99. There is no definition of portable in the Code, so the Canadian Oxford Dictionary, 2nd edition must be used. The relevant excerpt is reproduced:

Portable adjective 1 a. easily movable or transportable, convenient for carrying (*portable TV*; portable computer. b. not fixed; movable (*portable classroom*)... noun 1 a portable object, e.g. a radio, computer, etc. (*decided to buy a portable*). 2 a small transportable building used as a classroom.

100. There is no definition for floor-mounted in the Code, so the Canadian Oxford Dictionary, 2nd edition must be used. The relevant excerpts are reproduced:

Floor noun 1 a. the lower surface of a room. B. the boards etc. of which it is made...

Mount ... 7 a. set in or attach to a backing, setting or other support b. attach (a picture etc.) to a mount or frame. C. fix (an object for viewing) on a microscope slide...

101. The provision in the Code that is related to free-standing storage racking is predominately article 4.1.8.18 Elements of Structures, Non-structural Components and Equipment. The relevant excerpts are reproduced (Notes are not a mandatory part of the code and are intended to help understand the intent of the code):

4.1.8.18 1) Except as provided in Sentences (2), (7) and (16), elements and components of *buildings* described in Table 4.1.8.18. and their connections to the structure shall be designed to accommodate the *building* deflections calculated in accordance with Article 4.1.8.13. and the element or component deflections calculated in accordance with Sentence (9), and shall be designed for a lateral force, V_p , distributed according to the distribution of mass: $V_p = 0.3F_a S_a (0.2) I_E S_p W_p$...

Table 4.1.8.18 elements of Structures and Non-structural Components and Equipment...

Category	Part or Portion of <i>Building</i>
23	Floor-mounted steel pallet storage racks ⁽⁴⁾
24	Floor-mounted steel pallet storage racks on which are stored toxic or explosive materials or materials having a flash point below 38°C ⁽⁴⁾ .

Notes to Table 4.1.8.18:...

⁽⁴⁾ See Sentence (13) and Note A-Table 4.1.8.18.

...

- (13) Free-standing steel pallet storage racks are permitted to be designed to resist earthquake effects using rational analysis, provided the design achieves the minimum performance level required by Subsection 4.1.8.(See Note A-4.1.8.18.(13).)

...

Note A-4.1.8.18.(13) Storage Racks. Free-standing steel pallet storage racks contain only materials typically loaded by forklift. They are designed to store loaded pallets, however in some cases, the stored material does not sit on a pallet. There is no occupancy within the racks. Information on racks can be found in the Commentary entitled Design for Seismic Effects in the “Structural Commentaries (User’s Guide – NBC 2015: Part 4 of Division B).”

- 102.** The “Structural Commentaries (User’s Guide – NBC 2015: Part 4 of Division B)” are clear that the Code applies to floor-mounted steel pallet storage racks and is less clear as to whether it applies to free-standing steel pallet racks. It is clear that portable racks are not included within the scope of the documents, including: the code, NAC Testing Utilization of Testing Storage Racks, FEMA 460 Seismic Considerations for Steel Storage Racks Located in Areas Accessible to the Public, and CSA A344 User guide for steel storage racks.
- 103.** The intent of the Code is to apply to free-standing storage racks and floor-mounted storage racks. Other types of racks, like portable racks, are outside of the scope.

Findings of Fact:

The Tribunal makes the following findings:

- 104.** On July 29, 2021, following an inspection, a notice was provided to the Applicant indicating the construction at the Building was not in compliance with the Code.
- 105.** On August 15, 2022, occupancy was granted to the Building under a building permit [REDACTED] with a scope that excluded free-standing storage racks. The building permit was provided with the assumption that the free-standing storage racks excluded under the permit would be subject to the Code and were fixed racks.
- 106.** There are two types of racking that were excluded from the building permit. The first type is blue racking rated by the manufacturer for 1000 kg per and stackable up to 4 high. The second type is orange racking rated by the manufacturer for 1100 kg per and stackable to 5 high.
- 107.** The manufacturer has designed both types of racks so that individual racks can: directly store tires, be moved by forklift while storing tires, have individual tires removed and not just the entire rack, can be stacked on each other up to a certain number, and are not to be fastened or anchored to anything. The manufacturer indicates that racks must never be moved while stacked.
- 108.** Between July 2021 and December 2022, multiple inspections occurred, engineering reports were received, multiple notices were sent directing compliance, and a previous order was issued related to the free-standing storage racks excluded from the building permit. Actions were taken by both

the Respondent and Appellant to work toward addressing safety issues, including reducing the height of stacking the free-standing storage racks in the Building.

109. On December 27, 2022, the Order was issued and served. It indicated that free-standing storage racks excluded from the building permit had been constructed at the Building and the work was not in compliance with the Code. It ordered the Appellant to provide written bi-weekly updates of the progress, obtain a building permit for the construction of the storage racks, provide written verification for the construction project or remove all illegal construction, and to notify the Respondent to arrange a final inspection of the completed work.
110. Both the blue and orange types of storage racks meet the definition of free-standing, as they are not supported by another part of the Building and not designed to be floor or wall mounted.
111. Both types of racks meet the definition of portable when they are not stacked, as they are designed to be easily moved and are not fixed in place.
112. Both types of racks meet the definition of portable when stacked, as the individual racks within a stack can be moved by the use of a fork lift, and are not fixed in place.
113. The Code does not apply to portable racks, given the administrative guidance in sentence 243 of the Structural Commentaries - (User's Guide - NBC 2015: Part 4 of Division B) that explicitly indicates that portable racks are not included in the scope of the documents.
114. The Building and the configuration of the floor area due to the presence of portable racks are subject to the Code, as the portable racks may affect other elements of structures, non-structures and equipment subject to the Code, such as life fire and safety. These may have been altered since the previous building permit BP2021-13489 was issued and occupancy granted.
115. The *Occupational Health and Safety Act* and *Act* both have complementary provincial authority related to safety and are not in conflict. Occupational health and safety officers address safety issues under their jurisdiction and safety codes officers address safety issues under their jurisdiction.
116. Engineers on behalf of the Appellant and Respondent have both reported that there are potential safety issues if the free-standing storage racks are stacked.

Reasons for Decision:

117. On an appeal such as this, the powers of the Tribunal are set out in subsection 52(2) of the *Act*, the relevant excerpt is reproduced below:

52(2) The Council may by order

- (a) confirm, revoke or vary an order, suspension or cancellation appealed to it and as a term of its order may issue a written variance with respect to any thing, process or activity related to the subject-matter of the order if in its opinion the variance provides approximately equivalent or greater safety

performance with respect to persons and property as that provided for by this Act.

118. The Order was issued pursuant section 49(1) of the Act, the relevant excerpt is reproduced below:

49(1) A safety codes officer may issue an order if the safety codes officer believes, on reasonable and probable grounds, that

(a) this Act is contravened, or


(b) the design, construction, manufacture, operation, maintenance, use or relocation of a thing or the condition of a thing, process or activity to which this Act applies is such that there is danger of serious injury or damage to a person or property.

119. An order can only be issued when there is non-compliance with the Act, pursuant to section 49(4), which includes the Code’s minimum requirements.

120. The Tribunal finds, based on the evidence before it, that the Building is subject to the Act and Code and that the existing free-standing storage racks are portable and as such are not subject to the Act and Code; accordingly the Order is varied to order the Appellant to:

1. Obtain a valid and subsisting building permit for the Building, with a scope excluding portable storage racks, in accordance with the requirements of Article 2.2.10.1 of Division C of the Code no later than 16:00 hours on the 24th date of June 2023, if the existing building permit BP2021-13489 does not cover the Building’s current configuration; and
2. Notify all authorities having jurisdiction including the safety codes officer to arrange for an inspection to confirm compliance with the existing building permit or a new building permit for completed work no later than 16:00 hours on the 24th date of June 2023.

Signed at the City of Calgary)
in the Province of Alberta)
this 25th day of May 2023)
)


Chair, Building Sub-Council
Administrative Tribunal