

Report of:

- **2018 British Columbia Building Code - Part 9**
- **2015 National Building Code of Canada - Part 9**
- **2012 Ontario Building Code - Part 9**

WARNING

Comply with all applicable building codes. Before using this product, ensure foundation is suitable. Not suitable for all applications or any commercial use. Do not overload. Wear protective attire and eyewear.

March 16, 2021
Project No: L21-037

Peak Products Manufacturing Inc.
www.peakproducts.com

PROJECT: Peak® Stair Riser Compliance.

SUBJECT: **Structural Review of Peak® Stair Riser to Canadian Building Codes**

This letter summarizes the findings of our review of the structural resistance of the Peak® Stair Riser.

Product Description

Peak® Stair Risers come in 1 to 7 step configurations and are constructed of hollow structural steel sections with steel straps welded to the hollow section forming the horizontal tread support. All configurations have a step rise of 192 mm, a run of 264 mm, and are designed to support 2-2x6 or 1-2x12 treads. The specified steel strength of the hollow section and steel strap is 235 MPa. Drawings of the various configurations are included in Appendix A.

Structural Loads

The Peak® Stair Risers were reviewed for their resistance to residential live load of 1.9 kPa. The dead load was calculated to be the self-weight of the riser with 2x12 wood treads. Deflection of the riser and treads was limited to the span divided by 240 (L/240).

Standards

Peak® Stair Risers were evaluated in accordance with the following codes:

- National Building Code of Canada 2015
- British Columbia Building Code 2018
- 2019 Vancouver Building By-Law
- Ontario Building Code 2012 (Including updates to January 1, 2020)

Steel components were evaluated in accordance with the principles of CSA-S16, and timber components were evaluated in accordance with the principles of CSA-O86.



FINDINGS

Peak® Stair Risers provide adequate resistance to residential floor loads, with a maximum live load deflection of $L/240$, given the span limitations illustrated in Appendix A.

Notes:

1. L is the sloping span of the riser.
2. Some jurisdictions may require closed risers.

Closure

The Peak® Stair Risers were found to meet the requirements, for use in dwelling units, within Part 9 of the National Building Code of Canada 2015, the British Columbia Building Code 2018, and the Ontario Building Code 2012 (Including updates to January 1, 2020). Limitations of compliance are defined in the findings above, and in the assembly drawings presented in Appendix A.

Yours truly,

Latera Engineering Inc.



2021-03-16
Per: Cameron Robinson, P.Eng.

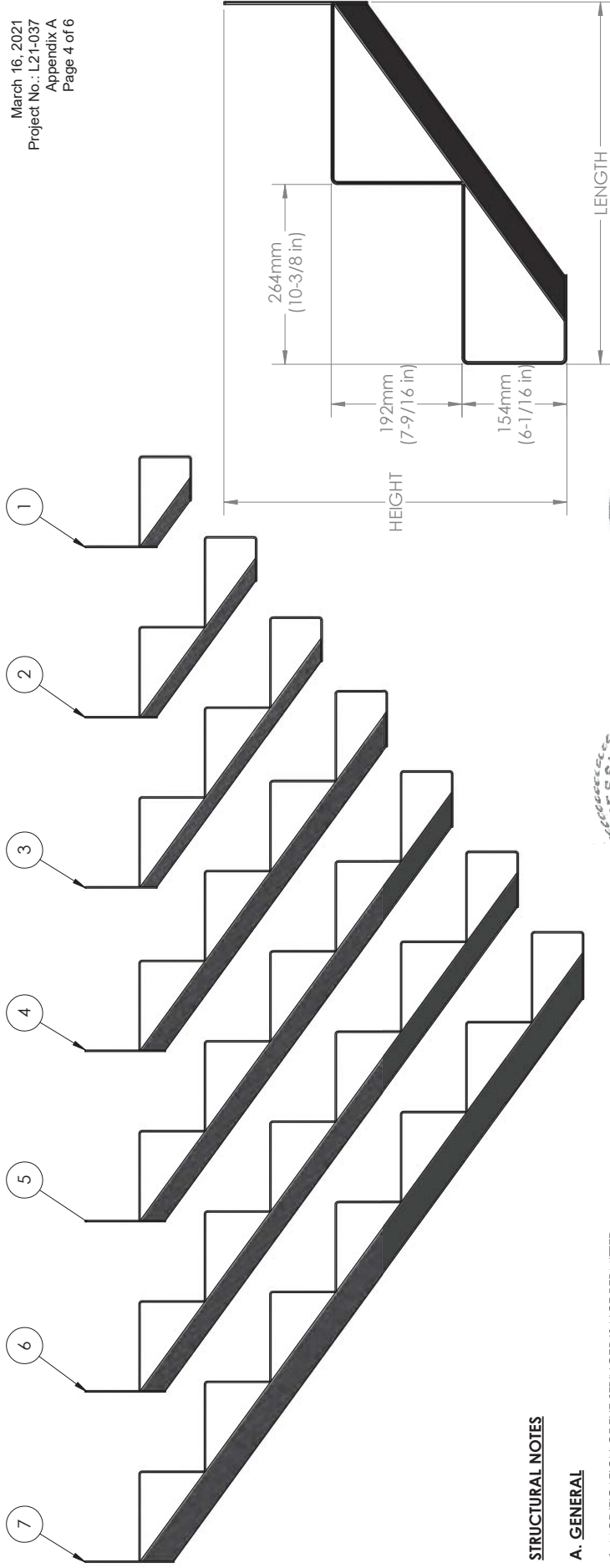


Reviewed by: J. David Howard, P.Eng.



Appendix A

Drawings
(3 pages)



STRUCTURAL NOTES

A. GENERAL

1. MODIFICATION OF THE STRINGER IS NOT PERMITTED.
2. STAIR STRINGER IS INTENDED FOR RESIDENTIAL USE ONLY (PART 9).

B. BUILDING CODE AND MATERIAL DESIGN STANDARDS.

1. NATIONAL BUILDING CODE OF CANADA (NBC) 2015.
2. BRITISH COLUMBIA BUILDING CODE (BCBC) 2018.
3. 2019 VANCOUVER BUILDING BYLAW (VBBL), NO: 12511.
4. 2012 ONTARIO BUILDING CODE INCLUDING UPDATES TO JANUARY 1, 2020.
5. CSA O86-14 ENGINEERING DESIGN IN WOOD.
6. CSA S16-14 LIMIT STATES DESIGN OF STEEL STRUCTURES.
7. CSA W59-13 WELDED STEEL CONSTRUCTION (METAL ARC WELDING).
8. CSA W48-14 FILLER METALS AND ALLIED MATERIALS FOR METAL ARC WELDING.

C. DESIGN LOADS

1. GRAVITY LOADS:
 SNOW OR LIVE LOAD (NOT CONCURRENTLY): 1.9 kPa (40 psf)

D. STRUCTURAL STEEL

1. STRUCTURAL STEEL: Q235, GALVANIZED 40-50 g/m².



2021-03-16



TITLE
 General Information

PART FILE
 Report SKUs - CAN

DWG REV
 C

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SIZE
 DWG. NO.

B Report_CAN_General Information

SHEET NO.
 1-9

DATE
 2016-06-01-A

ITEM NO.	SKU	DESCRIPTION	LENGTH mm (in)	HEIGHT mm (in)
1	2451	1 Step	268 (10-9/16)	311 (12-1/4)
2	2452	2 Step	532 (20-15/16)	503 (19-13/16)
3	2453	3 Step	796 (31-5/16)	695 (27-3/8)
4	2454	4 Step	1060 (41-3/4)	888 (34-15/16)
5	2455	5 Step	1324 (52-1/8)	1080 (42-1/2)
6	2456	6 Step	1588 (62-1/2)	1272 (50-1/16)
7	2457	7 Step	1852 (72-15/16)	1464 (57-5/8)

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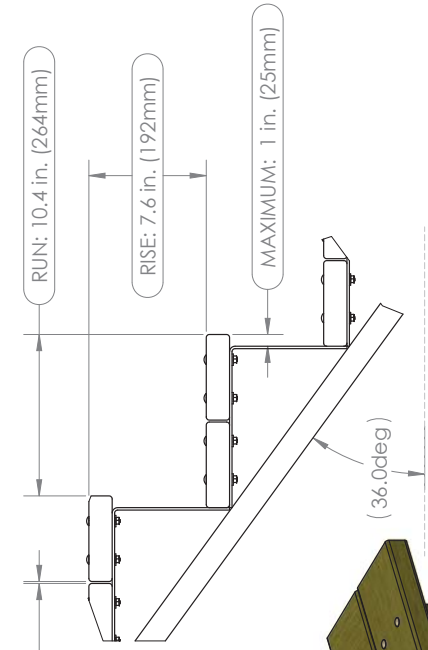
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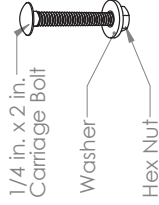


2x6 BOARD SPACING:
 1/8 in. - 3/16 in.
 (3mm - 5mm)

Wood attachment:
 Two 3/8 in. diameter lag screws,
 minimum 3 in. penetration into
 treated SPF lumber, No. 2 or better

TREADS: Two 2x6, or one
 2x12 Treated SPF lumber,
 No. 2 or better

Recommended Fastener:



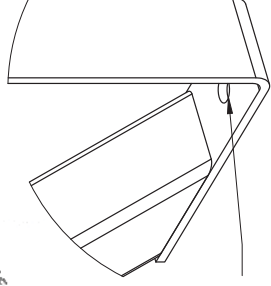
2021-03-16

MAXIMUM SPAN:
 36 in. (914mm)
 MAXIMUM STAIR WIDTH:
 48 in. (1219mm)

MAXIMUM OVERHANG: 6 in. (152mm)
 MINIMUM OVERHANG: 2-5/8 in. (66 mm)

Concrete attachment:
 One Hilti Kwik Bolt 3, diameter 3/8 in., with minimum
 concrete embedment 2 in.

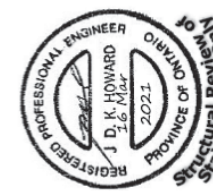
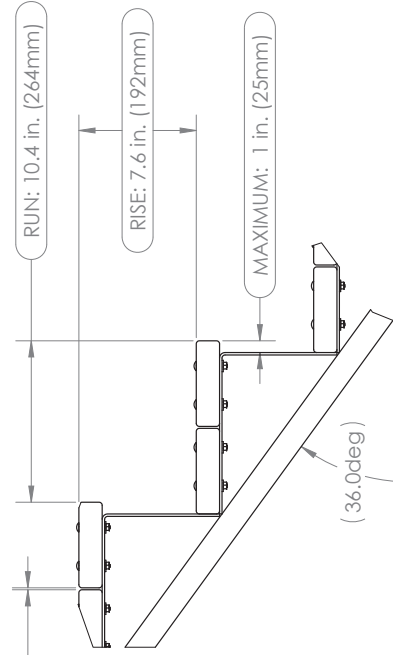
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 One 3/8 in. diameter lag screw, minimum 3 in.
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DETAIL B
 SCALE 1 : 2

TITLE	Two Stringer Configuration
PART FILE	Report Assembly CAN
DWG REV	C
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SIZE	DWG. NO.
B	Report_CAN_2-stringer
SCALE: 1:8	SHEET NO. 2016-06-01-A

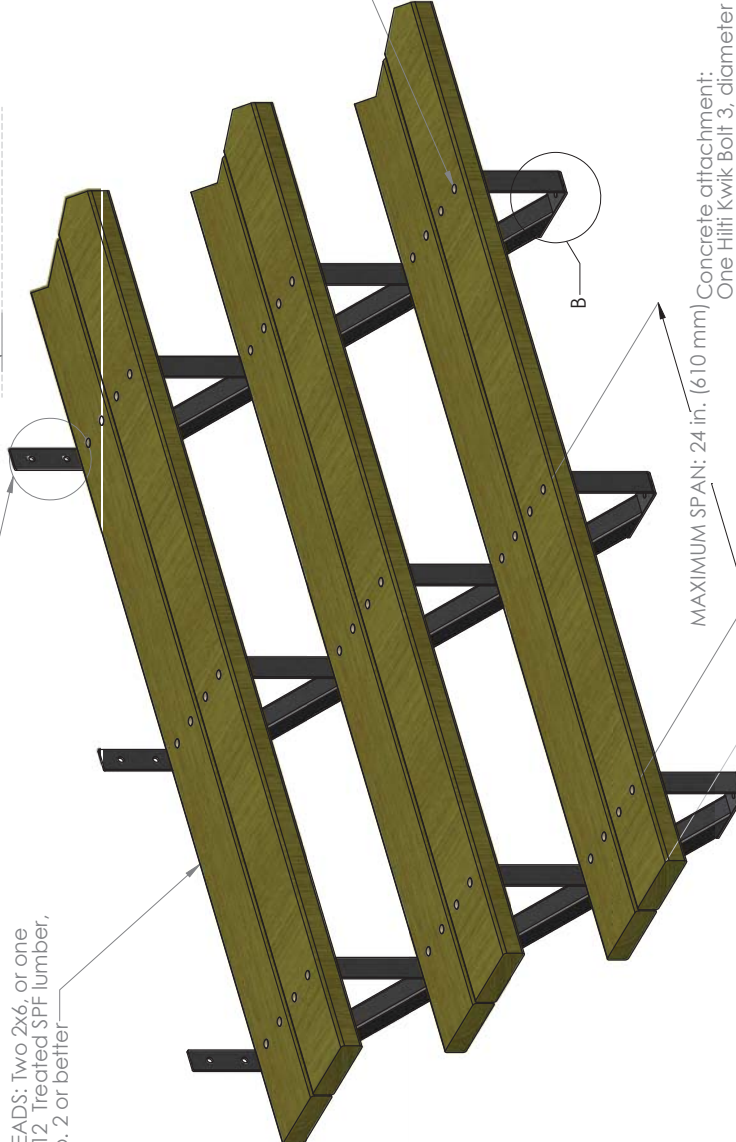
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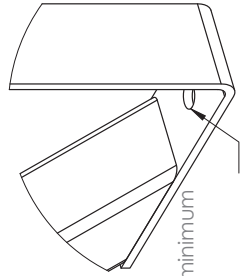
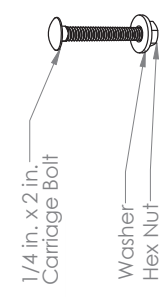
2021-03-16

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Recommended Fastener:



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MAXIMUM SPAN: 24 in. (610 mm)

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DWG REV	B
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SIZE	DWG. NO.
B	Report_CAN_Multi-stringer
SCALE: 1:8	SHEET NO. 2016-06-01-A

DETAIL B
SCALE 1 : 2