

Report of:

Compliance with Canadian Building Codes

- **2023 Alberta Building Code – Part 9**
- **2024 British Columbia Building Code – Part 9**
- **2020 National Building Code of Canada – Part 9**
- **2024 Ontario Building Code – Part 9**

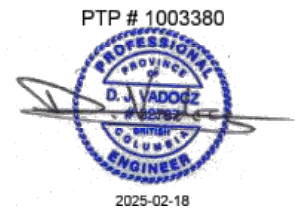
⚠ WARNING No representation or warranty is given that your particular application of these products complies with relevant building codes or that the fasteners provided or used are appropriate for your application. Consult with professionals and local building officials before beginning work: (i) to ensure compliance with relevant building codes for your application and for your proposed use of fasteners; (ii) to ensure the integrity of the structural components in connection with which these products are to be used; (iii) to identify appropriate safety gear that is to be used during installation such as a safety harness when working above ground; (iv) to ensure that the work area is free from utilities, services and hazards; and (v) to clarify any instructions or warnings that may not be clear. Work in a safe manner wearing protective gear such as gloves, eyewear, headwear, footwear and clothing. When using tools comply with operation manuals and instructions. Metal and glass may have sharp edges and could fragment or splinter during or as a result of handling or cutting. Do not use these products in connection with any substance that is or may be harmful or corrosive to the products. Inspect and maintain these products and the structural components that they are used in connection with on a regular basis, using professionals when appropriate.

Peak® Handrail Kit

Engineering Review for Compliance with Canadian Building Codes Part 9 Single Dwelling Unit Summary Report

Peak Products Manufacturing Inc.
www.peakproducts.com


Submitted February 14, 2025, by
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Appendix

PERMIT TO PRACTICE RDH BUILDING SCIENCE INC.	
RM SIGNATURE:	
RM APEGA ID #:	116145
DATE:	2025-02-18
PERMIT NUMBER: P012367 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)	

1 Overview

The Peak® Handrail Kit is designed to function as an interior and exterior handrail for residential use only for stairs or ramps within areas describe below to protect the occupant from a fall. The objectives were to complete a structural review of the structural components based in Limit States Design, in accordance with applicable material standards and Part 9 of the National Building Code of Canada (NBCC) 2019, British Columbia Building Code (BCBC) 2024, National Building Code of Canada Alberta Edition (NBCC AE) 2023, and Ontario Building Code (OBC) 2024.

The Peak Handrail Kit is only applicable at locations that conforms to the following:

- Within a single-family dwelling unit, within houses with a secondary suite including their common spaces, and for exterior guard serving no more than 2 dwelling units.
- Article 9.8.7.1 *Required Handrails* of the building codes mentioned above.

The following specified loads apply for the handrail and supports:

- Concentrated load of 0.9 kN applied in any direction at any point for all handrails.
- Uniformly distributed load of 0.7 kN/m applied in any direction along the handrails.

The following structural components were evaluated:

1.1 Handrail

- Handrail Extrusion – See Appendix in Calculation Package.

1.2 Splice

- Splice Extrusion – See Appendix in Calculation Package.

1.3 Bracket

- Support Bracket Extrusion – See Appendix in Calculation Package.

This review is based on information and drawings provided by Peak Products Manufacturing Inc. (Peak) for the elements listed above.

The complete drawing set of all components for the Handrail Kit is included in the Calculation Package's Appendix.

2 Exclusions

The Peak® Handrail Kit consist of support brackets mounted to a substrate. The substrates can vary in material and quality; therefore, it is the responsibility of the end user to consult with professionals and local building officials before beginning work:

- (i) to ensure compliance with relevant building codes for your application and for their proposed use of fasteners.
- (ii) to ensure the integrity of the structural components in connection with which these products are to be used.

3 Handrail Elements

3.1 General Handrail Elements

The general handrail elements include the element described in Part 1. An analysis was completed based on the worst-case configuration for these elements.

- Loads: Prescribed by the Canadian Building Codes (listed above) Sentence 9.8.7.7.(1).
- Resistance: Completed in accordance with CAN/CSA S157-17, Strength Design in Aluminum.
- Section properties: Information was provided by Peak. Calculations were completed in accordance with CAN/CSA S157-17.
- Load configuration: Span and dimensions were provided by Peak. Spans were modelled and the worst-case combination was taken for the analysis of each part.

4 Results

A full set of calculations and results is presented in RDH's compiled engineering calculation package. The engineering package includes:

- Dimensioned drawings of each component, including extrusion drawings.
- Calculation sheets for the structural capacity of components listed in 1.0 Overview.

The above documents contain proprietary information, and as such, have not been included in this report.

5 Conclusion

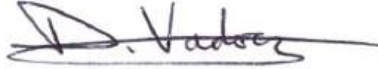
The Peak® Handrail Kit meets the requirements within the National Building Code of Canada, British Columbia Building Code 2018 and National Building Code of Canada Alberta Edition 2019, and Ontario Building Code 2024 Part 9 Subsection 9.8.8.7. Limitations of compliance are defined in Part 2 of this report.

Yours truly,



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Reviewed by

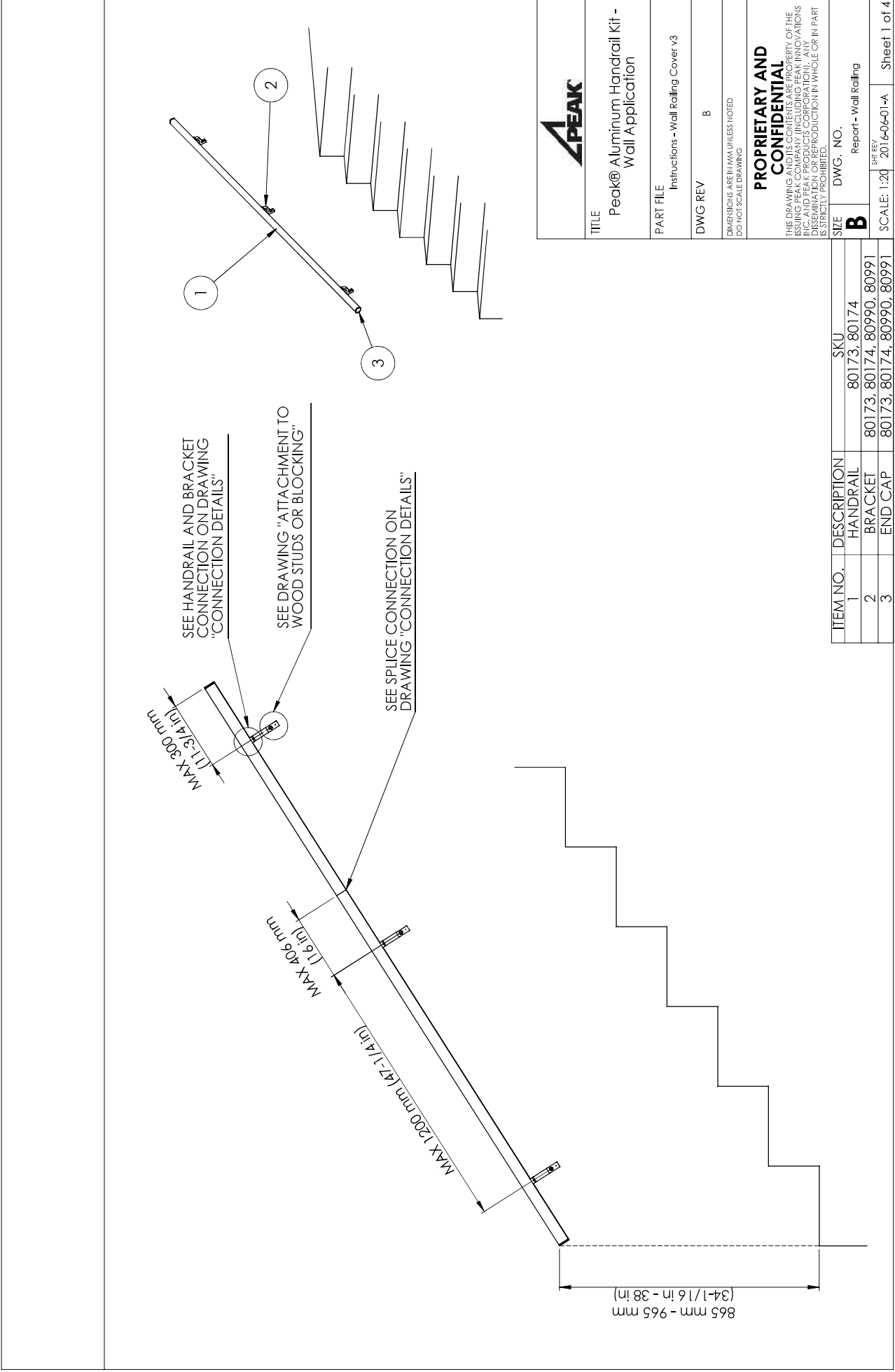


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Limits of Commission

This report was prepared for Peak Products Manufacturing Inc. It is not for the use or benefit of, nor may it be relied upon, by any other person or entity, without written permission of RDH Building Science Inc.

Appendix



TITLE	Peak® Aluminum Handrail Kit - Wall Application
PART FILE	Instructions - Wall Railing Cover v3
DWG REV	B
DIMENSIONS ARE IN MM UNLESS NOTED DO NOT SCALE DRAWING	
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SIZE	DWG. NO.
B	Report - Wall Railing
SCALE: 1:20	SHEET NO. 2016-06-01-A
Sheet 1 of 4	

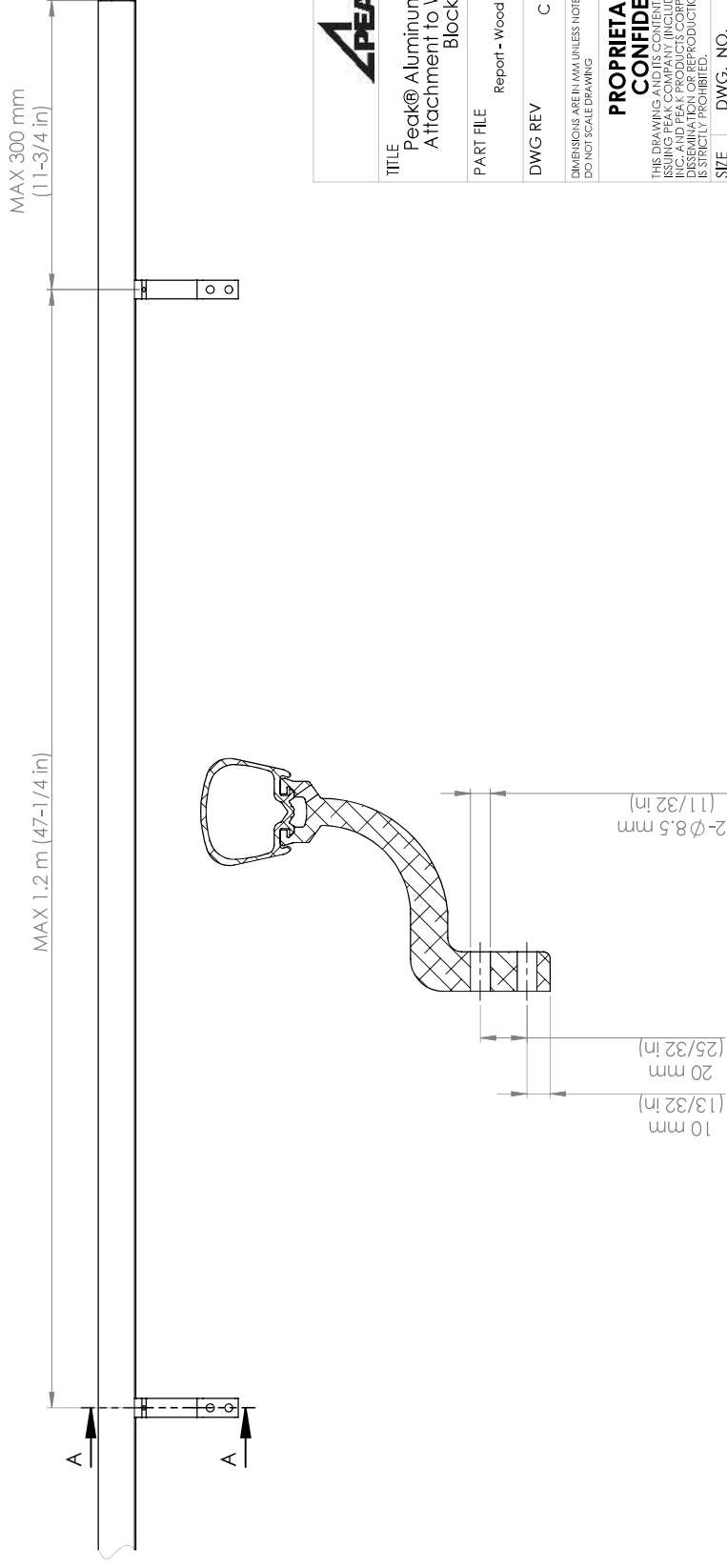
ITEM NO.	DESCRIPTION	SKU
1	HANDRAIL	80173, 80174
2	BRACKET	80173, 80174, 80990, 80991
3	END CAP	80173, 80174, 80990, 80991

ATTACHMENT TO WOOD STUDS OR BLOCKING

Requirements within section 9.8.7.7. of Alberta Building Code 2023, British Columbia Building Code 2024, National Building Code 2020 and Ontario Building Code 2012:

Handrails serving a single dwelling unit attached to wood studs or blocking:

- The attachment points are no more than 1.2 m apart in the horizontal plane,
- The first attachment point at either end is no more than 300 mm from the end of the handrail, and
- The fasteners consist of not less than 2 No. 8 wood screws at each point, penetrating not less than 32 mm into solid wood.



SECTION A-A
SCALE 1 : 2



TITLE
Peak® Aluminum Handrail Kit -
Attachment to Wood Studs or
Blocking

PART FILE
Report - Wood connection

DWG REV
C

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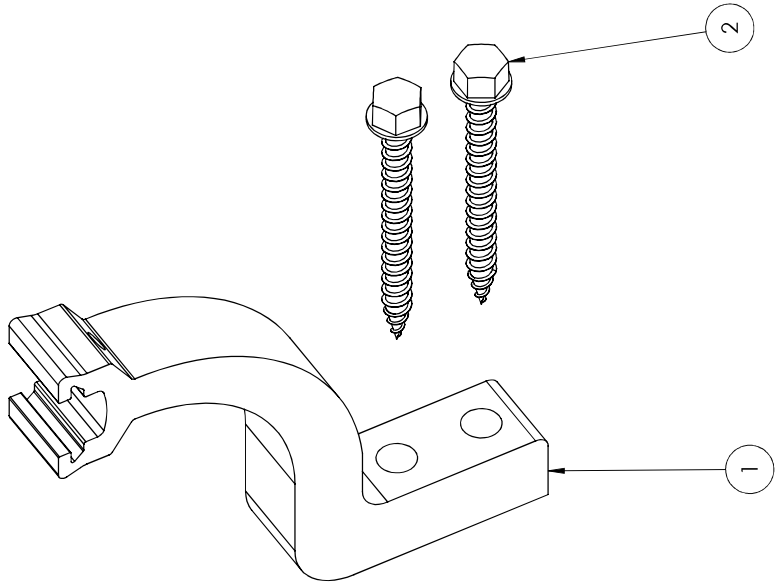
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SIZE
DWG. NO.

B Report Handrail Rail Connection Details

SCALE: 1:5 SHEET REV: 2016-06-01-A Sheet 2 of 4



TITLE
 Peak® Aluminum Handrail Kit -
 Post Connection Detail

PART FILE
 Wall mount exploded v3

DWG REV
 C

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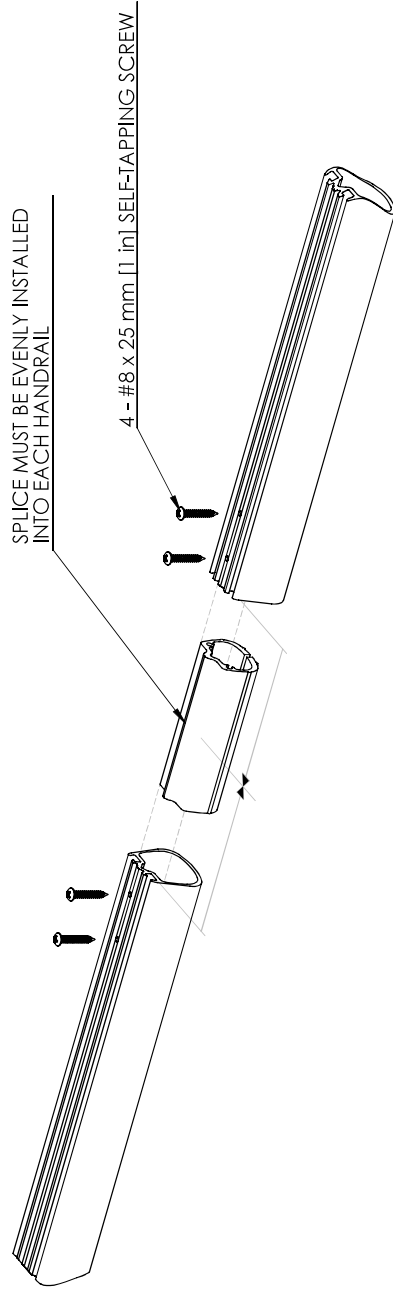
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SIZE
B DWG. NO.
 Report Handrail Rail Connection Details

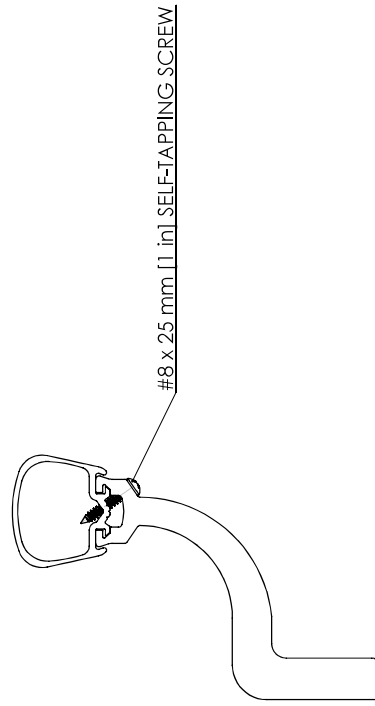
SCALE: 1:2 SHEET
 2016-06-01-A Sheet 3 of 4

ITEM NO.	DESCRIPTION
1	BRACKET
2	1/4" x 3" LAG SCREWS

SPLICE CONNECTION



HANDRAIL AND BRACKET CONNECTION



TITLE
Peak® Aluminum Handrail Kit -
Connection Details

PART FILE
Instructions - Splice

DWG REV
C

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SIZE
DWG. NO.

B Report Handrail Rail Connection Details

SCALE: 1:3
SHEET REV: 2016-06-01-A
Sheet 4 of 4