TACOMA ENGINEERS

STRUCTURAL REPORT

Date:	May 12, 2020	**No. of Pages:**	2 + 1
Project:	ICF Hanger Load Rating	**Project. No.:**	TE-36073-20
Client:	RP Watkins		
Dist.:	Michael Summers RP Watkins		bigsumm@me.com

Background:

Tacoma Engineers has been retained by RP Watkins to provide a certified load rating for a metal hanger for wood joists framing into an insulated concrete form (ICF) wall. The assembly is created by inserting the two vertical sections of the hanger through the ICF insulation which is then surrounded by cast in place concrete.

Tacoma Engineers has been provided with laboratory testing reports for tensile strength and for capacity of the hanger in a mockup assembly. The tensile test report, "Watkins Hanger Tensile Testing", is dated July 1, 2012 and the mockup assembly test report is dated June 2, 2013. Both tests were completed at the Donald G. Fears Structural Engineering Laboratory at the University of Oklahoma.

Comments:

Please refer to the attached load rating sheet "RP Watkins ICF Hanger Load Rating" for the certified capacities.

The following standards were used in the analysis:

CSA S16-14 – Design of Steel Structures
CSA S136-16 – North American Specification for the Design of Cold-Formed Steel Structural Members
CSA 086-14 – Engineering Design in Wood
CSA A23.3-14 – Design of Concrete Structures

The load ratings were determined using the results of the testing and comparing them to calculated results. Based on the comparison, we used engineering judgment to determine a load rating based on an appropriate safety factor.

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Please call if you have any questions.

Per: _____
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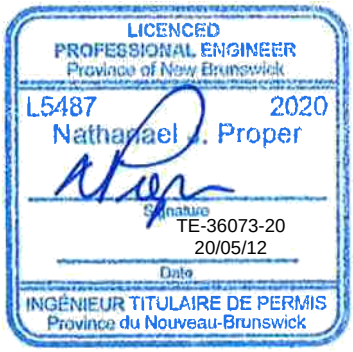

Encl.: RP Watkins ICF Hanger Load Rating

RP Watkins ICF Hanger Load Rating

Prepared by Tacoma Engineers May 12, 2020

WATKINS STOCK #	STEEL GAUGE	INSTALLED BEARING (mm)	DIMENSIONS			FASTENERS	FACTORED END REACTION (kN)	FACTORED UPLIFT (kN)
			W (mm)	L (mm)	H (mm)			
IFH28-11	16	75	38	280	178	10-10d x 38mm	15.8	6.0
IFH25-11	16	75	64	280	178	10-10d x 38mm	15.8	6.0
IFH48-11	16	75	89	280	178	10-10d x 38mm	15.8	6.0

WATKINS STOCK #	STEEL GAUGE	INSTALLED BEARING (in)	DIMENSIONS			FASTENERS	FACTORED END REACTION (lbs)	FACTORED UPLIFT (lbs)
			W (in)	L (in)	H (in)			
IFH28-11	16	3	1.5"	11	7	10-10d x 1.5"	3550	1350
IFH25-11	16	3	2.5"	11	7	10-10d x 1.5"	3550	1350
IFH48-11	16	3	3.5"	11	7	10-10d x 1.5"	3550	1350

Notes:

1. Hanger material to be 16 gauge galvanized steel with Fy = 280 Mpa (40 ksi) minimum.
2. Fasteners indicated are total number to be installed into joist (divided equally each side).
3. Blocking or bearing stiffeners are required when using I joists.
4. Maximum 70mm (2.75") insulation thickness in ICF wall.
5. Insert hanger into ICF wall so that bottom bearing portion is tight to insulation.
6. Concrete specifications and workmanship in ICF walls is outside the scope of this rating but is critial to the results. Concrete strength, slump, and aggregate size must be specified by the project engineer.