
Date:	April 24, 2014	No. of Pages:	2 + 1
Project:	ICF Hanger Load Rating	Project. No.:	TE-23819-14
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 mock up assembly. The tensile test report, "Watkins Hanger Tensile Testing", is dated July 1, 2012 and the mock up 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 for the following provinces:

- Alberta
- British Columbia
- Manitoba
- Nova Scotia
- Ontario
- Saskatchewan

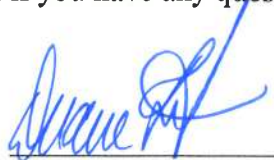
The following standards were used in the analysis:

- CSA S16-09 – Design of Steel Structures
- CSA S136-07 – North American Specification for the Design of Cold-Formed Steel Structural Members
- CSA 086-09 – Engineering Design in Wood
- CSA A23.3-04 – 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.

Please call if you have any questions.


Per:


Duane Frost, P. Eng. (ON)




Nathan Proper, P. Eng. (BC, SK, MB, NS)




Steve Adema, P. Eng. (AB)

Cof A # 21049
Structural

Encl.: RP Watkins ICF Hanger Load Rating



Apr. 24/14
Cof A # 4995



RP Watkins ICF Hanger Load Rating

Prepared by Tacoma Engineers April 24, 2014

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 $F_y = 280$ 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 critical to the results. Concrete strength, slump, and aggregate size must be specified by the project engineer.

Professional Engineer stamps and signatures:

- Ontario:** D.D. Frost, License # 100061459, dated APR 24 2014.
- Saskatchewan:** N.J. Proper, Member # 21049, dated 14/04/24.
- Nova Scotia:** N.J. Proper, # 8374, dated Apr. 24/14.
- Alberta:** Steven Adema, # 8056, dated APR 24 2014.
- Manitoba:** N.S. Proper, Member # 33927, dated Apr. 24/14.

