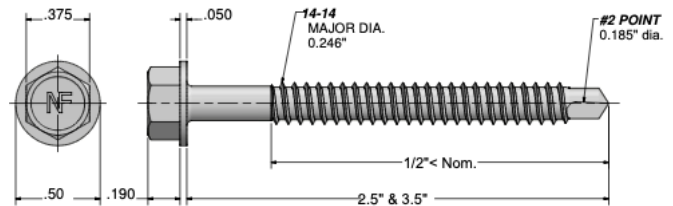


ACS-HWH MD2 - MASTER DRILLERS® – TECHNICAL DATA

- Manufactured in **Canada** by Leland Industries Inc.
- Available in #14-14, in 2 ½" & 3 ½" Lengths, #2 Drill Point
- Standard Hex Head with Integrated Washer (¾" Driver)
- Available in
 - NZF3000 Coated Carbon Steel or
 - NZF3000 Coated 410 Stainless Steel
- For target fastener performance, driver should have an RPM range of 0-2400
- Fastener capacity reduced by overdriving – limit driver torque/depth setting



FASTENER PERFORMANCE¹

FASTENER MECHANICAL PROPERTIES

	Carbon Steel	410 Stainless Steel
Minimum Tensile Strength (lbs)	4300	4350
Minimum Torsional Strength (in-lbs)	156	160
Minimum Shear Strength (lbs)	2580	2610

TENSION/SHEAR – STEEL ATTACHMENT

ALLOWABLE STRESS DESIGN (ASD)

Base Steel Attachment ²	20 Ga.	18 Ga.	16 Ga.
Tension (lbs) ³	133.3	211.0	285.2
Shear (lbs) ⁴	270.5	402.6	599.8

CANADIAN LIMIT STATES DESIGN (LSD)

Base Steel Attachment	20 Ga.	18 Ga.	16 Ga.
Tension (lbs) ⁵	213.3	337.7	456.3
Shear (lbs) ⁶	324.6	483.1	719.7

¹ All test results and suggestions are based on laboratory tests and/or relevant Canadian Codes. Specific job site conditions should be taken into consideration when specifying the proper fastener. Because applications vary, we assume no liability for use of this information.

² A36 Galvanized Steel $F_y = 250 \text{ MPa}$, $F_u = 414 \text{ MPa}$

³ Calculated based on CSA S136.1 K2.1.2 Tests for Special Cases, Allowable Strength Design (ASD)

⁴ Calculated based on CSA S136 J4.3 with Outer Material 18 Gauge Stainless Steel, Base Steel as Noted, and $FS = 3.0$

⁵ Calculated based on CSA S136.1 K2.1.2 Tests for Special Cases, Limit States Design (LSD)

⁶ Calculated based on CSA S136 J4.3 with $\phi = 0.4$

SHEET STEEL PULLOVER – BASED ON NOMINAL 1/2" FASTENER HEAD DIAMETER⁷

ALLOWABLE STRESS DESIGN (ASD)

Steel Type ⁸	16 Ga	18 Ga	20 Ga	22 Ga	24 Ga
Galv. Carbon Steel	849.7	677.0	519.4	448.9	358.8
Stainless Steel	1128.8	899.5	690.1	596.3	476.7

CANADIAN LIMIT STATES DESIGN (LSD) FASTENER VALUES (lbs)⁹

Steel Type ⁸	16 Ga	18 Ga	20 Ga	22 Ga	24 Ga
Galv. Carbon Steel	1019.6	812.5	623.3	538.6	430.5
Stainless Steel	1354.6	1079.4	828.1	715.6	572.0

SHEET STEEL DESIGN THICKNESS REFERENCE¹⁰

Nominal Gauge	16 Ga	18 Ga	20 Ga	22 Ga	24 Ga
Thickness – mm	1.519	1.214	0.912	0.759	0.607
Thickness - Inches	0.0598	0.0478	0.0359	0.0299	0.0239

⁷ Calculated based on CSA S136 J4.4.2

⁸ Steel Grades: A36 Galvanized Steel Fy = 250 MPa, Fu = 414 MPa; A304 Stainless Steel Fy = 240 MPa, Fu = 550 MPa

⁹ Calculated based on CSA S136 J4.3, J4.4 with $\phi = 0.4$

¹⁰ Steel to Conform to the Requirements of CSA S136/AISI S220 – North American Specification for the Design of Cold-Formed Steel Structural Members