

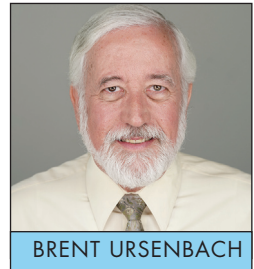
MECHANICAL CODE DISCUSSION

Sheetmetal Gauges or Thickness, for Dryer Vents (and Other Ducts)

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I RECEIVED THE FOLLOWING email recently from our friend and Board Member Ryan Rentmeister:

“Can I verify how I am interpreting the code on this item. If I am reading this correctly in IRC and IMC dryer vent can be .016 thickness metal. Using thickness charts from local vendors looks like that can be 30 gauge. IRC duct up to 12" pipe can be .013" or even less than 30 gauge. Am I missing something? Is there a code referenced thickness chart of gauges? I can't find anything definite. Thank you, my friend.”

Great question Ryan! The I-Codes are in my opinion lacking in clearly identifying the sheet metal gauge requirements, as the codes refer to thickness rather than gauge. In some cases, the IRC simply states a metal thickness, not identifying if its aluminum or galvanized steel. Additionally, When's the last time you call you metal supplier asking for a delivery of 36" X 96" X 0.019" galvanized sheet steel? Maybe it's time for me to submit a proposal for a code change? What do the codes tell us?

IMC: Domestic Clothes Dryer Ducts. 504.9.1 Material and size.

Exhaust ducts shall have a smooth interior finish and

shall be constructed of metal not less than 0.016 inch (0.4 mm) in thickness. The exhaust duct size shall be 4 inches (102 mm) nominal in diameter.

IRC: M1502.1 General. Clothes dryers shall be exhausted in accordance with the manufacturer's instructions.

M1502.2 Independent exhaust systems. Dryer exhaust systems shall be independent of all other systems and shall convey the moisture to the outdoors.

M1502.4.1 Material and size. Exhaust ducts shall have a smooth interior finish and shall be constructed of metal not less than 0.0157 inches (0.3950 mm) in thickness (No. 28 gage). The duct shall be 4 inches (102 mm) nominal in diameter.

M1601.1 Duct design. Duct systems serving heating, cooling and ventilation equipment shall be installed in accordance with the provisions of this section and ACCA Manual D, the appliance manufacturer's installation instructions or other approved methods.

“This section”— as mentioned above— includes **Table**

M1601.1.1 (below): *(Story continues top of next page)*

TABLE M1601.1.1

DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESS FOR SINGLE DWELLING UNITS*

ROUND DUCT DIAMETER (inches)	STATIC PRESSURE			
	1/2-inch water gauge		1-inch water gauge	
	Thickness (inches)		Thickness (inches)	
	Galvanized	Aluminum	Galvanized	Aluminum
< 12	0.013	0.018	0.013	0.018
12 to 14	0.013	0.018	0.016	0.023
15 to 17	0.016	0.023	0.019	0.027
18	0.016	0.023	0.024	0.034
19 to 20	0.019	0.027	0.024	0.034



CARBON STEEL HDG | Galvannealed

THICKNESS TOLERANCE RANGES - Galvanized Galvannealed Steel Sheets			
Gauge No.	Thickness, Inches		Lbs. Per Sq. Ft.
	Dec. Equiv.	Tol. Range	
10	0.138	.1472 .1292	5.781
11	0.123	.1323 .1143	5.156
12	0.108	.1174 .0994	4.531
13	0.093	.1014 .0854	3.906
14	0.079	.0865 .0705	3.281
16	0.064	.0695 .0575	2.656
17	0.058	.0625 .0525	2.406
18	0.052	.0556 .0466	2.156
19	0.046	.0506 .0406	1.906
20	0.040	.0436 .0356	1.656
21	0.037	.0366 .0406	1.531
22	0.034	.0296 .0376	1.406
23	0.031	.0266 .0346	1.281
24	0.028	.0236 .0346	1.156
25	0.025	.0217 .0287	1.031
26	0.022	.0187 .0247	0.906
27	0.020	.0172 .0323	0.844
28	0.019	.0157 .0217	0.781
29	0.017	.0142 .0202	0.719
30	0.016	.0127 .0187	0.656

This is the round duct section of the table – see your IRC for the rectangular duct section.

Please note, the problem I have with the code, specifically M1502.4.1, is its reference to metal, not identifying if aluminum, galvanized, copper or any other specifics.

In SMACNA's HVAC Duct Construction Standards Metal & Flexible (referenced in the code), 30ga and 28ga are broken out as follows. Please note 30 gauge is compliant.

Gauge	Min	Nom	Max
28	.0157	.0187	.0217
30	.0127	.0157	.0187

Our friends at Hercules provided this useful chart

(see left) that may be included in a proposal to modify the code.

Ryan, thanks for the question and of course, questions, comments and suggestions are always welcome from all of you. Thank You—Brent

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- ♦ **EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization):** Focuses on your business' profitability
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- ♦ **Asset-Based Valuation:** Considers both tangible and intangible assets

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