

Voluntary Review of Consumer Grade Moisture Meters

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Statement:

Realizing the importance of burning dry wood in solid fuel heaters, five (5) randomly selected moisture meters were purchased over the internet. Going to Amazon.com yielded dozen of models available in price ranges of below \$10.00 to several hundred dollars.

Given the fairly accepted demographics of most wood burners, a maximum retail price of \$100.00 was selected. There are dozens of models available below this established threshold price limit.

Our goal was to look at ease of use, features, construction, packaging, owners manual clarity, accuracy, repeatability, portability and compare all of the aforementioned to a Delmhorst, EPA approved lab moisture meter. Delmhorst meters are used by nearly all manufacturer R & D departments as well as several test lab's. Delmhorst meters come with certificates of calibration, are multi function and have several data inputs. The required knowledge and learning curve are estimated to be excessive for what a home owner would either need or be willing to use.

Clearly, the use of any moisture meter would raise awareness of the need to burn dry, seasoned cord wood.

The Review:

This image shows all subject moisture meters labeled "A"- "F". The "F" moisture being the aforementioned Delmhorst J-2000 moisture meter.



The Review: (continued)

Moisture meters and observations are as follows:

Brand	Retail Cost	Grades (1-10) 10 Being Best						
		Ease Of Use	Portability	Design	Repeatability	Features	Construction	Manual Clarity
A	\$9.00	7	9	6	7	5	6	6
B	\$8.36	4	8	4	4	6	4	5
C	\$29.98	9	7	8	8	9	9	10
D	\$22.95	4	8	4	4	6	3	6
E	\$77.67	10	10	9	9	10	10	10
F	\$449.99	1*	4	10	10	10*	10*	10*

Taking Readings:

Both a 2x4 and 4x4 were used in this test. Using the Delmhorst J2000, readings were taken from a doug fir 2 x 4 and doug fir 4 x 4. All other moisture meters were then subject to the same test readings within the same dimensional area of proximity of the Delmhorst reading locations. Multiple readings were made using each model to get margin of error on repeatability. Results are below:

Brand	Test With Wood 2 x 4	Test With Wood 4 x 4	Grades (1-10) 10 Being Best		Number of Pins
			Repeatability	Ease Of Wood Penetration	
A	10%	10%	6	8	2
B	14%	9%	4	3	4
C	13.7%	9%	9	9	2
D	14%	4%	4	3	4
E	14.6%	11%	9	10	2
F	12.5%	11%	10	10	2

Observations by Brands:

A. Actual manufacturer name not listed on unit, box or packing/manual. This is the only unit that had an LED light for moisture level reading. Easy to insert two pin design, has two buttons for low or high range moisture reading. Very repeatable. Has low battery indicator. Requires 9V battery (included). Nice cover to protect pins. No replacement pins supplied.

B. Newer Digital. Comes in vinyl carry case. 4 pin design, making it very difficult to penetration wood. In order to get readings, great force (slamming) of meter into wood surface is necessary. Plastic case seemed to want to separate as a result. Comes with 2 extra pins. Requires 9V battery, not included. Hold button feature allows for ability to record readings. Low battery indicator and very large digital display, very easy to read.

C. General "The Seeker". Has two settings, one for cordwood the other for building materials. See through display case. Comes with 9V battery. No additional pins were supplied, although replaceable. Has audible beeps for readings and functions such as on/off, moisture level and very large digital display. Unit is large and would require large shirt or pants pocket to carry.

D. JT-4G HQRP. Has large digital read out. 4 Pin design make wood penetration very difficult. Units had tough time holding together as a result of force needed to drive four pins to reading depth. This is the second 4 pin design and both were found to be of poor construction quality. Not easy to use, confusing. Requires 9V battery, which was included. No extra pins and this unit would require disassembly to replace pins. Hold button feature allows for ability to record readings.

E. Extech Instruments. Shipped with 10 extra pins, easy screw out design. Two settings, one for cord wood the other for construction materials. Although it has a digital readout, it is small and may prove to be harder to read than other digital displays. LCD bar for battery power. Automatically turns off when protect pin cap is placed on unit. 3 ION batteries, supplied. Has very well engineered belt/pocket clip on reverse side and well designed to fit into pockets. Audible beeps for all functions and readouts.

F. Delmhorst J2000. Preferred model used by test labs and manufacturers. Comes with certificate of calibration. A rod is included so that calibration can be verified in the field. Has multiple inputs for both fixed two pin (of varying lengths) and slide hammer for deeper penetration, such as 4 x 4's. This unit would prove to be far too complicated for the average homeowner and in many cases may as well be cost prohibitive.

Summary:

I enjoyed doing this review of moisture meters. I found there is actually a fairly good supply and quality of consumer grade meters to be purchased. The four pin designs were poor in design and construction, given the force needed to get pin penetration for readings. If I were purchasing a moisture meter for a price of under \$25, I would purchase Brand A. If I had a larger budget, up to \$50, I would purchase Brand C.

Increasing my budget to the maximum of \$100, Brand E would be in my tool collection. I could look at the additional cost as worthwhile due to the multifunction options, including getting moisture levels for construction materials.

I also personally did not find the smaller digital display to be too small and liked the feel and quality of the product. At less than 1/4 the cost of the lab grade Delmhorst J2000, it performed flawlessly and was an incredible value.

Thank you for permitting me the time to be thorough and giving me the reason to acquire more tools!