Species Settings Questions & Answers

For Wagner Meters Orion® Models

WAGNER METERS
Unleash Your Expertise

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Questions and Answers

#1 Gradients and Wet Pockets
Q: What about gradients and wet pockets?

A: Although the various drying processes for green lumber can leave wet cores and pockets, moisture continues to pass from fiber to fiber within the wood until it has equalized throughout the whole board, and then to surrounding humidity levels. Determining if a board or load of lumber will equalize within tolerance levels can be challenging, but moisture meters from Wagner Meters provide this information automatically. Penetrating deep into the wood, they mathematically determine equalized moisture content and are capable of checking truckloads of board feet for specified moisture content in minutes. For even more convenience, many companies use their hand-held meters from Wagner Meters to read right through the plastic wrapping around the wood on new deliveries before they allow unloading!

#2 Surface Moisture
Q: Is my moisture meter from Wagner Meters affected by surface moisture?

A: Most moisture meters can be affected by standing water or visible water on the board. You should always wipe off as much excess water as possible. Once the standing water is removed, your moisture meter from Wagner Meters will read slightly higher than normal, whereas other types of meters can show greatly exaggerated readings.

The Orion® 910, 930, 940, and 950 moisture meters feature Wagner's IntelliSense™ technology*, going beyond the surface conditions for accurate measurements of moisture

conditions inside the wood. Our hand-held moisture meters with lntelliSense™ technology measure moisture IN the wood, not ON the wood, giving fast, highly accurate moisture measurement for woodworking or wood flooring projects. In addition, it works without damage to the wood surface.

*Active in 3/4” mode only

NOTE: *If water is allowed to soak into the wood, it will naturally show higher moisture content. If a piece of wood is very rough, it will soak up the water quite readily, affecting readings for all meters*.

Species Setting Table

Species	Setting
Afrormosia	0.65
Alder, Red	0.41
American Red Oak	0.63
Andiroba	0.57
Ash, Black	0.49
Ash, Blue	0.58
Ash, Green	0.56
Ash, Oregon	0.55
Ash, Red	0.55
Ash, White	0.60
Aspen, Bigtooth	0.39
Aspen, Quaking	0.38
Avodire	0.51
Baldcypress	0.46
Balsa	0.14
Balsamo (Myroxylon balsamum)	0.83
Balsamo (Protium spp.)	0.55
Banak (Virola spp.)	0.45

Basswood, American	0.37
Beech, American	0.64
Beech, Euro	0.67
Benge (Guibourtia arnoldiana)	0.70
Birch, Paper	0.55
Birch, Sweet	0.65
Birch, White	0.53
Birch, Yellow	0.62
Box	0.83
Brazilian Cherry	0.83

Brazilian Mahogany	0.47
British Elm	0.53
Bubinga (Guibourtia spp.)	0.75
Butternut	0.38
Cativo	0.42
Cedar of Lebanon	0.53
Cedar, Alaska	0.44
Cedar, Atlantic White	0.32
Cedar, Eastern Red	0.47
Cedar, Incense	0.37
Cedar, Northern White	0.31

Cedar, Port Orford	0.43
Cedar, Western Red	0.32
Cedar, Yellow	0.44
Cedrella	0.39
Cherry, Black	0.50
Chestnut, American	0.43
Cocobolo	0.85
Cottonwood, Balsam Poplar	0.34
Cottonwood, Black	0.35
Cottonwood, Eastern	0.40
Degame	0.72

Determa	0.55
Dogwood, Flowering	0.72
Douglas Fir	0.48
Ebony	0.94
Elliotis Pine	0.59
Elm, American	0.50
Elm, Rock	0.63
Elm, Slippery	0.53
English Cherry	0.58
English Oak	0.57
European Ash	0.58

European Walnut	0.56
Fir, Balsam	0.35
Fir, California Red	0.38
Fir, Grand	0.37
Fir, Noble	0.39
Fir, Pacific Silver	0.43
Fir, Subalpine	0.32
Fir, White	0.39
Gombeira	1.00
Guatambu (Argentinean)	0.70
Guatambu (Brazil)	0.79

Gum, Black	0.50
Gum, Red	0.52
Hackberry	0.53
Hemlock, Eastern	0.40
Hemlock, Mountain	0.45
Hemlock, Western	0.45
Hickory (Pecan), Bitternut	0.66
Hickory (Pecan), Nutmeg	0.60
Hickory (Pecan), Water	0.62
Hickory (True), Mockernut	0.72
Hickory (True), Pignut	0.75

Hickory (True), Shagbark	0.72
Hickory (True), Shellbark	0.69
Hickory, Pecan	0.66
Holly, American	0.55
Hophornbeam, Eastern	0.70
Hura	0.40
Indian laurel	0.79
Ipe	0.99
Iroko	0.57
Jacaranda	0.34
Jarrah	0.75

Jelutong	0.38
Kapur	0.70
Karri	0.79
Keruing (Dipterocarpus spp.)	0.76
Kingwood	1.16
KOA (Acacia Koa)	0.63
Larch, Euro	0.48
Larch, Western	0.52
Laurel, California	0.55
Lignum Vitae	1.13
Limba	0.40

Locust, Black	0.69
Macassar Ebony	0.90
Madrone, Pacific	0.64
Magnolia, Southern	0.50
Mahogany, African	0.44
Mahogany, True	0.47
Manni	0.63
Maple, Bigleaf	0.48
Maple, Black	0.57
Maple, Hard	0.60
Maple, Red	0.54

Maple, Silver	0.47
Maple, Soft	0.49
Maple, Sugar	0.63
Merbau	0.67
Mersawa	0.54
Mesquite	0.86
Monkeypod	0.50
Mountain Ash (Eucalyptus spp.)	0.62
Muninga	0.59
Myrtle, Oregon	0.55

Myrtle, Tasmanian	0.64
Oak (Red), Black	0.61
Oak (Red), Cherrybark	0.68
Oak (Red), Laurel	0.63
Oak (Red), Northern	0.63
Oak (Red), Pin	0.63
Oak (Red), Scarlet	0.67
Oak (Red), Southern	0.59
Oak (Red), Water	0.63
Oak (Red), Willow	0.69
Oak (White), Bur	0.64

Oak (White), Chestnut	0.66
Oak (White), Overcup	0.63
Oak (White), Post	0.67
Oak (White), Swamp Chestnut	0.67
Oak (White), Swamp	0.72
Oak, California Black	0.53
Oak, White	0.68
Obeche	0.32
Okoume	0.35
Olive	0.81

Opepe	0.68
Padauk (Pterocarpus indicus)	0.57
Padauk (Pterocarpus macrocarpus)	0.79
Padauk (Pterocarpus marsupium)	0.71
Parana Pine	0.49
Pecan	0.60
Peroba de Campos	0.66
Peroba Rosa	0.71

Persimmon, Common	0.71
Pine, Hoop	0.44
Pine, Eastern White	0.35
Pine, Jack	0.43
Pine, Loblolly	0.51
Pine, Lodgepole	0.41
Pine, Longleaf	0.59
Pine, Pitch	0.52
Pine, Pond	0.56
Pine, Ponderosa	0.40
Pine, Red	0.46

Pine, Sand	0.48
Pine, Shortleaf	0.51
Pine, Slash	0.59
Pine, Spruce	0.44
Pine, Sugar	0.36
Pine, Virginia	0.48
Pine, Western White	0.35
Poplar, Yellow	0.42
Plane (Lacewood)	0.49
Primavera	0.42
Purpleheart	0.71

Radiata Pine	0.45
Ramin	0.56
Redwood, Old-Growth	0.40
Redwood, Young-Growth	0.35
Roble (Tabebuia spp.)	0.55
Rosewood, Brazilian (Dalbergia nigra)	0.84
Rosewood, Indian	0.79
Rubberwood	0.51
Sapele	0.60
Sassafras	0.46

Scots Pine	0.45
Spanish Cedar	0.44
Spruce, Northern	0.36
Spruce, Black	0.42
Spruce, Engelmann	0.35
Spruce, Red	0.40
Spruce, Sitka	0.40
Spruce, White	0.36
Sweet Chestnut	0.51
Sweetgum	0.52
Sycamore, American	0.49

SYP (Southern Yellow Pine)	0.56
Tamarack	0.53
Tanoak	0.64
Tatajuba	0.72
Tauari (Couratari spp.)	0.53
Tawa (Beilschmiedia tawa)	0.62
Tawa (Pometia spp.)	0.58
Teak	0.57
Tupelo, Black	0.50
Tupelo, Water	0.50
Virola (Virola spp.)	0.45

Walnut, Black	0.55
Wenge (Millettia spp.)	0.82
Willow, Black	0.39
Yellow-Poplar	0.42
Yew	0.63
Zebrano	0.77

Plywood, OSB, and MDF	Setting
Plywood	0.57
OSB	0.62
Permacore MDF	0.70
HDF core	0.85
Advantech™	0.70

Species Setting Data Sources

These settings are based on the best, most current world data and are used to determine the species correction factor within the meter. The values provide average density values for the species. A coefficient of variation (COV) of about 10% describes the variability inherent in many common domestic (US) species.

“If your wood species is not listed in the Species Setting Table provided on pages 3 to 13, Wagner Meters provides an online Wood Species Settings Data-Base with 7500+ species listed.

The Orion® series meters can be used to measure non-wood materials if the density is similar to wood products. Non-wood species can be measured by using the meter reading as a relative value such as in “go/no-go” applications, or when determining if one measurement area contains more moisture than another, i.e., measurements that do not require a high absolute accuracy. Specific gravity formulas can’t be applied to non-solid wood species due to the presence of glues and resins, which cause a non-linear moisture content curve. If greater accuracy is required, the ASTM oven-dry procedure can be used to determine a meter correction value for non-solid woods.

Footnote:

1 Species Setting Value Sources

The species setting values were developed by Wagner Meters. These values are based on our research and have been developed to give users a general correction factor for plywood and OSB. Please keep in mind that plywood and OSB manufacturing processes can differ slightly and some plywood and OSB of the same species may vary slightly.

Checking the Moisture Content in Veneer

You can check the moisture content in veneer with your hand-held moisture meter from Wagner Meters as follows:

1. Put veneer into a tight stack of at least 3/4 of an inch and separate the stack by at least 3 inches to 4 inches from the rest of the stack. Measuring a stack less than the scan depth of the meter will give you a reading that is lower than the true moisture reading. Refer to the species adjustment table for the wood you are using.

2. Avoid electrostatic discharge (ESD) at all times. Wagner Meters' warranty does not cover ESD damage. The instruments are tested to withstand a 15 KV static charge but not the typical 150 - 250 KV found in a veneer charge.

The veneer table should be earth grounded with a metal wand attached by wire to the table. The wand must then be run up and down the edge of a veneer stack to discharge static, or the person using the moisture meter must have a Velcro® wristband with a tethered strap which is grounded.

These same static precautions apply to lumber moving from a planer; the hand- meter is not an in-line measurement system. This unit is meant to check lumber while stationary.

If these guidelines are adhered to, the risk of ESD damage to your moisture meter is greatly reduced or eliminated. Please call the factory if you have any questions or concerns about this information.

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