



MEMORANDUM

To: CLSAB Members
From: Chuck Dentelbeck, President & CEO
Date: March 4, 2019
Subject: CLSAB Approved MSR Machines

The following MSR Machines are currently approved by the CLSAB:

Grading Machines Approved by the CLSAB Operations Committee	
Grading Machine	Operation limitations
1. C-L-T - Continuous Lumber Tester	
2. Metriguard Model 7200Is	
3. XLG (X-Ray Lumber Gauge)	<ul style="list-style-type: none"> • the use of visual slope of grain requirements for the various grade levels as found in ASTM D-245 unless the X-Ray Lumber Gauge is used in conjunction with another method to evaluate slope of grain • the moisture content of the stock being controlled and taken into account for the design value assignments • the use of accredited agency quality control and certification procedures. If short runs are made, intensive sampling will be done through the accredited agency quality control program.
4. XLG (X-Ray Lumber Gauge) and XLG with E-valuator	<ul style="list-style-type: none"> • Operational feed speed 800 ft/min – 2500 ft/min • Operational temperature -30° C to 50° C • Material sizes 2x3 to 2x12 • Metric thickness 33 mm to 55 mm • Metric width 70 mm to 300 mm • To eliminate planer noise that may affect the laser profile subsystem the machine must not be close-coupled with the planer and board flow must be relatively smooth. Abrupt changes in feed speed and non-fluent board flow adversely affect frequency measurement and should be avoided.
5. Cook Bolinder - Model SG-TF	
6. Dart MSR Testing Machine	
7. Computermatic MK5A	
8. Dynagrade - Model 1B - and Model 1B HC	
9. Wescalco - Model 21250LC1	
10. Wescalco Electronic Board Tester - Model #2(ETB-2)	

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Grading Machine	Operation limitations
<p>11. Conception R.P. Inc. - Model CRP 360</p>	<ul style="list-style-type: none"> • Machine environmental conditions: <ul style="list-style-type: none"> • Ambient operating temperature-0 to 50 degrees Celsius • Ambient humidity conditions-up to 90% humidity, no condensing • <u>Operational speed</u> -The maximum operational speed is up to 1200 feet per minute. • <u>Lumber thickness</u> -The thickness range is up to 2 inches • <u>Lumber width</u> -The lumber width range is from 3 inches to 6 inches. • <u>Length capacity</u> -The minimum length of a piece of lumber that can be effectively graded is four feet. • <u>Lumber temperature</u> -The recommended lumber temperature operating range is -20° C and up. • <u>Number of grades</u> - Four different grades simultaneously
<p>12. CRIQ Transverse Machines: a. MODEL: TMG- #630- PE32374</p>	<ul style="list-style-type: none"> • <u>Temperature</u> - The equipment shall be operating at temperature above freezing point 32° F (0°C). • <u>Humidity</u> - The recommended environmental operating range for humidity is a maximum of 85% (non condensing). No lower limit. • <u>Operational speed</u> - The maximum operation speed is 160 pieces per minute. • <u>Lumber thickness</u> - The thickness range is from 0 inches to 2 inches. Variance in thickness has no mechanical influence on the machine. • <u>Lumber width</u> - The lumber width range is from 3 inches to 4 inches. • <u>Lumber length</u> - The minimum length of a piece of lumber that can be effectively graded is six feet. The maximum length is nine feet. • <u>Lumber temperature</u> - The recommended lumber temperature operating range is -4° F (-20° C) as lower limit. No upper limit. • <u>Number of grades</u> - The capacity to segregate up to three different grade categories simultaneously.
<p>13. CRIQ Transverse Machines: a. MODEL: TMG-16 #630- PE33389 Machine:</p>	<ul style="list-style-type: none"> • <u>Temperature</u> - The equipment shall be operating at temperature above freezing point 32° F (0° C) • <u>Humidity</u> -The recommended environmental operating range for humidity is <85% (non-condensing). No lower limit. • <u>Operational speed</u> -The maximum operation speed is 240 pieces per minute. • <u>Lumber thickness</u> -The thickness range is from 0 inches to 2 inches. Variance in thickness has no mechanical influence on the machine. • <u>Lumber width</u> -The lumber width range is from 3 inches to 6 inches. • <u>Lumber length</u> -The minimum length of a piece of lumber that can be effectively graded is five feet. The maximum length is sixteen feet. • <u>Lumber temperature</u> -The recommended lumber temperature operating range is -4° F (-20° C) as lower limit. No upper limit. • <u>Number of grades</u> -The capacity to segregate up to three different grade categories simultaneously.
<p>14. Dynalyse AB Precigrader MSR Grading Machine</p>	<ul style="list-style-type: none"> • <u>Temperature</u> - The equipment shall be operating at temperature conditions between 5°C and 35°C • <u>Humidity</u> -The recommended environmental operating range for humidity is < 85% (non-condensing). No lower limit. • <u>Operational speed</u> -The maximum operation speed is 180 pieces per minute.(chain velocity from 0.2 to 1.3 m/s) • <u>Lumber thickness</u> -The thickness range is from 0.79 inches to 4.13 inches. • <u>Lumber width</u> -The lumber width range is from 2.36 inches to 1.81 inches. • <u>Lumber length</u> -The minimum length of a piece of lumber that can be effectively graded is 4 feet. The maximum length is 24 feet. Lumber lengths may vary within 15 feet for one grading session. • <u>Lumber moisture content</u> - The moisture content of lumber shall be 19% and under.

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15. RE - III MSR Machine – previously known as Thumper - III	<ul style="list-style-type: none"> • Lumber sizes: <ul style="list-style-type: none"> ▪ Thickness up to 4 inches ▪ Width up to 12 inches ▪ Length up to 24 feet • Lumber Temperature range: <ul style="list-style-type: none"> ▪ Dry lumber: -50° C to 50° C. When dry lumber is processed while frozen, CUSUM samples must be warmed to between 10° C and 30° C before being bench tested. ▪ Green lumber: 0° C to 50° C • Maximum speed is 200 pieces per minute with a lug chain maximum speed of 350 feet per minute. Higher rates could be obtained by putting in two Thumper units evaluating every other board. • The use of accredited agency quality control and product certification procedures. 																									
16. A-Grader by Falcon Engineering Limited	<ul style="list-style-type: none"> • As per manufacturer specifications 																									
17. Metriguard Model 2350 Sonic Lumber Grader	<ul style="list-style-type: none"> • <u>Operating Temperature</u> - The equipment shall be operating at temperature conditions between -10°C and 45°C • <u>Humidity</u> - The recommended environmental operating range for humidity is <95% (non-condensing). No lower limit. • <u>Operational speed</u> -The maximum operation speed is 250 pieces per minute. • <u>Lumber thickness</u> - The thickness range is from 0.75 inch to 4.0 inches. • <u>Lumber width</u> - The lumber width range is from 2.5 inches to 11.4 inches. • <u>Lumber length</u> - The minimum length of a piece of lumber that can be effectively graded is four feet. The maximum length is twenty-four feet. • <u>Lumber temperature</u> – <ul style="list-style-type: none"> ○ MC < 20 % : -20°C to 50°C ○ MC ≥ 20% : 0°C to 50°C. 																									
18. Calibre Equipment - Ecooustic Grader	<ul style="list-style-type: none"> • <u>Operational speed</u> -The maximum operation speed is 240 pieces per minute. • <u>Lumber thickness</u> - The maximum thickness is 12 inches. • <u>Lumber width</u> - The maximum lumber width is 14 inches. • <u>Lumber length</u> - The maximum length of a piece of lumber that can be effectively graded is 28 feet. • <u>Lumber temperature</u> – <ul style="list-style-type: none"> ○ MC < 20 % : -20°C to 50°C ○ MC ≥ 20 % : 0°C to 50°C. 																									
19. Brookhuis Micro Electronics – Timber Grader mtg	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 35%; text-align: center;"><i>With Internal Stress Wave Activator*</i></th> <th style="width: 35%; text-align: center;"><i>With External Stress Wave Activator*</i></th> </tr> </thead> <tbody> <tr> <td><u>Maximum operating speed:</u></td> <td align="center">30 boards per minute</td> <td align="center">30 boards per minute</td> </tr> <tr> <td><u>Width:</u></td> <td align="center">2 to 10 inches</td> <td align="center">2 to 15 inches</td> </tr> <tr> <td><u>Thickness:</u></td> <td align="center">0.6 to 4.5 inches</td> <td align="center">0.6 to 12 inches</td> </tr> <tr> <td><u>Length:</u></td> <td align="center">1.6 to 26.2 feet</td> <td align="center">1.6 to 65 feet</td> </tr> <tr> <td><u>Machine temperature:</u></td> <td align="center">-10°C to 50°C</td> <td align="center">-10°C to 50°C</td> </tr> <tr> <td><u>Lumber temperature:</u></td> <td align="center">MC < 20%: 0°C to 50°C MC ≥ 20%: 0°C to 50°C</td> <td align="center">MC < 20%: 0°C to 50°C MC ≥ 20%: 0°C to 50°C</td> </tr> <tr> <td><u>*Note:</u></td> <td align="center" colspan="2">Not intended for lumber treated by a fire retardant. Not intended for finger joined lumber.</td> </tr> </tbody> </table>			<i>With Internal Stress Wave Activator*</i>	<i>With External Stress Wave Activator*</i>	<u>Maximum operating speed:</u>	30 boards per minute	30 boards per minute	<u>Width:</u>	2 to 10 inches	2 to 15 inches	<u>Thickness:</u>	0.6 to 4.5 inches	0.6 to 12 inches	<u>Length:</u>	1.6 to 26.2 feet	1.6 to 65 feet	<u>Machine temperature:</u>	-10°C to 50°C	-10°C to 50°C	<u>Lumber temperature:</u>	MC < 20%: 0°C to 50°C MC ≥ 20%: 0°C to 50°C	MC < 20%: 0°C to 50°C MC ≥ 20%: 0°C to 50°C	<u>*Note:</u>	Not intended for lumber treated by a fire retardant. Not intended for finger joined lumber.	
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20. Brookhuis Micro Electronics – mtgBATCH	<u>Maximum operating speed:</u> <u>Width:</u> <u>Thickness:</u> <u>Length:</u> <u>Machine temperature:</u> <u>Lumber temperature:</u> <u>Note:</u>	30 boards per minute 2 to 10 inches 0.6 to 4.5 inches 1.6 to 26.2 feet -10°C to 50°C MC < 20%: 0°C to 50°C MC ≥ 20%: 0°C to 50°C Not intended for lumber treated by a fire retardant. Not intended for finger joined lumber.
21. Brookhuis Micro Electronics – mtgESCAN	<u>Maximum operating speed:</u> <u>Width:</u> <u>Thickness:</u> <u>Length:</u> <u>Machine temperature:</u> <u>Lumber temperature:</u> <u>Notes:</u>	180 boards per minute 2 to 10 inches 0.6 to 4.5 inches 1.6 to 26.2 feet -10°C to 50°C MC < 20%: 0°C to 50°C MC ≥ 20%: 0°C to 50°C Not intended for lumber treated by a fire retardant. Not intended for finger joined lumber.
22. VAB Machines – MLL – MSR Lug Loader	<u>Maximum operating speed:</u> <u>Width:</u> <u>Thickness:</u> <u>Length:</u> <u>Lumber moisture content:</u> <u>Machine temperature:</u> <u>Lumber temperature:</u> <u>MSR Grades:</u> <u>Notes:</u>	6 to 12 feet → 200 boards per minute 14 to 16 feet → 140 boards per minute 2.5 to 5.5 inches 1.5 inches 6 to 16 feet 10% to 25% MC -10°C to 40°C ¹ -30°C to 40°C 2x3 and 2x4 → 1200Fb-1.2E to 3000Fb-2.4E 2x6 → 1200Fb-1.2E to 2400Fb-2.0E ² ¹ Manufacturer recommends use of heated compressed air for operation under 0°C. ² Additional testing will be required for 2x6 MSR grades higher than 2400Fb-2.0E.

Because machine approval applications are submitted by CLSAB Accredited Agencies - CLSAB does not have the addresses or contacts of the manufacturers of a specific machine.