

## **GRADING RULES FOR NORTHERN HARD MAPLE RANDOM LENGTH STRIP FLOORING (*Acer saccharum*)**

### **MFMA NORTHERN HARD MAPLE FLOORING**

MFMA Northern Hard Maple is a dense, strong, remarkably hard and supremely durable product. MFMA Northern Hard Maple offers a wide range of uses and color possibilities. MFMA Northern Hard Maple is close-grained, hard-fibered, free from slivering and splintering, and polishes well under friction. MFMA Northern Hard Maple flooring has a natural beauty when given a transparent finish and is suited for a variety of uses.

Because wood is a natural product, it is subject to color variations resulting from differing growing conditions. The color of maple heartwood is brownish -- the sapwood is much lighter. Consistency of color cannot be controlled in the manufacturing process, and color variation is not a grading defect.

Hard maple has an unusual ability to resist pointed pressure without abrasion. It is easily covered with attractive finishes.

### **ABOUT MFMA**

Founded in 1897, the MFMA is the only authoritative source of technical information about hard maple flooring. The Association publishes grade standards, guide specification, floor care recommendations, and specifications for athletic flooring sealers and finishes. MFMA has published a complete game line and court markings guide. Copies of all publications are available from MFMA headquarters.

MFMA members consult with architects, contractors, school officials, and maintenance personnel to answer questions about the specifications, use, and care of MFMA maple flooring. When you need assistance or information, contact the MFMA Associate Member contractor nearest you, or contact the Maple Flooring Manufacturers Association headquarters office at the address listed on the back of this booklet.

### **GENERAL RULES**

#### **Moisture Control**

We recommend maintenance of 6 percent to 9 percent average moisture content following manufacture. Upon receipt of shipment, proper moisture controls must be exercised to maintain proper moisture content.

#### **Edge-Grain Flooring**

Edge-grain hardwood flooring is specially selected and consists of pieces in which the annual rings range from 30 degrees horizontal to 90 degrees vertical.

Since hard maple is generally produced from lumber sawn out of relatively small logs with varying knurls, resulting in considerable variation in a single piece, flooring shall be considered to be all edge-grain if 75 percent of each piece falls within the above-mentioned range.

#### **Kiln Drying**

Flooring shall not be considered of specified grade unless the lumber from which the **MFMA-RL** flooring is manufactured has been properly kiln-dried.

#### **End Matching**

All **MFMA-RL** flooring shall be end-matched unless otherwise specified.

### Bundled Strip Flooring

Bundled **MFMA-RL** flooring is random length flooring bundled in average length bundles. A bundle may include pieces from 6 inches under to 6 inches over the nominal length of the bundle. **MFMA-RL** flooring is bundled by grade in conformance with regular grade requirements. No piece shorter than 9" is admitted.

### Nested Strip Flooring

Nested **MFMA-RL** flooring is random length flooring bundled continuously end to end, typically in 7' or 8' bundles (6-1/2' to 8-1/2' actual length). **MFMA-RL** flooring is bundled by grade in conformance with regular grade requirements. No piece shorter than 9" is admitted.

### Length Distribution by Grades

GRADE/LENGTH	LESS THAN 42"	LESS THAN 30"	LESS THAN 18"*
FIRST	MAXIMUM 55% ALLOWED	MAXIMUM 35% ALLOWED	MAXIMUM 10% ALLOWED
SECOND AND BETTER	MAXIMUM 60% ALLOWED	MAXIMUM 42% ALLOWED	MAXIMUM 15% ALLOWED
THIRD AND BETTER	MAXIMUM 70% ALLOWED	MAXIMUM 55% ALLOWED	MAXIMUM 25% ALLOWED
THIRD	MAXIMUM 85% ALLOWED	MAXIMUM 75% ALLOWED	MAXIMUM 40% ALLOWED
UTILITY	MILL OPTION	MILL OPTION	MILL OPTION

The above chart reflects maximum allowable average percentage of lineal footage of 2-1/4" flooring per pallet, by grade. All percentages are inclusive. \*No piece shorter than 9" admitted.

### Beech and Birch Flooring

These rules also apply to beech (*Fagus grandifolia*) and birch (*Betula alleghaniensis*) flooring.

### HOW TO SPECIFY MFMA-RL (Random Length) NORTHERN HARD MAPLE FLOORING

**MFMA-RL** (Random Length) strip flooring is specified in the same manner as **MFMA-FJ** (Finger Jointed) and **MFMA-PQ** (Parquet) Northern Hard Maple flooring. For example, when ordering, requesting or specifying **MFMA-RL** (Random Length) Northern Hard Maple flooring, specify as "**MFMA-RL**" and list the grade, required species, and thickness. A typical specification should appear as follows:

#### 2.1 Materials

- A. Flooring shall be **MFMA-RL** First Grade Northern Hard Maple, 25/32" thick x 2 1/4" wide; T & G and EM; grade marked and stamped as produced by an MFMA member manufacturer.

### MFMA-RL (Random Length) NORTHERN HARD MAPLE FLOORING GRADING RULES

#### MFMA-RL (Random Length) First Grade Northern Hard Maple

The highest standard grade. MFMA maple is an extremely durable and desirable flooring for any building; particularly suitable for fine homes, apartments, churches, clubs, dance floors, gymnasiums, handball and racquetball courts, school classrooms, hospitals, hotels, offices, roller-skating rinks, and other applications where fine appearance and long wear are desired. With the use of some finishes, slight shadows and color variations may appear.

This grade of **MFMA-RL** Northern Hard Maple combines appearance and durability and has a face free of defects that will materially mar the appearance of the finished floor or impair its durability. A practical application of this

rule will admit variations in the natural color of the wood; an occasional small, firm pin knot not over 1/8" in diameter, provided it does not occur on edges or ends of strips; occasional dark green or black spots or streaks not over 1/4" wide and 3" long (or its equivalent) which may contain a slight check not over 1/2" long, providing it is boxed within the piece; bird's-eyes and small burls; a slightly torn grain; or similar defect which can be readily removed by the ordinary method of smoothing the floor when it is laid.

Bark streaks shall not be permitted. A slightly shallow place not over 12" long on the underside of flooring, if it does not extend to either end of the piece, and an otherwise perfect tongue which is one-half short for 25 percent of length of piece are admissible, but the face must be free of shake, and the wood must be live and sound.

**MFMA-RL (Random Length) Second and Better Grade Northern Hard Maple**

This grade of **MFMA-RL** maple will provide the same long life and low maintenance performance as **MFMA-RL** First Grade Northern Hard Maple. **MFMA-RL** Second and Better Grade Northern Hard Maple is an ideal choice for gymnasiums, handball and racquetball courts, multipurpose rooms, cafeterias and shops in schools, industrial plants, offices, commercial buildings, and residences.

This grade admits tight, sound knots, provided they do not occur on edges or ends of strips; distinct color variations; numerous dark green or black spots or streaks - provided they do not occur in combination with predominately dark heartwood; slight checks not exceeding 3" in length and running parallel with and well inside the edges and ends of the strip; dark spots or streaks with slight checks in center; small rough spots which cannot be wholly removed by the ordinary method of smoothing the floor when it is laid; slightly torn edges; short tongue if sufficient to hold properly in the floor; shallow or waney back if piece has sufficient bearings of full thickness to support it in the floor; and slight variation in angle of end matching. With the use of some finishes, light sticker shadow and color variations may appear. While these and similar features are admissible, sufficient attention is given to appearance to make this grade desirable and satisfactory for use in stores, schools, factories, and similar places where superficial defects and blemishes are not a real factor of consideration. The face must be free of shake, and the wood must be live and sound. Bark streaks shall not be permitted.

**MFMA-RL (Random Length) Third and Better Grade Northern Hard Maple**

This grade of **MFMA-RL** maple is comprised of a mixture of all other grades of **MFMA-RL** Northern Hard Maple. The lowest grade admissible shall not be less than **MFMA-RL** Third Grade Northern Hard Maple. **MFMA-RL** Third and Better Grade Northern Hard Maple is suited for nearly any application where variations in appearance are not an aesthetic concern. This grade can be produced as a mill run product provided it contains a minimum of 60% **MFMA-RL** Second and Better Northern Hard Maple; however it can also be produced by mixing 60% **MFMA-RL** Second and Better Northern Hard Maple and 40% **MFMA-RL** Third Grade Northern Hard Maple. This grade allows defects as described in other grades of **MFMA-RL** Northern Hard Maple flooring.

**MFMA-RL (Random Length) Third Grade Northern Hard Maple**

This grade of **MFMA-RL** maple is an ideal choice for gymnasiums, multipurpose rooms, cafeterias and shops in schools, industrial plants, offices, commercial buildings and residences. **MFMA-RL** Third Grade Northern Hard Maple gives excellent performance in recreation rooms, factories, warehouses, grain storage and other farm buildings, and rooms of antique decoration where a unique floor is desired. **MFMA-RL** Third Grade Northern Hard Maple is suitable for kindred uses where good wearing qualities are required together with medium cost and appearance. This grade may contain all defects common to maple, but the wood must be firm and serviceable. It will not admit voids on edges or ends, or knot holes over 3/8" in diameter; partially unsound knots where the unsound portion is over 1" in diameter; or shakes, heart checks, badly split ends and imperfections in manufacture which materially impair the serviceability of the flooring for the purpose intended.

**MFMA-RL (Random Length) Utility Grade Northern Hard Maple**

This grade of **MFMA-RL** maple may contain all defects common to maple, but the wood must be firm and serviceable. **MFMA-RL** Utility Grade Northern Hard Maple will not admit voids on edges or ends, or knot holes over 3/8" in diameter; partially unsound knots where the unsound portion is over 1" in diameter; or shakes, heart checks, badly split ends and imperfections in manufacture which materially impair the serviceability of the flooring for the purpose intended. Individual strips in this grade have no minimum length requirements.

## **RULES GOVERNING REINSPECTION**

Even the most experienced inspectors will occasionally misgrade some pieces. Therefore:

Shipments shall be considered to be the grade invoiced if, upon inspection by an official inspector of the Maple Flooring Manufacturers Association, 95 percent or more, in feet, is found to be of grade invoiced. Where the degrades are in excess of 5 percent, in feet, of the shipment, the degrades in excess of the 5 percent shall be the property of the manufacturer of the flooring.

The quality of the flooring in the condition in which it leaves the manufacturer is held to govern the grade, as subsequent lack of care and improper treatment in laying, sanding, or finishing are not chargeable to the manufacturer.

In the event that the amount below grade is found to be 5 percent or less, in feet, of the total amount of the item, the cost of reinspection shall be borne by the complainant. If more than 5 percent in feet, the expense shall be borne by the manufacturer of the flooring.

For dispute resolution contact MFMA. Specific "Guidelines for Reinspection" are available upon request. In any dispute involving the grade of the flooring material where an MFMA reinspection is requested, the determination of the MFMA inspector shall prevail.

## **USES OF DIFFERENT THICKNESSES**

The 25/32" thickness is most commonly used for general purposes.

The 33/32" thickness, with its additional wearing surface and load carrying ability, is recommended where floors are subjected to extraordinary strain and wear.

Jointed (also called Square-Edged) flooring has the advantage of easy replacement in industrial floors.

## **SIZES OF MFMA-RL (Random Length) NORTHERN HARD MAPLE FLOORING**

MFMA-RL (Random Length) Tongued and Grooved Flooring

Thicknesses		
25/32"	1.984cm	(19.84mm)
33/32"	2.619cm	(26.19mm)
Face Widths		
1-1/2"	3.810cm	(38.10mm)
2-1/4"	5.715cm	(57.15mm)
3-1/4"	8.255cm	(82.55mm)

Jointed flooring

Thicknesses		
25/32"	1.984cm	(57.15mm)
33/32"	2.619cm	(26.19mm)
2-1/4"	5.715cm	(57.15mm)
3-1/4"	8.255cm	(82.55mm)
3-1/2"	8.890cm	(88.90mm)

## CARE OF FLOORING AFTER DELIVERY

**MFMA-RL** (Random Length) Northern Hard Maple flooring is made from lumber kiln-dried to the proper moisture content. After kiln drying, the lumber is air-cooled and cut into strips, accurately milled, carefully graded, bundled, and stored in a dry, well-ventilated warehouse.

As a valuable product, it deserves from the dealer, trucker, and floor layer the same care in handling accorded by the manufacturer. TO ENSURE the most satisfactory results in the finished floor, observe these simple precautions:

- Don't unload, truck, or transfer flooring in rain or snow. If atmosphere is foggy or damp, cover with a tarpaulin.
- Don't store flooring in leaking or open enclosures.
- Don't unload flooring outside of a shelter at the jobsite.
- Don't overlook providing protected ventilation to keep relative humidity at a minimum.
- Don't store or lay flooring in a cold, damp building or directly on a concrete slab. Wait until plastering and cement work are thoroughly dried and woodwork and trim are installed.
- Flooring should be delivered to the premises a minimum of seven days before installation, or as required for acclimation. All flooring should be placed in the area into which it is to be installed to assure proper acclimation to the environmental conditions of the facility.

## RESOURCES

The Maple Flooring Manufacturers Association has produced a library of technical information designed for specifiers, architects, end users, and other professionals. Below is a complete list of available publications and videos:

### Literature:

Caring for your MFMA Maple Floor (Wall Chart)  
 Floor Finish List & Specifications  
 Grading Rules for MFMA Northern Hard Maple Finger Jointed Flooring  
 Grading Rules for MFMA Northern Hard Maple Parquet Flooring  
 Incidence of Injury Study: Maple Flooring vs. Synthetic  
 Life Cycle Cost Study Summary and Cost Comparison Worksheet  
 Maple Flooring: Today's Preferred Sports Surface  
 MFMA Sweet's© Catalog – 09642/MAP – Buyline 3238  
 MFMA Game Marking Manual  
 MFMA Guide Specifications (for subfloor systems)  
 MFMA Maple Flooring: The Logical Choice for Your Home  
 Performance Characteristics Guide  
 Sanding, Sealing, Court Lining, Finishing and Resurfacing  
 Spec-Data (in CSI Format)

### Videos:

“Your Next Sports Floor: Things You Should Know” (12:00 VHS)  
 “Playing For Keeps” (9:50, VHS, English and Spanish versions included). Proper care & maintenance of your MFMA sports floor.

## **PURPOSE**

Maple Flooring Manufacturers Association (MFMA) provides these Random Length Flooring Grading Rules, including proposals on care, as a guide to specifiers, architects, end users, and other professionals. MFMA, its members and employees, do not warrant the information contained herein as proper under all conditions. MFMA reserves the right to revise these Random Length Flooring Grading Rules as necessary.

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**Grading Rules – RL.doc**