

# **Specifying the Best Sports Floor for Your Facility**

## **Supplemental AIA Course Hand-Out**

### **Benefits of Specifying Northern Hard Maple**

Maple is the common name for trees and shrubs in the genus *Acer*. There are approximately 128 species with most native to Asia. Only one species of maple extends to the southern hemisphere. Northern hard maple offers design professionals an excellent choice for sports flooring.

Sports flooring differs immensely from floors designed for any other purpose. Because the needs of athletes come first, performance, safety and comfort are inherent characteristics.

Floor design can focus on a specific activity, say aerobics versus basketball, or on multiple purposes to suit the exact need of a facility or application: gymnasiums; handball, squash and racquetball courts; basketball courts; health and fitness clubs; international Olympic facilities; professional sports arenas; aerobic/dance exercise facilities; dance floors; auditoriums and convention centers; church and religious facilities; primary and secondary schools; colleges and universities; corporate exercise facilities; YWCA/YMCAs; family life centers; roller skating rinks; theater and performance stages; or commercial, industrial and residential applications.

Time and again, athletes, performers, coaches, trainers, owners and architects who design floors cite maple as their preferred sports surface. In fact, maple shows up on 70 percent of the sports floors installed in the U.S. Northern hard maple accounts for 58 percent of all U.S. sports floors — more than 22 million square feet — installed each year.

Northern hard maple has been called nature's perfect flooring surface. Northern hard maple was first used in sports flooring nearly 150 years ago. Maple is produced from trees grown north of the 35th parallel where shorter growing seasons produce maple with closer, more uniform grain. In a floor, northern hard maple exhibits flexibility, resilience, durability, finish ability and low-demand maintenance. Athletic performance is enhanced by its hard-but-resilient character. Subfloor systems enhance maple's natural shock

absorption and area elasticity. And the surface provides dependably uniform grip and traction to athletic footwear.

## **Northern Hard Maple Versus Synthetic Flooring**

Many factors need to be considered when investing in a new sports surface. Resilience and durability, color contrast for lines, impact on players' joints and the purpose the space serves all factor into the decision. When it comes to indoor basketball, volleyball and dance, among others, a northern hard maple sports floor checks all those boxes.

Synthetic floors certainly have a place in the industry; for cafeterias or trade shows, indoor tracks or weight rooms, maple is not ideal, and synthetic outperforms a hardwood floor.

However, when those events and sports aren't part of the normal use for the space, northern maple is your best choice. Compared to southern maples, northern hard maple has a tighter grain due to a shorter growing season. As a result of the colder winter in the north, northern hard maple is denser and significantly harder and more dent-resistant than southern maples, which are commonly use in cabinetry.

Also, consider construction method. For some sports, such as aerobics and dance, the resilient pad will be different than for basketball or volleyball. The durometer is softer for aerobics and dance and stiffer for basketball and volleyball. Both have an engineered subfloor to give the best sport floor system for each type of sport.

Once your northern hard maple flooring is installed, maintenance is relatively minimal. It is recommended the floor is recoated annually; this means the surface is roughed up and a new coating of surface finish is applied. Every 7 to 10 years, the floor needs to be sanded down to bare wood. Optimally, 10 years is the target.

## **Best Practices**

In order for projects to fully benefit from northern hard maple products, design professionals are recommended to specify sports flooring according to the following standards:

### **Shock Absorption**

ASTM F2569-07

Measures the flooring system's ability to absorb impact forces generated by the athlete.

### **Vertical Deflection**

ASTM F2157-09

Measures the floor system's downward movement during the impact of an athlete landing on the surface.

### **Area of Deflection**

ASTM F2157-09

Measures the floor system's ability to contain the deflected area under an athlete's impact, measured at 20" (500 mm) from the point of impact.

### **Basketball Rebound**

ASTM F2117-10

Measures the basketball's rebound response off the sports floor system as compared to the ball's rebound response off concrete.

### **Surface Friction**

ASTM D 2047

Measures an athletic flooring finish's ability to control the sliding of athletes on a sports surface.

In addition, design professionals should specify northern hard maple flooring from manufacturers who use third-party inspections to assure that industry wood species, millage, and grading standards are being followed.