

# THERMALLY MODIFIED RED OAK

Thermally Modified Red Oak utilizes a specialized process where the wood is heated (using steam) to a very high temperature to transform it on a molecular level into a highly-durable outdoor material. With thermal modification the lumber undergoes a fundamental change -- where the sugars and starches caramelize making the wood a non-food source, the wood cell walls lock into place preventing the wood from absorbing water like that of unmodified wood, and the appearance changes to a chocolate brown color. The resulting wood has a durability that is multiplied many times over its original lifespan; comparable to the performance seen in many tropical hardwoods.

## WHY RED OAK

Red Oak (*Quercus rubra*) is an abundant, mild to fast growing, sustainable hardwood harvested in North America. One of the most plentiful trees in the U.S., Red Oak accounts for 18% of the U.S. hardwood growing stock. Furthermore, the plentifulness of this species makes the replacement rate impressively low -- it takes 1.04 seconds for the U.S. forests to replace 1 cubic meter, that is faster than most other hardwoods including Maple, White Oak, Ash, and Cottonwood(Poplar) to name a few. Beyond abundance, Red Oak wood is notably a sustainable material due to the species' carbon sequestration potential. Over its growing life it is able to absorb an abundance of carbon removing human-caused emissions of the greenhouse gas carbon dioxide from the earth's atmosphere. When the wood is harvested and used the carbon is not released back into the atmosphere like it would have been if the tree were to rot. Why Red Oak and not Ash, arguably the most known thermally modified wood? In recent years the Emerald Ash Borer has had devastating impacts on the North American Ash populations, limiting the current availability and making the future outlook for the species very grim. Thermally Modified Red Oak is quite similar in both performance and appearance while also being very sustainable and readily available.

## CLOSE TO HOME

DuMor has always strived to reduce our carbon footprint by sourcing as much material as possible from sources close to our manufacturing facility in Pennsylvania. We are elated to be able to offer this product where the trees used are grown in our home state and the thermal modification is done less than an hour from the DuMor factory.

## WHAT TO EXPECT

Thermally modified wood, is still wood and many of the environmental changes the wood undergoes are the same as other woods. Without any kind of treatment, the wood will quickly lighten to a lighter brown and then turn silver. After a few wet/dry cycles, some boards will show superficial checking, and occasional cracks will manifest usually near the ends of some boards. The checks and cracks do not get worse over time after this initial seasoning. Every board is different, which is part of the charm of using a natural product. None of these occurrences indicate product failure; rather, it is the wood adapting to its new environment.

