

PACKAGING KILN DRIED LUMBER FOR THE CUSTOMER

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Introduction

Packaging lumber after kiln drying is as important as the drying process itself. Paying careful attention to the maintenance of the kiln equipment, lumber handling procedures such as stickering and baffling, kiln schedules and then leaving the lumber in the snow, rain and sun defeat the purpose of good drying practices. The economic loss experienced by some mills runs into millions of dollars. This paper will divide packaging into two categories:

- (1) Dunnage
- (2) Wrapping material and Wrapping Procedures

Dunnage

There are two types of dunnage used for packaging dried lumber referred to as:

- (a) Loose Dunnage
- (b) Strapped Dunnage

Loose Dunnage

Loose dunnage is used in most mills in British Columbia for shipping to the North American market. This type of dunnage is 4 x 4 or 2 x 4 (doubled to simulate 4 x 4) usually 48" long made from western hemlock on the coast or SPF in the interior of the province. There are no grooves for strapping them with the loads. They are manually placed under the packages. The advantage for using loose dunnage is that it is cheaper than strapped dunnage. The disadvantages are:

- (a) Difficult to place equidistant along the load.
- (b) They are not strapped to the load and this poses a safety hazard during transportation.

- (c) During preparation of the load for shipping, the forklift driver spends time moving and removing dunnage and this is not cost effective.
- (d) When the lumber arrives at its destination, the dunnage must be collected and placed in boxes.

Strapped Dunnage

Strapped dunnage is mostly used for overseas markets, and these are the characteristics which make them different from loose dunnage: They are produced with grooves $\frac{3}{4}$ " wide to accommodate the strapping. Leslie Forest Products manufacture them by utilizing veneer cores and this gives a very attractive appearance to the loads.

The advantages of utilizing strapped dunnage are the following:

- (a) Spacing of the dunnage is consistent since it is done mechanically.
- (b) Frees up time for the forklift driver to perform other tasks.
- (c) Eliminates any safety hazards during transportation since the dunnage is strapped to the loads.
- (d) At destination, no time is wasted on picking up and storing dunnage.

The disadvantage is that it costs more than loose dunnage since the manufacturing cost is greater.

Wrapping

The next stage in the shipping process is lumber wrapping. The type of paper has a direct impact on the dried product. The appearance as well as the moisture content of the lumber can be affected. The prerequisites for good quality paper wrap are the following:

- (a) Allows the lumber that is packaged to breathe so that no condensate is held inside.
- (b) Block out light which can discolor the lumber thereby affecting its appearance.
- (c) Has a life span to reach the customer after several handlings.
- (d) Must be cost effective.

Lumber wrap in the British Columbia industry consists of two kinds usually referred to as: (1) Type II; (2) Type F

Type II is a paper backing material made up of four layers:

- Inside - Paper
- Polyethylene Material
- Fabric
- Polyethylene Material (white in color)

Type F is an all fabric material made up of three layers:

- Black Layer inside
- Fabric

White material on the outside for printing the mill's logo and other shipping information.

Sixty five percent of customer's requirements are for Type F and 35% for Type II wrap. Some of the advantages and disadvantages of these two wrappings are noted in Table (1).

Wrapping Procedures at the Mill Site

The wrapping procedures adopted by the mill are:

- (a) Loose Wrapping
- (b) Corner Wrap

These two procedures are done automatically at some sites which are equipped with the machinery to perform this task. The smaller operations still wrap the lumber manually. Loose wrapping is done with the paper draped over the top and sides, the excess is folded at the sides and stapled. Corner wraps are complete covers that fit over the bundles.

After use, most of the wrapping ends up in landfill, but there are some smaller added value plants which recycle the used wraps. It is often said in the industry that the best wrapping is done with the fewest staples, the number mentioned is 68. There are examples where 400-500 staples were used in a load. Too many staples can damage the appearance of the lumber thereby lowering its value. Customers need to be assured that the product shipped is guaranteed at the moisture content specified. Wrapping and protecting the lumber assist to achieve that goal.

TABLE 1. Advantages and disadvantages of two types of wrap.

Type of Wrap	Advantages	Disadvantages
Type II	<ul style="list-style-type: none"> (a) Absorbs condensation and acts like a piece of blotting paper. (b) Holds tape together well. (c) Logo of the mill and other information go on the white face of the paper at no extra cost. (d) Cheaper than Type F. 	<ul style="list-style-type: none"> Longevity is threatened when it is handled several times before reaching the customer.
Type F	<ul style="list-style-type: none"> (1) Stronger since the material is of fabric type. (2) Because of the black inside, discoloration of the packages is infrequent. (3) Lasts several handlings before it is damaged. 	<ul style="list-style-type: none"> (1) More expensive. (2) Stretches and pin hole because of the coating.