

electrical purposes. Well might it be called "a turning point in German policy with regard to inland waterways."

At the beginning of this year an important meeting was held at Nürnberg, attended by commercial men and representatives of trade and industry generally, not from Bavaria, Württemberg, and Baden only, but also from North Germany, and by a number of members of the Bavarian Diet as well. The principal subject of discussion was the commercial, political, and military importance, not to say necessity, of this very proposal, the connection by water, for steamers of large tonnage, of the Danube and the Rhine. A lengthy resolution was passed, insisting upon the desirability of speedily executing this project, and asserting that the main stream of German trade and communications must not be in future exclusively dependent upon overseas communications.

The Germans behind the front are obviously not idle, and are laying countless plans and forming countless projects for the period "after the war." They are even discussing utilizing the special war rolling-stock, of which they and the Austrian railways now possess so much, for commercial purposes after the war.

The Austrians and Germans as a rule believe or pretend to believe that the war will be followed by a period of immensely enhanced prosperity, when there will be a far greater demand for than supply of labor, and when production in every department of commercial life will be proceeding with the utmost speed. Many of the buildings now used for army purposes it is proposed to utilize after the war for manufacturing purposes.

A trade war against the United Kingdom and British Dominions generally is to begin the moment hostilities cease. No one should be under any delusion on this point: the Germans and Austrians expect to be fought and expect to fight commercially, after the fighting on the battlefield is over.

PROPOSED SPECIFICATIONS FOR DOUGLAS FIR BRIDGE AND TRESTLE TIMBERS.*

I. Definitions.—1. The following definitions are used in connection with these specifications:—

(a) *Annual Ring.*—Each annual ring is composed of two distinct types of wood structure, namely, the porous, light-colored and light-weight spring wood formed during the first part of the growing season, and the hard, dense and darker colored summer wood formed during the latter part of the growing season.

(b) *Summer Wood.*—Summer wood is the hard, dense portion of the annual ring. It is darker in color than the more porous spring wood.

(c) *Sound and Tight Knot.*—A sound and tight knot is one which is solid across its face and which is as hard as the wood surrounding it; and is so fixed by growth or position that it will retain its place in the piece.

(d) *Encased Knot.*—An encased knot is one whose growth rings are not intergrown and homogeneous with the growth rings of the piece it is in. The encasement may be partial or complete; if intergrown partially or so fixed by growth or position that it will retain its place in the piece, it shall be considered a sound and tight knot.

(e) *Loose Knot.*—A loose knot is one not firmly held in place by growth or position.

*Presented, by a committee, to the American Society for Testing Materials, Philadelphia, Pa., for discussion, amendment and possible adoption at next annual meeting.

(f) *Rotten Knot.*—A rotten knot is one not as hard as the wood it is in.

(g) *Measurement of Knots.*

In Beams, the diameter of a knot on the narrow or horizontal face shall be taken as its projection on a line perpendicular to the edge of the timber. On the wide or vertical face, the smallest dimension of a knot is to be taken as its diameter.

In Columns, the diameter of a knot on any face shall be taken as its projection on a line perpendicular to the edge of the timber.

(h) *Diagonal Grain.*—(Including cross and spiral grain.) Diagonal grain is grain not parallel with all the edges of the piece.

(i) *Dense and Sound Douglas Fir.*—Under this heading two classes of timber are designated: (1) Dense Douglas fir and (2) sound Douglas fir. It is understood that these two terms are descriptive of the quality of the clear wood.

(j) *Dense Douglas Fir.*—Dense Douglas fir shall show on either one end or the other an average of at least six annual rings per inch or 18 rings in three inches and at least 33⅓ per cent. summer wood, as measured over the third, fourth and fifth inches on a radial line from the pith, for girders not exceeding 20 in. in height, and for columns 16 in. square or less. For larger timbers

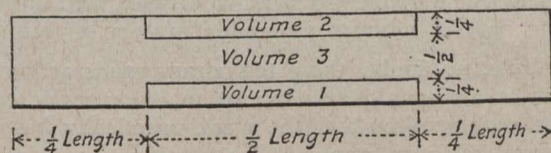


FIG. 1.

the inspection shall be made over the central three inches on the longest radial line from the pith to the corner of the piece. Wide-ring material excluded by the above will be accepted, provided the amount of summer wood as above measured shall be at least 50 per cent.

In cases where timbers do not contain the pith, and it is impossible to locate it with any degree of accuracy, the same inspection shall be made over three inches on an approximate radial line beginning at the edge nearest the pith.

The radial line chosen shall be representative. In case of disagreement between purchaser and seller as to what is a representative radial line, the average summer wood and number of rings shall be the average of the two radial lines chosen.

(k) *Sound Douglas Fir.*—Sound Douglas fir shall include pieces of Douglas fir without any ring or summer wood requirement.

II. General Requirements.—2. (a) The timber shall be only "Dense Douglas fir" as defined in section 1 (j).

(b) The timber shall be well manufactured, square edge, and sawed standard size; solid and free from defects, such as ring shakes and injurious diagonal grain, loose or rotten knots, knots in groups, decay, pitch pockets over 6 in. long or 3/8 in. wide, or other defects that will materially impair its strength.

(c) Occasional variation in sawing, not to exceed 1/4 in. scant at the time of manufacture, will be allowed.

(d) When timbers 4 by 4 in. and larger are ordered sized, they shall be 1/2 in. less than rough size, either S1S1E or S4S, unless otherwise specified.

III. Stringers, Girders and Deep Joists.—3. The timber shall show not less than 85 per cent. of heart on

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