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**Drying procedures for modified wood with resin impregnation
(English Translation)**

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Foreword

This document starts from the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" grass.

This document was proposed and managed by the National Timber Standardization Technical Committee (SAC/TC41).

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1 Scope

This document specifies the terms and definitions of thermosetting resin impregnated modified wood, drying equipment requirements, preparations before drying, and drying process Operation rules, dry quality inspection, safety protection and storage.

This document is applicable to the drying of modified wood impregnated with thermosetting resin using humid air and atmospheric superheated steam as the medium.

2 Normative references

The contents of the following documents constitute indispensable clauses of this document through normative references in the text. Among them, dated reference documents, Only the dated version is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document file.

GB/T 1931 Method for determination of wood moisture content GB/T 6491 Dry quality of sawn timber GB/T 12801 General Principles of Safety and Health Requirements for Production Process GB/T 15035 Terminology for wood drying GB/T 17661 Method for testing the performance of sawn timber drying equipment GB/T 31754 Technical Specification for Modified Wood Production GB/T 33022 Classification and labeling of modified wood GB/T 35817 General technical requirements for resin-modified wood for indoor use LY/T 1068 kiln drying process specification for sawn timber LY/T 1069 Air-drying process specification for sawn timber LY/T 1798 General technical conditions for sawn timber drying equipment LY/T 3034 General technical requirements for the production of resin-impregnated modified wood

3 Terms and definitions

The following terms and definitions defined in GB/T 15035 and GB/T 33022 apply to this document.

Modified wood with resin impregnation it is made by treating wood with water-soluble thermosetting resin (such as urea-formaldehyde resin, phenolic resin, melamine resin, etc.) as the main modifier of modified wood.

4 Drying equipment requirements

The performance of the drying equipment should meet the requirements of GB/T 17661 and LY/T 1798.

5.1 Equipment inspection

5.1.1

Check whether the operation and display of the control cabinet's instruments are normal; whether the connection of each moisture content measuring point line and the host is normal.

5.1.2

Check whether the heating valve of the heating system and the steam injection valve of the steam injection system work normally; check whether the nozzle of the steam injection pipe is blocked Plug; to ensure that there are no leaks in the heating plate and the pipeline.

5.1.3

Check whether the fan is running smoothly, repair or replace it in time if there is an abnormal response; check whether the inlet and exhaust valves are running flexibly, Whether the air tightness is good when in the closed position.

5.1.4

Check the humidity detection device. If the drying equipment uses a dry and wet bulb thermometer to measure the state of the dry medium, pay attention to the dry and wet bulb temperature the wet bulb gauze of the meter should always be kept moist. Generally, the distance between the wet bulb temperature sensor and the water level of the water tank should be 30mm-50mm.

5.1.5

Check whether the kiln body and door of the drying kiln are sealed.

5.2 Stacking and air drying

5.2.1

The modified material dried in the same kiln should have the same tree species and resin, and the resin concentration should be similar. The allowable deviation of the thickness of the board shall be the level of the modified material.

10% of the average thickness, the initial moisture content should be consistent.

5.2.2

The partitions should be made of hard and dry hard broad-leaved materials with little deformation, or made of stainless steel or aluminum alloy; the cross-sectional dimensions of the partitions should be.

(20-25)mmx(25-30)mm, thickness tolerance is ± 1 mm; the length of the spacer should be compatible with the width of the stack.

5.2.3

The spacers should be perpendicular to the length of the stack, and the spacing is generally 0.3m~0.6m; the spacers of the upper and lower layers of the stack should be in the height direction it should be on a vertical line and fall on the supporting beam of the stack or pallet. The spacers at both ends of the stack should be flush with the end face of the stack.

5.2.4

The sides of the stack should be kept flush. When the lengths of the plates are different, the long plates should be stacked on the lower part and on both sides of the stack, and the short plates should be stacked on the stack.

The middle and upper part of the pile to ensure the stability of the pile; the upper part of the pile should be pressurized with heavy objects or a compression device (such as packing belt) should be used to prevent the pile the upper wood is deformed.

5.2.5

The external dimensions of the wood pile should be compatible with the structure and internal dimensions of the drying kiln. For a drying kiln with a forklift loaded kiln, if the wood pile is the width of the drying kiln is not suitable, so when the kiln is installed in the depth direction of the drying kiln, two adjacent rows of stacks must be staggered to prevent the circulating air from flowing the material Pass by. If the modified material to be dried is not enough to fill a kiln, the width of the material pile can be reduced to ensure that the material pile is loaded as far as possible along the length and height of the kiln.

Full to avoid short circuit of air flow.

5.2.6

During the stacking process, 6-9 plates must be selected at different positions of the stack for moisture content inspection. The moisture content inspection plate should be selected Straight texture, no knots, no cracks and obvious visible defects, representative plates with relatively wet, the placement of the inspection plate is in accordance with the requirements of GB/T 6491 Operation. The moisture content data in the drying process shall be tested in accordance with the GB/T 1931 gravimetric method or the electrical measurement method verified by the gravimetric method.

5.2.7

The modified material should be air-dried to a moisture content of less than 25%, and then kiln-dried. The air-drying time should be more than 1 month. Field during air-drying the local conditions and management should meet the technical requirements of LY/T 1069.