

Preservation, Packaging, storage, and transport | part 03: drying cylinder

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ABSTRACT:

This standard describes the minimum standards for drying cylinder and the general conditions for preservation, packaging, storage and transport from drying cylinder.

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1 Scope

This standard is valid throughout the Voith Group and to its subcontractors.

2 Area of Application

This standard considers only stationary drying cylinder and describes the minimum standards to be satisfied at Voith for all activities concerning drying cylinder. If statutory provisions or contractually agreed customer requirements go beyond this Voith minimum standard, the more restrictive version shall apply.

3 Purpose

Due to differing conditions in the Voith divisions, as well as in the respective locations worldwide, this Voith standard defines the rules that have to be observed as a minimum standard worldwide. Any additional requirements beyond the minimum standard described here that are imposed by country-specific formalities must likewise be satisfied.

3.1 National and international standards and regulations

The application of standards and regulations declared binding by law is mandatory. For undated references, the latest version shall apply.

The minimum requirements for crane systems and transportation by crane at Voith is described in this standard.

4 Terms and definitions

General terms and definitions drying cylinder and the associated activities are set out in International Standard EN 15011.

VN	Voith Standard
VS	Voith Standard
GK	Goods Class
VK	Packaging category
VCI foil	Volatile Corrosion Inhibitor foil
SVHC substances	Substances of very high concern
REACH	Regulation (EC) No. 1907/2006 (REACH Regulation) is an EU chemicals regulation that came into force on 1 June 2007. REACH stands for Registration, Evaluation, Authorization and Restriction of Chemicals

5 General conditions

5.1 External packaging inspections (for direct deliveries)

See VN 1577-1 (Part 1: General packaging standard), Section 5.3

5.2 Guarantee

See VN 1577-1 (Part 1: General packaging standard), Section 5.4

6 Packaging materials

6.1 Wood

See VN 1577-1 (Part 1: General packaging standard), Section 6.1.

6.2 Foils

See VN 1577-1 (Part 1: General packaging standard), Section 6.2

7 Corrosion protection

Because of the long transportation and storage time, the drying cylinders must be protected against corrosion.

The corrosion protection must be executed in accordance with VN 1576-2 (Part 2: Preservation and storage of rolls).

The defined processing instructions for the relevant corrosion inhibitor must be strictly followed.

In the case of extended storage and transportation times, the preservation must be checked for its effectiveness.

7.1 Corrosion inhibitors

For the use of corrosion inhibitors for drying cylinders, exclusively group 2 in accordance with VN 1576-1

(Part 1: General preservation and storage), Section 6.2, applies

8 Preservation matrix

The preservation methods to be employed for the respective component are defined in VN 1576-2 (Part 2). For the drying cylinders the preservation method must be assigned in accordance with the cylinder surface condition. The following surface conditions of the roll body apply to dryers:

- cylinder with a shell from gray cast iron, conventional or increased hardness, uncoated
- cylinder with a shell from unalloyed or low-alloy steel, uncoated
- cylinder with chrome cover
- cylinder with cover (thermally sprayed coating)

9 Storage

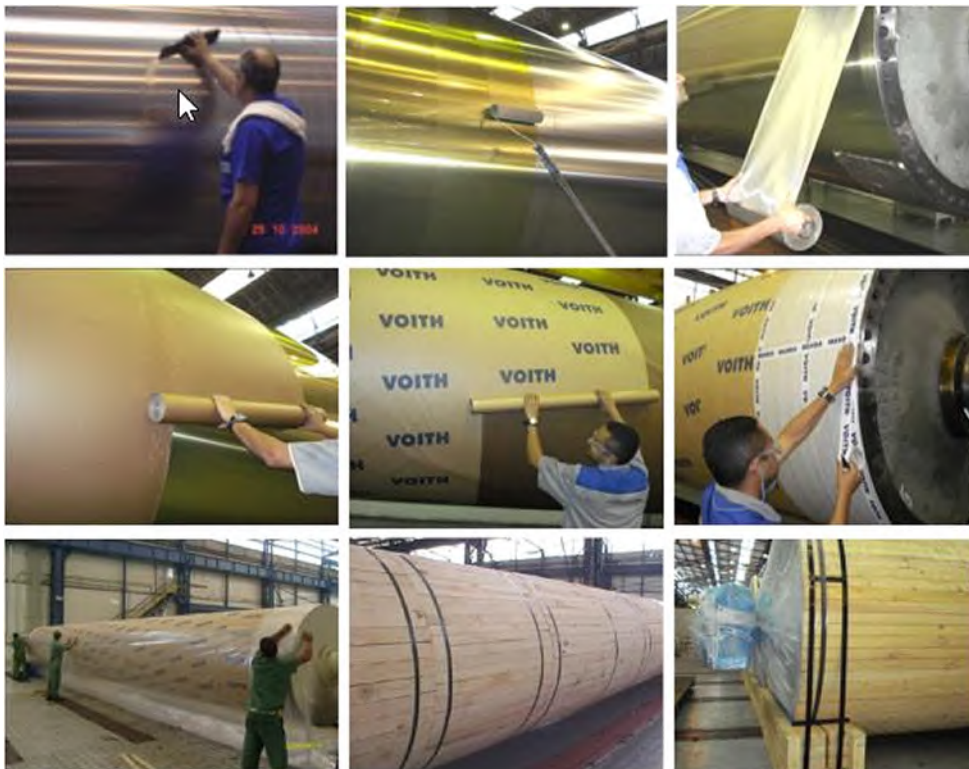
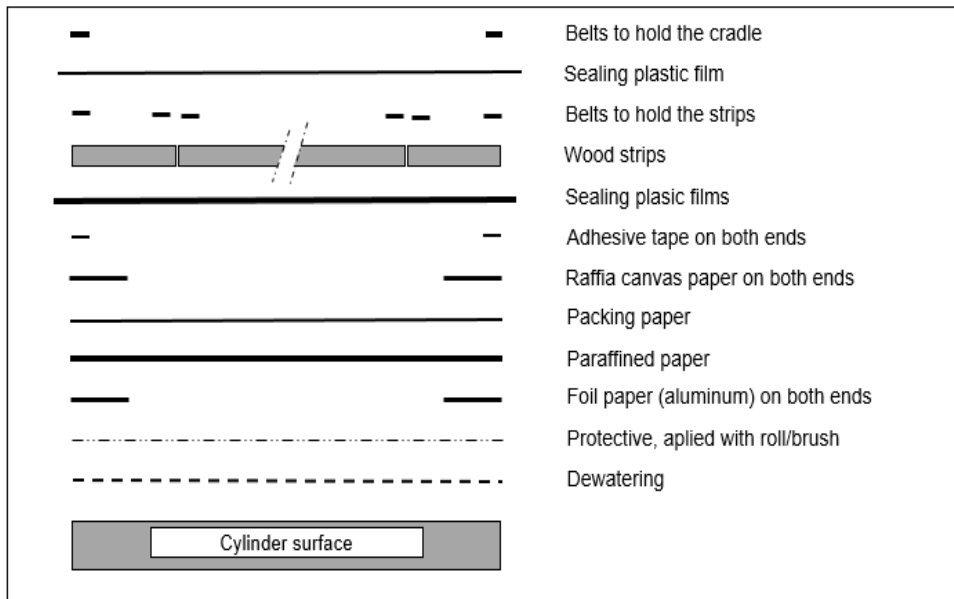
See VN 1576 - 2 (Part 2: Preservation and storage of rolls), Section 10.

10 Goods classes (GK)

See VN 1577-2 (Packaging standard for rolls), Section 10.

11 Packaging arrangement for drying cylinder

Condensed sketch



12 Packaging categories (VK)

See VN 1577-2 (Packaging standard for rolls), Section 9.1.

13 Packaging of uncoated drying cylinder

- Storage period < 6 months (for a short term)
- Land transportation

without bearings

with bearings



- Storage period > 6 months to 12 months (for a long term)
- For sea transportation, additionally packed



14 Packaging of coated drying cylinder

Packaging types are classified based on dryer length

a.) In wooden rack < 6 meters

b.) In steel rack > 6 m



- The packed dryers must not be lifted at the journals, this must be done with lifting harnesses around the cylinder body.
- The supports are delivered dismantled. To prevent damage, they must be packed well in a strong cardboard box and bubble wrap for shipping

15 Special notes

1. VN 1578 (internal transport of rolls) must be observed in the entire Voith Paper division and with external suppliers within the production site and on the construction site (during assembly or service).
2. When transporting uncoated drying cylinders with mounted bearings and bearing housings, a transport lock provided must be attached.

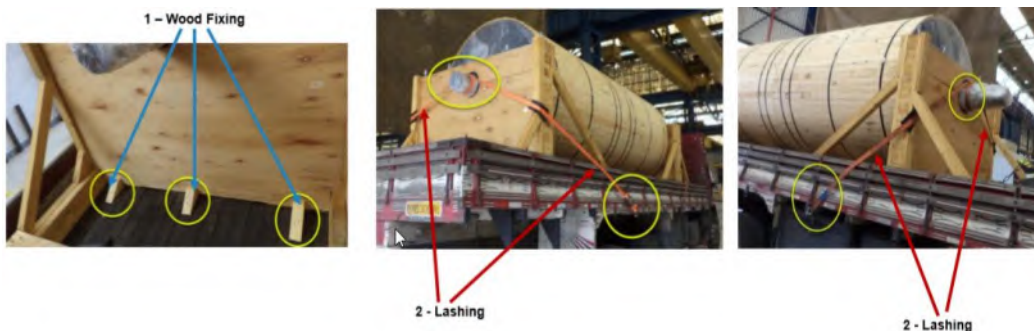


3. All transport units are designed for one-time use. Before any further use, it must be ensured that the condition enables safe transport. Damaged parts must be replaced. Only the drying cylinder may be transported with these transport units. If the transport units are reused, liability lies with the sender, unless otherwise specified in the contract. The material suitability of the transport units must comply with the standard see VN 1577-1 (Part 1 General Packaging Standard) Section 6.1.
4. Suitable measures must be employed to secure the load to prevent slippage on the truck, as well as during transportation by sea

Transportation by truck:

Item 1 Wooden fixators must be used on the cradles to prevent longitudinal slippage.

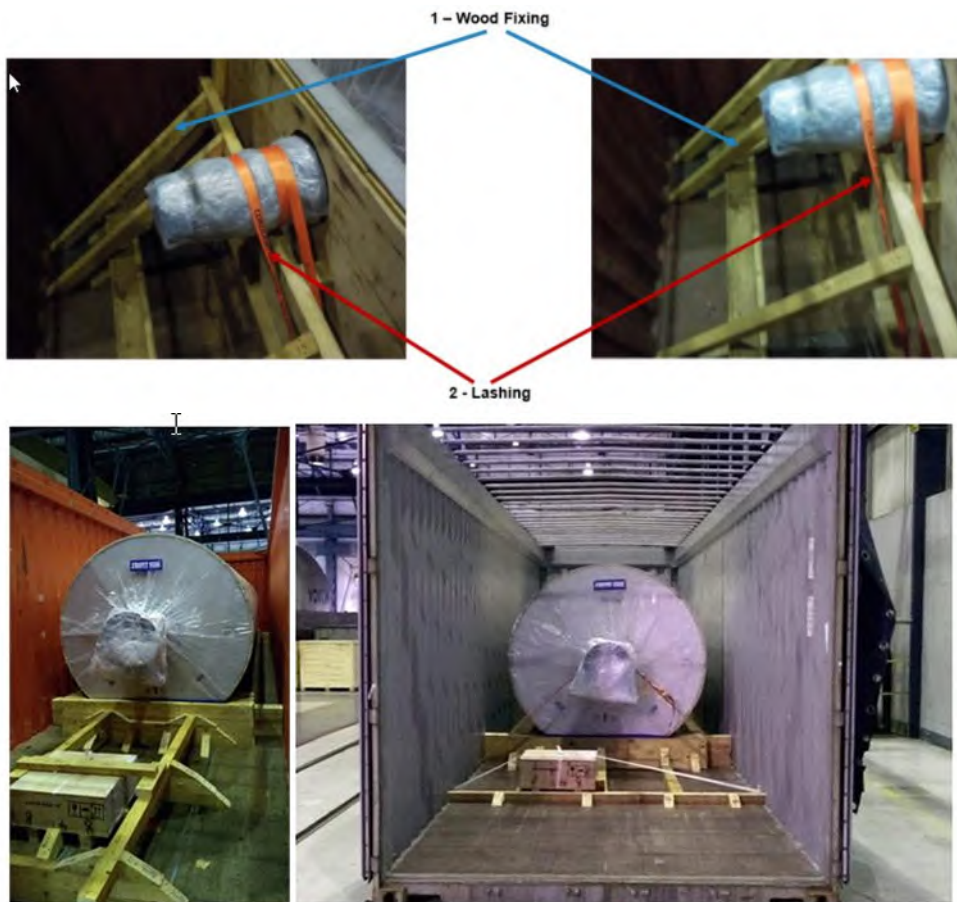
Item 2 Lashing straps must be used to prevent transverse slippage.



Transportation in container:

Item 1 On the inside of the container, the wooden supports are to be fixed with wood to prevent slipping.

Item 2 In the container, the drying cylinder is fixed with butt straps to prevent the dryer moving on the cradle



16 Unpacking

There are special recommendations for unpacking and cleaning drying cylinders.
The procedure involves the following steps:

1. Shaft journals:

- a) Remove the outer protection (wood, plastic, rubber, etc.)
- b) Remove the paint coat (applied corrosion protection) or wax (dry coat) by carefully rubbing with a blade from a synthetic material (such as plastic, textile fibers)
- c) Remove the residual paint or wax using a rag soaked in solvent (spirit, petroleum ether, etc.)

2. Outer skin:

- a) Remove the outer protection (wood, plastic, rubber, etc.)
- b) It is important to pay attention to the wooden slats fastened with metal straps: to prevent slats becoming jammed (or dropping down) between cylinder and covering hood before the metal straps are cut, the slats should be lashed using suitable ropes. Once the bands have been cut, the slats must be pulled out of the enclosure by hand, individually, one after the other, starting from the top.
- c) Manual removal of paper/plastic protection. Do not use doctors or other metal tools.
- d) Once the paper packaging has been removed, the rotating cylinder is heated up at the lowest possible steam pressure (~0.4 bar) until it feels warm to the touch. The paint coat then softens and can simply be removed from the slowly rotating surface using an unloaded doctor with bronze blades. Replace the blade as soon as it is full of deposits and clean them off regularly to ensure efficient function.
- e) Cleaning can be accelerated by applying light solvents to the surface (spirit, petroleum ether, etc.). Rags soaked in solvent can be useful for removing the residual protective layer. Please note that only approved chemicals are used. Protective clothing must be worn. Avoid damage and corrosion on the surface of the drying cylinders.

3. Remarks:

- a) Metal-coated cylinder surfaces have to be oil-free, grease-free and treated with caution to prevent mechanical contact that could cause the surface to become scratched.
- b) Keep the original packaging for as long as possible to prevent unwanted damage. The packaging should be removed, if necessary, only at the last moment. Comply with the safety requirements – use protection suitable for working with solvents and blades, pay attention to the areas with access authorization, observe and comply with the regulations and control instructions specifically valid in the cordoned-off storage areas, observe all country-specific and city-specific environmental directives before specifying the solvents to be used. Final monitoring of suitable disposal methods and sites.

17 Handling markings

See VN 1577-2 (Part 2: Packaging standard for rolls)

18 Means of transport

See the specifications in VN 1577-1 (General packaging standard), Section 14, for the means of transport.

19 Repairs to packages

See the specifications in VN 1577-1 (General packaging standard), Section 17, for the repairs to packages

20 Reuse and disposal of packaging

See the specifications in VN 1577-1 (General packaging standard), Section 18, for the reuse and disposal of packaging and/or packaging material

21 Specific packaging requirements

Any other specific packaging requirements for components and products shall be addressed and agreed as part of the project VQS. If anything is unclear, the relevant contact (e.g. in Purchasing) at Voith must be approached.

22 Normative references

Document	Title
GD 01/06	Health, Safety and Environmental Protection
VN 1576-1	Preservation and storage Part 1: General preservation and storage
VN 1576-2	Preservation and storage Part 2: Preservation and storage of rolls
VN 1577-1	Packaging standard Part 1: General packaging standard
VN 1577-2	Packaging standard Part 2: Packaging standard for rolls
VN 1578	Transportation of rolls (internal)
ISO 780	Packaging - Shipping packaging - Graphical symbols for handling and storage of packages
ISPM 15	Guidelines for regulating wood packaging material in international trade

23 Contact / Release

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