

Preservation and Packaging Part 04: Preservation, Packaging, storage, and transport from air systems for buildings-processes- and system/ hood

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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 of air system products 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. The requirements defined in this standard for air system products take priority over VN 1577-1. For generally applicable requirements, see Item 4.

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
WBS elements	WBS (work breakdown structure) – SAP term
ISPM	I nternational S tandard for P hytosanitary M easures for wood packaging in the international movement of goods

5 General requirements for the packaging

The products must always be fastened on pallets, wooden frames or beams. Loading onto a truck directly is not permitted. The goods must be capable of being unloaded by a forklift truck. Exceptions are to be agreed.

The stamps indicating the wood treatment in accordance with ISPM 15 must be visible on the wood parts and/or pallets – if required in the order. A certificate concerning wood treatment must be available upon request.



Figure: Example of an ISPM15 stamp.

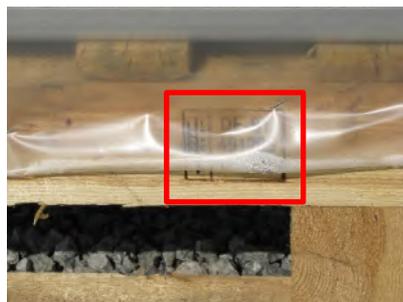


Figure: IPPC stamping on a pallet

The products must not protrude over the outer edges of the pallets, i.e. the pallets must always be larger than the largest dimensions of the products.



Figure: Packaging OK



Figure: Packaging not OK

Wrapping foil must not be used as protection (packaging), it can be used as lashing (fastening).

The products must not be lashed with steel straps. Alternatively, plastic straps can be used.

Exceptions must be agreed in consultation with Voith.

All parts must be secured against one another to prevent damage being caused by contact between the products and to prevent these parts slipping during transportation.

The deliveries must be sorted and packed in accordance with the assembly assignment (as per the order item). Exceptions, e.g. for assembly material, must be agreed and labeled.

If parts are not sufficiently stable for transport, temporary pipe branches, corner reinforcements or similar must be used for stiffening. The regulations concerning "Bundle packaging" must also be observed – see Item 12.

For the overall height (packaging and component), the height of the container or truck door opening must be checked. The maximum height is the clear opening height less 5 cm. Deviating dimensions must be agreed in consultation with Voith beforehand.

If the order states that the duct parts have to be covered with foil:

- Use PE foils, preferably transparent, at least 0.2 mm thick
- Fasten foil to the sides of the pallets - preferably with clamps (tacking) or shrink-wrapping
- Foil must be leak-tight to the top and side, i.e. protected against rainwater, drips, dust and dirt, air exchange downwards through the pallet planks is permissible.
- Sharp edges of duct parts must be padded towards the foil to prevent the foil from tearing
- Protection for inlet and outlet openings must be agreed as and when required.



Figure: Clean, rain and dust-proof covering with PE foil



Figure: "Tacking" the foil



Figure: Lining sharp edges

Reuse and disposal of packaging and/or packing material, see VN 1577-1.

Further requirements can be agreed as part of the order, on the drawing, or following additional consultation with Voith, and must be observed.

6 Instructions for transportation

Transport on a truck or rail freight carriage must be closed in order to prevent damage to the packaging and components. During transportation, the packaging must remain on the component up until the start of assembly. Exceptions are explicitly marked on the goods and/or packaging.

7 Special instructions for handling

All damage must be reported to Voith immediately on occurrence and documented with a picture.

For further requirements, see working instruction for transport drawing.

8 Preservation

The currently valid preservation regulations (VN 1576-1) and packing regulations (VN 1577-1) in particular must be observed. The products used for preservation must not contain any SVHC substances of the candidate list as specified under the REACH regulation and/or national regulations.

9 Loading onto container floors in reduced form

Loading on container floors in reduced form shall be employed for lightweight components, e.g. duct parts.

Other pallets must be executed in accordance with VN 1577-1.

- Standard pallet: 590 x 220cm with squared timber 10 x 10cm without wood surface
- Solid wood, rough-sawn, treated in accordance with ISPM 15 with stamping and certificate
- 4 longitudinal timbers 10 x 10cm
- 4 crosspieces 10 x 10cm
- 3 floor sliding guides 5 x 10cm
- Covering boards, 2cm thick, approx. 15cm wide, distance such that approx. 50% of the surface is free
- All items nailed, not bolted, apart from the first planks at each end of the pallet

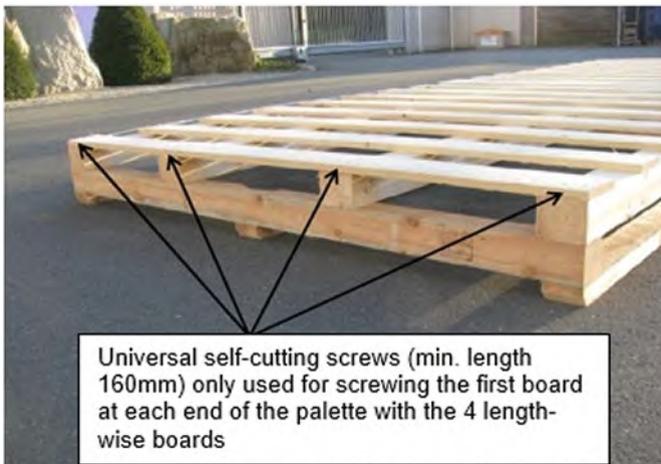
Smaller pallet sizes with a length of 390cm and 290cm and the same width are preferred.





Stamp for wood treatment according ISPM15 minimum 1x per front face

Lower edges chamfered ca. 3 cm



Universal self-cutting screws (min. length 160mm) only used for screwing the first board at each end of the pallet with the 4 lengthwise boards

10 Unpacking and on-site storage

For unpacking, see Item 7.
For on-site storage, see Annex 3

11 Packaging in bundles

Bundles are packaging and transport units that are packed only to the extent that multiple parts are attached in a secure manner suitable for transport, are made stackable and provided with attachment/lifting options for crane and floor conveyors.

Only those goods that absorb stacking pressure without additional support and which can neither bend nor dent and/or whose surfaces cannot be damaged by the handling operation – pressures or forklift tines – are allowed to be bundled. (e.g. with thin-walled material such as folded spiral-seam tubes).

Adequately rigid and stable packaging by the bundling must be guaranteed. If the use of textile tapes does not create adequate stability, wire or steel tapes with appropriate padding can be used to protect the components from damage. If necessary, bolted squared timber clamps or, for higher net weights, profile steel clamps with wooden inserts must be used as securing devices.

The clamps must be firmly closed so as to prevent the goods slipping out of the bundle, even if loaded at an oblique angle. This must be guaranteed even after multiple handling operations and prolonged periods of storage.

One bundle must be held together by at least three clamps. The squared timbers/steel profiles used must be rated for the expected loads. The lateral protrusion of the squared timbers/steel profiles (over the product width) for mounting tightening screws of adequate strength.

Nuts and heads of tightening screws must be shimmed with washers. Nuts must be secured to prevent slackening. To prevent the risk of injury, protruding screws must be shortened to the required length after tightening.

Any necessary intermediate layers must be made from weatherproof plywood. If necessary, marking surfaces or end boards must be clamped into the clamps.



Figure: Bundle packaging not OK
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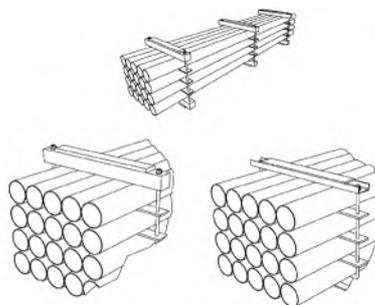


Figure: Clamps for securing

12 Annex

Table: Packaging and handling requirements for air technology products (definition of goods class and packaging category according VN 1577-1 point 8 & 10)

				Truck or rail freight(IPPC not mandatory, exceptions*)			Sea freight (IPPC wood fundamentally required, packages must be suitable for container stowage/transport)		
	Material	Goods class	Storage	Packaging category	Packaging category	Additions/special features/remarks	Packaging category	Packaging category	Additions/special features/remarks
Hoods	Panel parts, intermediate ceiling for exhaust air	GK 3	B	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil	Edge protection and intermediate layers with wooden boards, if sealing material is enclosed => Storage "A"	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	Edge protection and intermediate layers with wooden boards, if sealing material is enclosed => Storage "A"
	Lift gates	GK 4	A	VK 5, but without lining	Standard crate WITHOUT lining/planking	Use steel frame if applicable (max. 4 gates) if returns are possible	VK 5	Seaworthy crate with lining	
	Lifting gate accessory (e.g. Hilti, Würth, seals, light barriers, etc.)	GK 5	A	VK 3, without shrink-wrapping, but with foil	Pallets/wooden structures WITHOUT shrink-wrapping but with foil	Stock placement "A" due to sealing materials, electrical components, field units Max. pallet length 4m (weight!)	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	On the pallet, electrical components VK9 & galv. components such as angle brackets, roller trestle, etc. are to be executed as VK8 Max. pallet length 4m (weight!)
	Gates and doors (e.g. wire change gate, swing door, sliding gate, etc.)	GK 4	A	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	
	Structural steel	GK 1	C	Bundle packaging to VN 1577-4, Item 12	Bundle packaging to VN 1577-4, Item 12	Lashed suitable for forklift operations, felt/wood as intermediate layer to prevent slippage/damage, pallets can also be used if necessary see VN 1577-4 - Item 12	VK 2, but without shrink-wrapping	Wooden supports WITHOUT shrink-wrapping	Felt/wood as intermediate layer to prevent slippage/damage, pallets with foil can also be used if necessary (VK4b) see VN 1577-4 - Item 12
	Lift gate drives	GK 5	A	VK 3, without shrink-wrapping, but with foil	Pallets/wooden structures WITHOUT shrink-wrapping but with foil	Screwing drive to pallet	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	Screwing drive to pallet
	Mechan. accessories (e.g. blow-out boxes, hood railings, ascents)	GK 2	C	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	
	Hood design, lifting cover accessories	GK 3	B	VK 5, but without lining	Standard crate WITHOUT lining/planking		VK 5	Seaworthy crate with lining	
	Sprinkler system: fittings, pump, sprinkler heads, clips, seals	GK 5	A	VK 3, without shrink-wrapping, but with foil	Pallets/wooden structures WITHOUT shrink-wrapping but with foil		VK 5, but without lining	Standard crate WITHOUT lining/planking	
	Sprinkler system: piping	GK 1	A	Bundle packaging to VN 1577-4, Item 12	Bundle packaging to VN 1577-4, Item 12	Lashed suitable for forklift operations, felt/wood as intermediate layer to prevent slippage/damage, pallets can also be used if necessary Storage "A" such that the sprinkler system remains intact	VK 5, but without lining	Standard crate WITHOUT lining/planking	Storage "A" such that the sprinkler system remains intact

				Truck or rail freight(IPPC not mandatory, exceptions*)			Sea freight (IPPC wood fundamentally required, packages must be suitable for container stowage/transport)		
	Material	Goods class	Storage	Packaging category	Packaging category	Additions/special features/remarks	Packaging category	Packaging category	Additions/special features/remarks
Yankee hood	Hood (possibly multi-part), without actuators	GK 2	C	VK 0	Not packed	Break bulk with transport rack & throw-over tarpaulin, pallets with throw-over tarpaulin may also be possible depending on dimensions	VK 5	Seaworthy crate with lining	Pallets with foil (VK 4b) may also be possible depending on the dimensions of the parts
	Hood (possible multi-part), with actuators	GK 2	C	VK 0	Not packed	Break bulk with transport rack & throw-over tarpaulin, pallets with throw-over tarpaulin may also be possible depending on dimensions	VK 5	Seaworthy crate with lining	Pallets with foil (VK 4b) may also be possible depending on the dimensions of the parts
	Actuators for profiling	GK 5	A	VK 3, without shrink-wrapping, but with foil	Pallets/wooden structures WITHOUT shrink-wrapping but with foil		VK 5 WITH shrink-wrapping	Seaworthy crate with lining and shrink-wrapping	
	Transport device (e.g. pneumatic cylinder/electric drive with gear unit)	GK 5	A	VK 3, without shrink-wrapping, but with foil	Pallets/wooden structures WITHOUT shrink-wrapping but with foil		VK 5 WITH shrink-wrapping	Seaworthy crate with lining and shrink-wrapping	
Air system	Air ducts/pipes (no matter which material)	GK 1	C	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil	Felt/wood as intermediate layer to prevent slippage/damage, disposable, Euro or large pallets possible	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	Felt/wood as intermediate layer to prevent slippage/damage, simplified version of the previous "container floor"
	Brackets, steel parts, suspensions for ducts	GK 1	C	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil	Felt/wood as intermediate layer to prevent slippage/damage, disposable, Euro or large pallets possible	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	Felt/wood as intermediate layer to prevent slippage/damage
	Fans (with & without motor), large	GK 3	B	VK 2, but without shrink-wrapping	Wooden supports WITHOUT shrink-wrapping	on suitable (min. 80x80mm) longitudinally/transversely bolted squared timber for forklift trucks / without foil	VK 2, but without shrink-wrapping	Wooden supports WITHOUT shrink-wrapping	on suitable (min. 80x80mm) longitudinally/transversely bolted squared timber (beveled) for forklift trucks / with foil
	Fans (with & without motor), small	GK 3	B	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	
	Air heater/heat recovery (no matter which material)	GK 3	B	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil	Cover uppermost layer with plywood	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	Cover uppermost layer with plywood (nitrogen charge irrelevant)
	Silencer (large)	GK 1	C	VK 2, but without shrink-wrapping	Wooden supports WITHOUT shrink-wrapping	on suitable (min. 80x80mm) longitudinally/transversely bolted squared timber for forklift trucks / without foil	VK 2, but without shrink-wrapping	Wooden supports WITHOUT shrink-wrapping	on suitable (min. 80x80mm) longitudinally/transversely bolted squared timber (beveled) for forklift trucks / with foil
	Silencer (small)	GK 1	C	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	

				Truck or rail freight(IPPC not mandatory, exceptions*)			Sea freight (IPPC wood fundamentally required, packages must be suitable for container stowage/transport)		
	Material	Goods class	Storage	Packaging category	Packaging category	Additions/special features/remarks	Packaging category	Packaging category	Additions/special features/remarks
	Filter housing & filter (e.g. pocket filter)	GK 3	B	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	
	Chemical filter	GK 3	B	VK 1	Cardboard box packaging	Special packaging options to be agreed in consultation with the supplier	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	Special packaging options to be agreed in consultation with the supplier
	Drop separator housing, lamella, nozzles (spraying equipment)	GK 3	B	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	
	Nozzles general (e.g. for showers)	GK 3	B	VK 1	Cardboard box packaging	Cardboard box on pallet if necessary	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	Nozzles in cardboard boxes on pallet
	Air flap without actuator	GK 3	B	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	
	Air flap with actuator mounted	GK 5	A	VK 3, without shrink-wrapping, but with foil	Pallets/wooden structures WITHOUT shrink-wrapping but with foil		VK 5 WITH shrink-wrapping	Seaworthy crate with lining and shrink-wrapping	
	Expansion joints	GK 3	B	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 5, but without lining	Standard crate WITHOUT lining/planking	
	Gas train & gas train	GK 5	A	VK 3, without shrink-wrapping, but with foil	Pallets/wooden structures WITHOUT shrink-wrapping but with foil		VK 5 WITH shrink-wrapping	Seaworthy crate with lining and shrink-wrapping	
	Tank (e.g. combustion chamber, scrubber)	GK 2	C	VK 2, but without shrink-wrapping	Wooden supports WITHOUT shrink-wrapping	on suitable (min. 80x80mm) longitudinally/transversely bolted squared timber for forklift trucks / without foil	VK 2, but without shrink-wrapping	Wooden supports WITHOUT shrink-wrapping	on suitable (min. 80x80mm) longitudinally/transversely bolted squared timber (beveled) for forklift trucks, also pallets/with foil if necessary
	Building fresh air & waste air units (filter not integrated)	GK 3	B	VK 2, but without shrink-wrapping	Wooden supports WITHOUT shrink-wrapping	On squared timber for forklift and for crane/flange faces protected/without foil	VK 2, but without shrink-wrapping	Wooden supports WITHOUT shrink-wrapping	and beveled squared timber for forklift and for crane/flange faces protected/with foil
	Weather protection grating	GK 1	C	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	

				Truck or rail freight(IPPC not mandatory, exceptions*)			Sea freight (IPPC wood fundamentally required, packages must be suitable for container stowage/transport)		
	Material	Goods class	Storage	Packaging category	Packaging category	Additions/special features/remarks	Packaging category	Packaging category	Additions/special features/remarks
PWW or cold water system	Cooler	GK 6	Statutory requirements to be observed	VK 0	Not packed	Comparison with manufacturer's specifications, different variants possible/charged with coolant if necessary => declare as hazardous goods if necessary	VK 5 WITH shrink-wrapping	Seaworthy crate with lining and shrink-wrapping	declare as hazardous goods if necessary (alternative: charge with nitrogen and sent coolant separately in special tanks), possibly in special packaging
	Brackets, steel parts, suspensions for piping	GK 1	C	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil	Felt/wood as intermediate layer to prevent slippage/damage	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	Felt/wood as intermediate layer to prevent slippage/damage
	Heat exchanger (e.g. steam exchanger)	GK 3	B	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping and WITHOUT foil		VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	
	Actuators, flap drives (e.g. Belimo)	GK 5	A	VK 1	Cardboard box packaging	VK 4b if necessary	VK 5 WITH shrink-wrapping	Seaworthy crate with lining and shrink-wrapping	
Miscellaneous	Insulating material (e.g. Armaflex, adhesive, plate covering, rock wool)	GK 3	B	VK 1	Cardboard box packaging	If necessary on pallet, without foil, declare as hazardous goods if necessary	VK 3, but without shrink-wrapping	Pallets/wooden structures WITHOUT shrink-wrapping but WITH foil	Declare as hazardous goods if necessary, special packaging if necessary

The general requirements of Voith Packaging Standards VN 1577-4 (Packaging Standards - Part 4: Packaging, storage and preservation of air system products) (primary requirements for air system products) and VN 1577-1 (Packaging standard - Part 1: General packaging standard) must be satisfied. If anything is unclear, consult Voith Paper. Air freight is subject to a separate inquiry at Voith.

* Exceptions: Certain countries in the EU area, e.g. Portugal, transport to Russia, etc./customer i

13 Normative references

Document	Title
VN 1576-1	Part 1: General preservation and storage
VN 1577-1	Part 1: General packaging standard, packaging standard
EN 13698-1	Product specification for pallets Part 1: Production of 800 mm x 1200 mm flat timber pallets
ISO 780	Packaging - Shipping packaging - Graphical symbols for handling and storage of packages
ISPM 15	Guidelines for regulating wood packaging material in international trade

14 Contact / Release

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