

SHELF LIFE

WEIDMANN STORAGE AND PROCESSING RECOMMENDATION

Materials used in the manufacturing of electrical insulation products, such as board, paper and components made from cellulosic fibers, are highly hygroscopic. Changing climate conditions and unsuitable packaging and storage conditions will result in a continuous humidity exchange with the ambient air. This leads to adverse consequences such as warping (swelling and shrinking) and delamination, especially for glued and laminated products. Therefore, special attention is required during storage and processing to prevent serious damage. Incorrect storage and processing can significantly reduce the products shelf life, and in the worst case scenario, wrong storage can ultimately lead to transformer failure.

Protect against:

- Contamination (e.g. dirt, metal particles and oil drops)
- Water (e.g. rain, dew and fire hydrant)
- Moisture (e.g. air humidity)

Avoid:

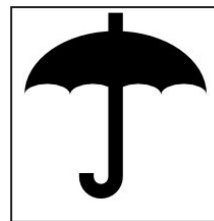
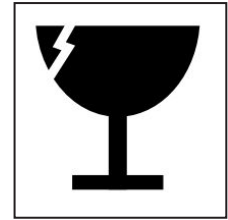
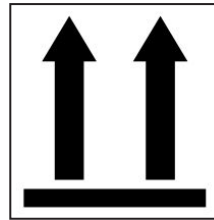
- Air circulation (e.g. do not store near open doors or open windows, air conditioning vents, fans)
- Direct sunlight

Store:

- In a cool, dry and darkened environment
- In original packing
- Away from radiators or underneath overhead heaters

Removing material from the warehouse:

- Open original packaging with care, remove required amount and immediately re-package remaining material carefully (leaving the desiccant (if present) in the package)
- Unpack all types of components and kits only when required



Material processing:

It is inevitable that the insulation material is exposed to ambient conditions during processing. Therefore it is important to comply with these recommended prescriptions (e.g. protect against contamination, moisture, air circulation etc.).

Use appropriate packaging and protection material, for example:

- Wooden or plastic boxes
- Paper
- Polyethylene film
- Stretch film
- Multilayer film
- Desiccant inside the packaging material

Notes for packaging:

- Polyethylene film slows down water absorption, two film layers protect better than one layer
- Desiccant slows down/prevents water absorption providing it is not saturated
- Oil impregnation does not reduce the amount of water absorbed, however it disproportionately slows down the dimensional change
- Sealed film protection prevents water absorption better than taped film protection
- Waxing of surface edges of TX laminated pressboard components is recommended to inhibit moisture absorption

In general, the recommended shelf life (FCA Origin*) for Weidmann products is **24 months**. For exceptions, please refer to the below table.

Cellulose based	Product group	Product	Recommended shelf life (FCA Origin*, in months) if stored and processed according Weidmann recommendations
Transformerboard	Laminated	Transformerboard T4 laminated (Polyester & Casein)	12
Papers	Coated	Diamond dotted paper, engineered papers, laminated paper, coated crepe paper	12
Components	Cylinders & cylinder sectors	Cylinder all types open, cylinder blanks	12
		Cylinders all types closed, cylinders all types (open & closed) oiled	2
	Winding package	Oiled	2
	Formed components	Edge protection ring, angle ring, angle ring sector with snout, cap, cap sector with snout, U-ring, U-ring sector with snout, flange tube, tube, crepe paper tube	12
	Shielding elements	Metallized shield glued, shield ring metallized, center lead entrance	2
		Metallized shield flexible	6
	Washers	Washer with blocks	12
	Fixation elements	Angle rail laminated, clamp laminated, perforated support strip, round rod	12
		Threaded rod, nut	6
	End rings	Open and closed rounded, open and closed wound, open rounded layered	12
		Open and closed milled, vertically and horizontally grooved	6
	Lead exit systems	W800/W1000 lead exit, modular lead exit, other lead exit	12
		Barrierboard, Linkboard, Faltenbalg	6
Aramid based	Product group	Product	Recommended shelf life (FCA Origin*, in months) if stored and processed according Weidmann recommendations
Board		Nomex® pressboard	48
Papers	Uncoated	Nomex® insulation paper, crepe paper	48
	Coated	Nomex® diamond dotted paper	12
Components	Formed components	Nomex® angle ring, cap, U-channel, angle rail, cylinder	12
	Glued components	Nomex® crepe tube	12
	Spacing elements	Nomex® strip, spacer, ladder, thermoflow	48
	Washers	Nomex® washer with blocks	48

* Weidmann plant/warehouse-specific goods issue date

Weidmann strive to deliver the highest quality products and offer the best customer service at all times. Optimal product use requires strict adherence to storage, processing and shelf life recommendations.

If you have any questions with respect to these recommendations, please contact Weidmann.