KLIMA HIGH PERFORMANCE WATER-BASED COATINGS FOR EXTERIORS-ULTRA LOW VOC'S
MAINTENANCE PROCEDURES WITH TN030 & TN090 : KLIMA AQUATECH

1) Simple "maintenance" is needed, when the film quality is still good and no cracks appear on the film substrate. It is necessary to carry out a cleaning operation before starting the maintenance cycle.

<table>
<thead>
<tr>
<th>SUBSTRATE:</th>
<th>Windows, chairs, railing, decks, fencing, and doors for outdoor in various wood species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of cycle</td>
<td>Maintenance: Transparent or pigmented - closed grain - matte finish - Aquatech cycle</td>
</tr>
<tr>
<td>Operation</td>
<td>Products</td>
</tr>
<tr>
<td>Cleaning</td>
<td></td>
</tr>
<tr>
<td>Topcoat</td>
<td>TN030/water</td>
</tr>
</tbody>
</table>

2) "Partial "recoating" is needed when the film overall quality is still good but not perfect and some cracks appear on the film substrate. In this case a cleaning operation is necessary before starting the coating cycle, followed by a light sanding.

<table>
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<tr>
<td>Definition of cycle</td>
<td>Partial recoating: Transparent - closed grain - matte finish - Aquatech cycle</td>
</tr>
<tr>
<td>Operation</td>
<td>Products</td>
</tr>
<tr>
<td>Cleaning</td>
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<tr>
<td>Sanding</td>
<td>Paper 320 grit</td>
</tr>
<tr>
<td>Topcoat</td>
<td>TN090/water</td>
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</tbody>
</table>

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<td>Partial recoating: Pigmented White - closed grain - matte finish - Aquatech cycle</td>
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<td>Operation</td>
<td>Products</td>
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<tr>
<td>Cleaning</td>
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<tr>
<td>Sanding</td>
<td>Paper 320 grit</td>
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<tr>
<td>Topcoat</td>
<td>PN6 color/water</td>
</tr>
</tbody>
</table>
3) Total recoating/repair when needed. When the film presents very clear signs of degradation on wide parts of the substrate. In this case the film must be removed by sanding as much as possible before starting a new coating cycle.

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
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<td>Recoating with: Transparent - closed grain - matte finish - Aquatech cycle</td>
</tr>
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<td>Operation</td>
<td>Products</td>
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<tr>
<td>Sanding</td>
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<tr>
<td>Sanding</td>
<td></td>
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<tr>
<td>Impregnation</td>
<td>PN 3 series/water</td>
</tr>
<tr>
<td>Drying</td>
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<tr>
<td>Topcoat</td>
<td>TN 090/water</td>
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<tr>
<td>Drying</td>
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<td>Topcoat</td>
<td>TN 090/water</td>
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<tr>
<td>Drying</td>
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</tr>
</tbody>
</table>

Remark: for more details about individual products please consult our Technical Data Sheets
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: HTM5A273

DESCRIPTION: KLIMA Superclear Ultra-Non-Yellowing Nanotechnology External Coating
Water based clear topcoat, 30 gloss, excellent clarity, filling power, weathering resistance.

PRODUCT PREPARATION: HTM5A273   KLIMA WB NANO-TECH CLEAR SATIN
Water  Thinner
100 parts by weight or volume  5-6 % by weight or volume

USES: Two coats. To be used as a self-sealer or final coat over tinted impregnator or colors. Not to be used as a clear finish over natural wood. For outdoor use.

APPLICATION SYSTEM: Airless spray, Airmix spray, Electrostatic spray, robot spray, airless vertical spray, gravity gun, brush

FILM THICKNESS: Total film thickness to be applied is 350-400 grams or 14-16 wet mils in 2 or 3 coats, if necessary

GENERAL PROPERTIES:
Specific Gravity, gr/cc: 1.010 +/- 0.03
Viscosity as supplied (Brookfield Aspo n°4 vel 2.5): 35,000 +/- 5000 cps
Solids, % by weight: 38 +/- 2
Thinner: Water
% of dilution: 5-6% depending upon equipment

DRYING TIME:
Air Dry with ventilation, dry to handle:
Room temperature drying @18-22°C, 64-72°F: 4 hours
Stackable after room temperature drying: 24 hours with spacers
Hot air stages tunnel drying (20-40-60°C) (68-104-140°F) complete drying: 2 hours
Stackable after jet hot air drying: 8 hours with spacers

(Typing times can vary according to temperature, ventilation and relative humidity)

TYPICAL SYSTEMS:
Substrate: Various Woods
Any impregnator color made with bases PT410, TN30, and TN340 and tinted with PZ4 or PZ5 colors
Drying: Topcoat HTM5A273 2-3 coats

WARNINGS: In a coating process with professional products:
- besides the product quality, the final results also depend on numerous other variables, such as environmental conditions; homogeneity in the quality of substrate; the constancy of the application cycle; the plants performance; the proper use of the products, etc.
- in the process of industrial coating a certain waste product is to be considered normal and therefore not attributable to product quality
- the final color is influenced by the preparation of the substrate and the conditions of application; for this reason it is essential to check in advance the result in terms of final use.

CONTINUED ON NEXT PAGE...
**PRODUCT SERIES:** KLIMA SERIES  
**PRODUCT CODE:** HTM5A273, page 2  
**DESCRIPTION:** KLIMA Superclear Ultra-Non-Yellowing Nanotechnology External Coating  

**WARNINGS:**
Our company cannot ensure the control of the coating process carried out by the user. We cannot, therefore, take on any responsibility for the final result achieved through the use of our products. On the other hand, we guarantee the consistency of the chemical and physical characteristics of the product indicated in the relevant TDS, pledging to replace if it does not correspond to the declared features.

**PRODUCT PROPERTIES:**
Data on the chemical and physical characteristics of the product are recorded at 20°C, 68°F and 70% relative humidity

For test results, the optimum conditions of application are:
- Ambient temperature between 18 and 22°C, 64-72°F
- Ambient relative humidity between 65 and 70%
- Substrate humidity between 8 and 14%

The conditions to be observed scrupulously are:
- Water-based products are particularly sensitive to storage conditions: temperatures below 5°C, 41°F and above 35°C, 95°F, may affect the product characteristics, making it unusable. For this reason, a water-based product should be stored indoors at temperatures not below 5°C, 41°F and not above 35°C, 95°F, in a properly ventilated area, not exposed to solar radiation.
- Always shake the products before use
- Before use, always shake well the product mixed with any other components such as catalysts, accelerators, and thinners.
- The application must not take place at a temperature lower than 15°C, 59°F or above 35°C, 95°F
- The drying should not take place at a temperature below 15°C, 59°F
- The ambient relative humidity during drying should be between 50% and 70%
- To decant paints, exclusively use containers made of suitable material, such as polyethylene and stainless steel.
- After use, we recommend that you always close the can carefully
- The end result of the coating cycle is the sole responsibility of the user, who must make sure that the product matches their needs and that environmental conditions, application, or media specifications, do not require substantial changes of use.

It is the user's responsibility to:
- Adhere to the conditions indicated above
- Comply with the rules of hygiene and safety during product application, according to the descriptions give in the safety data sheets.
- Keep from freezing

**SHLEF LIFE:** Twelve months from delivery date

**STORAGE**  
Store at temperatures above 7°C, 45°F

**DATE OF ISSUE:** 06-15

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**EVERY REASONABLE PRECAUTION IS TAKEN IN THE MANUFACTURE OF OUR PRODUCTS TO INSURE THAT THEY COMPLY WITH OUR STANDARDS. INFORMATION GIVEN IS CORRECT TO THE BEST OF OUR KNOWLEDGE. ANY SUGGESTIONS MADE BY US COVERING THE USE OF OUR PRODUCTS ARE BASED ON EXPERIENCE AND/OR TESTS BELIEVED TO BE RELIABLE. HOWEVER, BECAUSE THE USE OF ANY PRODUCT OF OUR MANUFACTURE IS COMPLETELY BEYOND OUR CONTROL, INCLUDING FOR EXAMPLE, THE METHOD AND CONDITIONS OF APPLICATION, NO GUARANTEE OR WARRANTY, EX-SPRESSED OR IMPLIED, IS MADE. MANUFACTURER'S MAXIMUM LIABILITY SHALL BE TO REPLACE SUCH QUANTITY OF PRODUCT DETERMINED BY OUR LABORATORY TO BE DEFECTIVE. USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR HIS INTENDED USE AND ASSUME ALL RISK AND LIABILITY IN CONNECTION THEREWITH.**
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: PN 0/6 - TN0/600

DESCRIPTION: Klima Wax with special no slip waxes
Acrylic resin impregnator in water dispersion, enriched with special, non-slip protective waxes, specific for staining and protection of wood.

USES: Klima Wax line of products has been specifically formulated to protect outdoor wood items, including gazebos, arbors, fences, benches, decks, and sidings.

APPLICATION SYSTEM: Brush.
It is advisable to apply two to three coats by brush depending upon the degree of staining and protection desired. Raw wood humidity must be below 18%.

400-600 sq ft/gallon depending on wood preparations and species

QUANTITY(grsq mt): Two or three

COATS: Specific Gravity, gr/cc 1.025+/-0.02
Viscosity at application (Zahn #2) 16+/-2

GENERAL PROPERTIES: At 70°F with ventilation, dry to handle: 30 minutes
Time between coats 2-4 hours
(Drying times vary according to temperature, ventilation and relative humidity)

Before using coated items, it is advisable to wait 48 hours

COATING CYCLES:
Cycle 1
PN0/Series Brush application
Drying time 2-4 hours room temperature

Cycle 2
PN0/Series Brush application
Drying time 2-4 hours room temperature
PN0/Series Brush application
Drying time 4-6 hours room temperature
TN090 Brush application

TN 0/600 Clear
PN 0/61 Blonde Walnut
PN 0/62 Fir
PN 0/63 Teak
PN 0/64 Antique Walnut
PN 0/65 Douglas
PN 0/66 Mahogany

AVAILABLE COLORS: It is possible to obtain custom colors mixing the clear impregnator TN0/600 with the pigmented pastes of the PZ400/series

CONTINUED ON NEXT PAGE...
PRODUCT SERIES:  KLIMA SERIES

PRODUCT CODE:  PN 0/6 - TN0/600, page 2

FEATURES:  Do not use below 50°F or in very high humidity. Klima Wax impregnating finishes series offer top-level protection against weathering environments. They deeply penetrate into wood fibers, protecting it from well-known bacterial enemies of wood: fungi, molds, and parasites. The special, non-slip waxes employed provide the coating film with a strong water-repellent power, combined with special iron oxide pigments within the formulation. The waxes and stains also protect wood from being damaged by ultra-violet rays.

WARNINGS:  KEEP FROM FREEZING

SHELF LIFE:  Six months from delivery date

STORAGE:  Store at temperatures above 5°C, 45°

DATE OF ISSUE:  3-13
**PRODUCT SERIES:**  KLIMA HARDWOOD SERIES  
**PRODUCT CODE:**  PN33/COLOR - see page #8 for list of colors  
**PRODUCT NAME:**  Klima Water Based Colored Impregnator for Hardwoods  
**DESCRIPTION:**  Impregnator based on synthetic mono-component resins in water dispersion, specific for coloring and protection of tannin-rich woods.  

**USES:**  Outdoor/indoor wood items, application on raw wood  

**APPLICATION SYSTEM:**  In order to reduce swelling of wood surface due to contact with water-based products, it is advisable to sand raw wood before application (150-180 sandpaper). Wood surface must be free of dust and from any sap, oil, or resin traces. Raw wood humidity must be below 18%  

**QUANTITY(grsq mt):**  10-12  
**COATS:**  One  

**GENERAL PROPERTIES:**  
- Specific Gravity, gr/cc: 1.010+/-0.02  
- Viscosity as supplied (Zahn #2): 14+/- 2 sec  
- Solids, by weight: 11+/-2  
- May be thinned with water or TZ08: 0-5%  

**DRYING TIME:**  
- At 70°F with good ventilation, dry to handle: 30 minutes  
- Sandable, with Scotchbrite or sponge: 1-4 hours  

(Drying times vary according to temperature, ventilation and relative humidity)  
Minimum temperature during application and drying must be above 60°F  

**COATING CYCLES:**  

| Cycle 1 - High Performance - Thixotropic Top Coat |  
| --- | --- | 
| **Substrate:** | Hardwood |  
| **Impregnator:** | 1 coat PN 33/color - drying time 1-4 hours |  
| **Sealer:** | 1 coat TN40 - drying time 2-4 hours |  
| **Top Coat:** | 1 coat TN931 |  

| Cycle 2 - High Performance - Thixotropic Topcoat |  
| --- | --- | 
| **Substrate:** | Hardwood |  
| **Impregnator:** | 1 coat PN33/color - drying time 1-4 hours |  
| **Top Coat as self sealing 1st coat:** | 1 coat TN931 |  
| **Top Coat as self-sealing 2nd coat:** | 1 coat TN931 |  

It is possible to obtain custom colors mixing the PZ4/color pastes (PZ402 yellow, PZ406 red, PZ409 black) with the TN340  

CONTINUED ON NEXT PAGE...
PN33 Color does not form a film, thus it doesn’t peel. It penetrates deeply into wood fibers, protecting wood from the destructive action of fungi.

Special iron-oxide-based pigments used in the formulation protect the wood from the degrading action of UV rays.

Available Colors:
- PN3011 Fir
- PN3019 Myrtle
- PN310 Teak
- PN320 Lt Walnut
- PN330 Dk Walnut
- PN332 Chestnut
- PN333 Cherry
- PN338 Walnut
- PN340 Antique Walnut
- PN350 Douglas
- PN360 Mahogany
- PN370 Green Wood

Warnings:
- KEEP FROM FREEZING!

Shelf Life:
One year from date of manufacture

Storage:
Store at room temperature
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: PN410 for hard and soft woods

DESCRIPTION: KLIMA WHITE IMPREGNATOR WITH HIGH SOLID CONTENT

USES: Expressly developed as initial coat for white or pastel external use

APPLICATION SYSTEM: Brush or spray

COATS: One

GENERAL PROPERTIES:
- Specific Gravity, gr/cc: 1.100 +/- .02
- Viscosity (Zahn #2): 12 +/- 2
- Solids, by weight: 38 +/- 2

DRYING TIME:
- Dry to touch: 1 hour
- Hard Dry: 1-2 hours

(Drying times vary according to temperature, ventilation and relative humidity)

COATING CYCLES:
**Cycle 1 - High Quality with Thixotropic Topcoat**

<table>
<thead>
<tr>
<th>Wood</th>
<th>Soft woods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impregnatior</td>
<td>1 coat of PN410</td>
</tr>
<tr>
<td>Topcoat</td>
<td>1 coat of PN6B - 8 mils</td>
</tr>
<tr>
<td>Sanding</td>
<td>Topcoat 1 coat of PN6B - 10 mils</td>
</tr>
</tbody>
</table>

The cycle above is certified CATAS, with CATAS certification Quality Award 03/02 compliant with ENV 927-2/2000 Performance specification and with all the other requirements included in technical specification of "Catas Quality Awards - coating system for exterior wood"

SHELF LIFE: Six months from delivery date

STORAGE: Store at temperatures between 40°F and 86°F

DATE OF ISSUANCE: 03-13
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: PN4B

DESCRIPTION: KLIMA AQUATECH PIGMENTED THIXOTROPIC SEALER - WHITE
This product is a thixotropic filling sealer based on water-based one-compone-
nt acrylic resins in water dispersion for wood protection. Allows applica-
tion of high product thickness in only one-coat, without risk of sagging.

PRODUCT PREPARATION: PN4B WB Exterior Primer 100 parts by weight or volume
Water Thinner 30 parts by weight or volume

USES: For outdoor use. Suitable for hardwoods and softwoods.

APPLICATION SYSTEM: Brush, spray (air, airmix, airless). If airless spray we recommend diluting 3-5% to help air release during film-forming. For best results use Kremlin 30:1 pump with Aurmix 600 fluid lbs, 35-40 static atomizing air 06134/06154

QUANTITY (grsq mt): 8-10 mils wet film

COATS: One or two depending on desired build

GENERAL PROPERTIES:
Specific Gravity, gr/cc 1.20+/-0.02
Viscosity (Brookfield aspd 4 vel.2) 25,000 cps
Solids, % by weight: 51 +/-2

DRYING TIME:
Air drying (at room temperature with good ventilation)
Dry to touch: 20 minutes
Dry to sand: 2 hours
Dry to handle: 12-16 hours
Tunnel (35-40°C, 95-104°F) 90 minutes
(Drying times will vary according to temperature, ventilation and relative humidity)

COATING CYCLES: Cycle 1 - Pigmented Coating Cycle with Thixotropic Topcoat - White
Substrate: Non-bleeding softwoods and hardwoods
Wood Preservative: 1 coat of PN410, TN340 or TN30
Sealer 1 coat of PN4B reduced with water -4 hours before sanding
Sanding Sand using 320 grit stearated paper. Avoid high pressure or reduce speed on powered sanding equipment to avoid overheating the waterbase product and loading up sandpaper.
Topcoat 1 coat of PN6B reduced with water -4 hours drying

PRODUCT PROPERTIES: PN 4B sealer is characterized by very good hiding and filling capacity. Highly flexible following dimen-
sional moves of the wood without flaking off. Easy maintenance.

MAINTENANCE: Finished items should be lightly sanded with 240 or 320 grit and recoated or topcoated with 1 or 2 coats of PN6B.

WARNINGS: KEEP FROM FREEZING!

SHELF LIFE: Six months from delivery date

STORAGE: Store at temperatures between 5°C (41°F) and 30°C (86°F)

DATE OF ISSUANCE: 03-13

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PRODUCT SERIES: KLIMA SERIES
PRODUCT CODE: PN6B
DESCRIPTION: KLIMA WHITE THIXOTROPIC TOPCOAT
This product is a thixotropic topcoat based on acrylic resins in water dispersion for wood protection. Allows application of high film build without risk of running or sagging.
USES: For outdoor use, pre-coated with KLIMA AQUATECH series impregnating stains and sealers.
PRODUCT PREPARATION:
- PN6B: KLIMA W/B White Matte Finish
- Water
- Thinner
APPLICATION SYSTEM: For best results use Kremlin 30:1 pump with Airmix 600 fluid lbs, 35-40 static atomizing air 06134/06154 tips or use conventional, pressure pot, cup gun or apply by roller or brush
QUANTITY (grsq mt): 100 parts by weight or volume
COATS: One or two depending upon desired build; can be used as a self-sealer
GENERAL PROPERTIES:
- Specific Gravity, gr/cc: 1.30+/-.02
- Viscosity (Brookfield aspo 4 vel.2): 30,000-32000 cps
- Solids, % by weight: 45 +/-2
- Gloss: 30+/2
- Air drying
  - Dry to touch: 40 minutes
  - Dry to sand: 1 hour
  - Full dried: 6-8 hours
  (Drying times will vary according to temperature, ventilation and relative humidity)
COATING CYCLES:
Cycle 1 - Pigmented Coating Cycle with Thixotropic Topcoat - White
- Substrate: Non-bleeding soft and hardwoods
- Wood Preservative: 1 coat of PN410
- Sealer: 1 coat of PN4B or PN6B - drying time 4 hours
- Topcoat: 1 coat of PN6B

The cycle above is certified CATAS, with CATAS certification Quality Award 03/02 compliant with ENV 927-2/2000 Performance specification and with all the other requirements included in technical specification of "Catas Quality Awards - coating system for exterior wood"
PRODUCT PROPERTIES:
PN 6B sealer is characterized by very good hiding and filling. Improves protection against weathering and UV deterioration. Soft to the touch, highly flexible, will follow dimensional movement of wood without cracking or flaking off, so as to allow easy maintenance.
MAINTENANCE:
Previously finished items should be lightly sanded w/280 or 320 grit and recoated.
WARNINGS:
KEEP FROM FREEZING!
SHELF LIFE:
Six months from delivery date
STORAGE:
Store at temperatures between 5°C (41°F) and 30° C (86°F)
DATE OF ISSUANCE: 03-13
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: PZ400 series

DESCRIPTION: Pigmented Pastes for Water Based Impregnators

USES: To tint and color water based impregnators for outdoor use

GENERAL PROPERTIES:

AVAILABLE COLORS:

<table>
<thead>
<tr>
<th>Code</th>
<th>Color</th>
<th>Specific Gravity, gr/cc +/- 0.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>PZ402</td>
<td>Yellow Oxide</td>
<td>1.150</td>
</tr>
<tr>
<td>PZ404</td>
<td>Brown</td>
<td>1.360</td>
</tr>
<tr>
<td>PZ405</td>
<td>Bright Red</td>
<td>1.200</td>
</tr>
<tr>
<td>PZ406</td>
<td>Red Oxide</td>
<td>1.090</td>
</tr>
<tr>
<td>PZ407</td>
<td>Green</td>
<td>1.050</td>
</tr>
<tr>
<td>PZ409</td>
<td>Black</td>
<td>1.200</td>
</tr>
</tbody>
</table>

Notes: For deeper colors use PZ5xx pastes, up to 5% - see page # for list of PZ5xx colors. We recommend mechanical mixing before use for every paste to precisely duplicate color matches. Weighing of tints is important. We recommend using pastes PZ400 series for tinting impregnators started from base TN30 (clear) with a maximum addition is 3%

SHELF LIFE: Six months

STORAGE: Store at temperatures between 5°C (41°F) and 30°C (86°F)

DATE OF ISSUANCE: 03-13
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: TN30-PN3X

DESCRIPTION: Water Based Protective Impregnator

USES: Best protection is achieved using the impregnator specially formulated for softwoods. Use on windows, doors, casings, railings, decks, and outdoor furniture.

APPLICATION SYSTEM: Spray, Dip, Brush, Flow Coat

QUANTITY(grsq mt): 40/60 by hand, max total 100 per coat

COATS: One

GENERAL PROPERTIES:
- Specific Gravity, gr/cc: 1.040±/2
- Viscosity at application (Zahn #2): 17+/2
- Thinner: TZ08 as retarder at max 5%

DRYING TIME:
- At room temperature: 12 hours
- Time between coats: 24 hours

TYPICAL SYSTEMS:
- Substrate: Various woods
- PN3x-TN30 Klima Series: 1 - 2 coats, 400-600 sq ft per gallon
- Drying: 1-4 hours between coats
- Sanding: very light with scotchbrite or fine sponge
- Sealer: TN40 or topcoat TN931 as self-sealer: 1 coat
- Drying: 2-4 hours
- Topcoat: TN931 or TN931/00

Notes:
- Do not use below 50°F or with very high humidity
- Mix products thoroughly before use.
- When using exotic and resinous wood, prepare substrate by removing excess sap or oils
- Colors in the PX3 Klima series can be mixed to obtain various tones, to brighten tones mix the PN3X Klima series with the TN30 Neutral
- Excessive impregnator or runs should be evened out with brush in first moments after application.
- KEEP FROM FREEZING!

SHELF LIFE: Six months from delivery date

STORAGE: Store at temperatures between 41°F and 86°F

DATE OF ISSUANCE: 03-13
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: TN340

DESCRIPTION: KLIMA WATER-BASED CLEAR IMPREGNATOR FOR HARDWOOD
This product is based on synthetic mono-component resins in water dispersions, specific for coloring and protection of tannin-rich woods.

USES: Best protection is achieved using the impregnator specially formulated for hardwoods. Use on windows, doors, casings, railing, decks, and outdoor furniture.

APPLICATION SYSTEM: Spray, Dip, Brush, Flow Coat

QUANTITY (grsq mt): 400-600 sq feet per gallon

COATS: One

GENERAL PROPERTIES:
- Specific Gravity, gr/cc: 1.004 +/- 0.02
- Viscosity (Zahn #2): 12 +/- 2 sec.
- Solids, % by weight: 9 +/- 2
- Thinner: water at 0-5% or TZ08 as retarder at max 5%

DRYING TIME:
- Air drying:
  - Dry to touch: 30 minutes
  - Sandable: 2-4 hours
(Drying times vary according to temperature, ventilation and relative humidity)

COATING CYCLES:

**Cycle 1 - High Quality - Thixotropic Topcoat**

- Substrate: Hardwoods
- Impregnator: 1 coat TN340 + PZ4 pastes - drying time 1-2 hours
- Sealer - intermediate: 1 coat TN45 - drying time 2-4 hours
- Sealer: 1 coat TN40 - drying time 2-4 hours
  - sanding (grain 220-280)
- Topcoat: 1 coat TN931

**Cycle 2 - General Use - Thixotropic Topcoat**

- Substrate: Hardwoods
- Impregnator: 1 coat TN340+ PZ4 pastes - drying time 1-2 hours
  - very light sanding
- Topcoat: 1 coat TN931
- Topcoat: 1 coat TN931

SHELF LIFE: Six months from delivery date

STORAGE: Store at temperatures between 5°C (41°F) and 30°C (86°F)

DATE OF ISSUANCE: 03-13
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: TN370

DESCRIPTION: KLIMA WATER-BASED CLEAR IMPREGNATOR FOR EXOTIC OILY & TANNIN-RICH HARDWOODS
This product is based on synthetic mono-component resins in water dispersion, specific for coloring and protection of tannin-rich woods.

USES: Doors, windows, casing, railings, decks, and outdoor furniture

APPLICATION SYSTEM: Dip, Brush, Spray

QUANTITY (grsq mt): 400-600 sq feet per gallon

COATS: One

GENERAL PROPERTIES:
- Specific Gravity, gr/cc: 1.020 +/- .01
- Viscosity (Zahn #2): 12 +/- 2 sec.

DRYING TIME:
- Air drying (at room temperature with good ventilation)
  - Drying schedule: 1-2 hours
  - Time between coats: 2-4 hours
  (Drying times can vary according to temperature, ventilation and relative humidity)

COATING SCHEDULES:

A) Substrate: Iroko, green hart, etc hardwoods
   Staining: TN370 + PZ4 pastes - 1 coat
   Drying: 1-2 hours
   Base Coat: TN40 - 1 coat
   Sanding: Very light brushing or sanding w/ 220 or 280 grit
   Topcoat: TN931 - 1 coat

B) Substrate: Iroko, greenhard, etc. hardwoods
   Staining: TN370 + pastes
   Drying: 12 hours
   Topcoat: TN931 1-2 hours as self-sealer 1 coat
   Drying: 12 hours
   Sanding: Very light brushing or sanding w/220 or 280 grit
   Topcoat: TN931 as self sealer 1 coat

CONTINUED ON NEXT PAGE...
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: TN370 - page 2

NOTES: In order to achieve the best outdoor performance we suggest you use impregnators with color; neutral products decrease the protection level. Mix cans thoroughly before use. Keep from freezing.

SHELF LIFE: Six months

STORAGE: Store at temperatures above 42°F and below 86°F

DATE OF ISSUANCE: 03-13
PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: TN40

DESCRIPTION: Klima Water Based Clear Wood Tone Clear Sealer
Thixotropic filling sealer based on water-based one-component sanding sealer using synthetic resins for wood protection. Allows application of high product thickness-with only one coat without risk of running or sagging.

USES: For outdoor and indoor use, pre-coated with KLIMA series Aquatech impregnating stains.

APPLICATION SYSTEM: Brush, spray (air, airmix, airless)

QUANTITY: 8-10 mils wet

COATS: One

GENERAL PROPERTIES:
- Specific Gravity, gr/cc: 1.030+/-0.02
- Viscosity as supplied (Brookfield Aspo 4 speed 2.5): 17,000-19,000
- Solids, % by weight: 35 +/-2
- Thinner: Water or TZ07 for spray or TZ08 for brush
- % of dilution: 0-5%

DRYING TIME:
- At 20°C with ventilation, dry to handle:
  - Dust Free: 20 minutes
  - Dry to touch: 1 hour
  - Full dried: 2-4 hours
  - Sanding: 4-6 hours

(Drying times may vary according to temperature, ventilation and relative humidity)

COATING CYCLES:
Cycle 1 - High Quality with Thixotropic Topcoat
- Substrate: Pine or softwoods
- Impregnating: PN 3/color - 1 coat - 2 hours drying
- Sealer: TN40 - 1 coat - 2 hours before sanding
- Topcoat: TN931 - 1 coat

Before using finished coated items, it is advisable to wait 48 hours

IC & S, P.O. BOX 10845, LANCASTER, PA 17605
(800) 220-4035

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<table>
<thead>
<tr>
<th>PRODUCT SERIES:</th>
<th>KLIMA SERIES</th>
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<tbody>
<tr>
<td>PRODUCT CODE:</td>
<td>TN40, page 2</td>
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<tr>
<th>PRODUCT PROPERTIES:</th>
<th>TN40 Sealer is characterized by very good covering power (intended as filling capacity) joined to an easy sanding. Highly flexible film allows for the movement of wood without flaking off. It is also easy to maintain.</th>
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<tbody>
<tr>
<td>MAINTENANCE:</td>
<td>Previously finished items should be lightly with 280 or 320 grit and re-coated.</td>
</tr>
<tr>
<td>WARNINGS:</td>
<td>Keep from freezing</td>
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<tr>
<td>SHELF LIFE:</td>
<td>Twelve months from date of manufacture</td>
</tr>
<tr>
<td>STORAGE:</td>
<td>Store at temperatures above 45°F</td>
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<td>DATE OF ISSUE:</td>
<td>03-13</td>
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PRODUCT SERIES: KLIMA SERIES

PRODUCT CODE: TN931/xx series

DESCRIPTION: KLIMA WB Clear and Wood Tone Topcoat
Thixotropic topcoat based on acrylic based resins in water dispersion for wood protection. Suitable for hardwoods and softwoods.

PRODUCT PREPARATION:
TN931/XX WB Clear or Wood Tone Self-Sealer 100 parts by weight or volume
Water Thinner 30 parts by weight or volume

USES: Two coats. Can be used as a self-sealer. For outdoor and indoor use, pre-coated with KLIMA series Aquatech impregnating stains and sealers.

APPLICATION SYSTEM: For best results use Kremlin 30:1 pump with Airmix 600 fluid lbs, 35-40 static atomizing air 06134/06154 tips or use conventional, pressure pot, cup gun or apply by roller or brush. To brush use TZ08 at 5%.

FILM THICKNESS: 8-10 mils wet

COATS: One

GENERAL PROPERTIES:
- Specific Gravity, gr/cc: 1.050+/- .02
- Viscosity as supplied (Brookfield Aspo n°4 vel 2.5): 38,000-41,000 cps
- Solids, % by weight: 40 +/- 2
- Thinner: Water - TZ07 or TZ08
- % of dilution: 5-20% depending upon equipment

DRIED TIME:
Air Dry with ventilation, dry to handle:
- Dust Free: 20 minutes
- Dry to touch: 1 hour
- Full dried: 2-4 hours
- Sanding: 2-4 hours

(Drying times can vary according to temperature, ventilation and relative humidity)

GLOSS AND COLORS AVAILABLE:
- TN931/00 Clear Satin
- TN931 Wood Tone Satin
- TN931/50 Wood Tone 50 Sheen
- HTMSA077 Clear 5 Sheen

COATING CYCLES:
Cycle 1 - High Quality with Thixotropic Topcoat
- Substrate: Pine or soft woods
- Impregnating: PN 3/color - 1 coat - 1-2 hours drying
- Sealer: TN40 - 1 coat - 2-4 hours before sanding
- Topcoat: TN931 - 1 coat

Before using coated items, it is advisable to wait 48 hours. Minimum room temperature during application and drying should be 60°F

CONTINUED ON NEXT PAGE...
**ILVA TECHNICAL DATA SHEET**

**PRODUCT SERIES:** KLIMA SERIES

**PRODUCT CODE:** TN931 series, page 2

**DESCRIPTION:**

**COATING CYCLES:**

- **Cycle 2** - General use as self-sealer
  - **Substrate:** Pine or soft woods
  - **Impregnating:** PN 3/color - 1 coat - 1-2 hours drying
  - **Light Sanding with scotchbrite**
  - **Topcoat:** TN931 - 1 coat - dry 2-4 hours - sand with 280 grit
  - **Topcoat:** TN931 - 1 coat

The above cycle number 2 is certified by CATAS with "Catas Quality Award" in conformity with "ENV 927 - 2/2000 Performance Specification" and with all further features of the technical specification of "Catas Quality Award-Coating System for exterior wood".

**PRODUCT PROPERTIES:**

- This product improves the protective action of the impregnating products and protects the substrate from photochemical degradation thanks to the presence of special UV absorbers. Soft to the touch and highly flexible, no sanding when applying coat for maintenance so as to allow easy maintenance.

**MAINTENANCE:**

- Items already coated with TN931 topcoat should have dirt and other residuals removed and be topcoated with the Klima TN030 products.

**WARNINGS:**

- Keep from Freezing!

**SHELF LIFE:**

- Six months from delivery date

**STORAGE**

- Store at temperatures above 45°F

**DATE OF ISSUE:** 03-13, Revised 6-15

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HELPFUL HANDLING & MIXING INSTRUCTIONS

FOR GREEN HART, IROKO, CEDAR AND SIMILAR WOODS THAT BLEED:
The use of a solvent base barrier coat is necessary to block the bleeding of tannins on some types of exotic hardwoods and softwoods. Product code TF25 is recommended.

APPLICATION METHOD:
When spraying use TZ07 as a slow retarder for all Klima products for spray application. When brushing use TZ08 as retarder for all Klima products. TZ77 is a non-flammable version of TZ07.

DRYING:
All waterbase products require good ventilation for drying. The use of fans will dramatically improve dry times during factory application. Do not put finished pieces directly in air flow from the fan while coating is still wet.

Providing sealer and topcoat films are not sticking to the sandpaper, the coatings may be sanded. A good rule of thumb is if you can flick the sandpaper with your finger and all the dust comes off, it is ok to sand. Indications regarding sandpaper sizes are optional. The finer the grit, the smoother the finishes will be. All Klima products will tend to hide sand marks due to their filling properties.

GENERAL INFORMATION:
Do not use steel wool for sanding the raw wood since residual metal dust can cause rust spots. In the case of exotic and resinous woods, clean the substrate well before coating (ASK Nelson). For better color uniformity, clean with a dry brush or rag after 15-30 minutes in order to remove excess product not absorbed. When recoating previous coatings, it is best if all of the old film is completely removed by sanding or stripping. Hardwoods usually need a superior number of coats. Drying times of Klima coatings will be increased on wood that has poor absorption characteristics and by cold, wet weather. It is always advisable to run short tests with these products to verify if the result obtained is suitable. Wait for 24-48 hours before placing the installation.

RECOMMENDED STORAGE
All water based products should be stored in tightly closed containers at temperatures above 41°F

Date of Issuance: 03-13