

# Lonza

# TANALITH<sup>®</sup> CY







**TANALITH® CY is a water based timber preservative, it contains copper and triazole biocides. TANALITH® CY is applied into wood with vacuum pressure impregnation process. It is supplied as a concentrated product and is diluted with water to produce the working solution. When impregnated into the timber the chemical components bond with the wood structure and cannot easily be removed. Timber treated with TANALITH® CY preservative is known as TANALISED® E pressure treated timber.**

**Competent Authorities including:**

**Japanese Wood Preserving Association (JWPA)**

**Japanese Industrial Standard**

**AQ (Approved Quality)**

**Korean Forest Research Institute**

**Korean Standard**

**have evaluated Arch Wood Protection's TANALITH® CY and confirmed the effectiveness of the product.**

**TANALISED® E pressure treated timber has an aesthetically pleasing green coloration, the surface of the treated timber is clean, non oily and non greasy. It has excellent weathering properties and gives long term protection against fungal and insect attack for both in and out of ground contact.**





## Active Ingredients

Copper Oxide (CuO).....	11.6% (min)
Cyproconazole.....	0.136% (min)

## Major Properties

a) Appearance:	Deep Blue liquid
b) Solubility :	Forms an emulsion when concentrate is diluted in water.
c) Odour :	Slightly amine odour
d) S.G :	1.29 g/cm <sup>3</sup>
e) pH :	~9.1-9.3 @ 20°C ( 5% solution)
f) Viscosity :	Approx 180 centipoise at 5°C
g) Flammability :	Not flammable
h) Stability :	More than 6 month if kept under room temperature

## Safety and Health

a) Acute oral LD50 :	>750 mg/kg (rat)
b) Acute dermal LD50 :	> 2010 mg/kg (rat)
c) Mutagenicity (Ames Test):	Negative
d) Toxic to daphnia LC50 :	0.53 mg/L
e) Toxic to cell :	Negative
f) Toxic to fish LC50 (96hour):	3.2 mg/L
h) Skin Irritation Test :	Negative,

It is confirmed through several tests that the ingredients in Tanalith® CY rarely vaporize during the mixing process. Therefore, it is very unlikely that the vapors from treatment facilities and treated timber will affect operators' health.

## Benefit of Tanalith® CY

a) Main active ingredient: Copper and low toxicity of Cyproconazole (Co-biocides).

Does not contain arsenic or hazardous heavy metal which will be released to the environment when burning the treated wood.

b) Copper and cyproconazole are fixed in the wood, offering long lasting protection. Copper can work well against to protect decay fungi in ground.

c) Tanalith® CY can penetrate better into the wood compared with other wood preservative.

d) If foaming occurred during treatment operation, Antifoam can be added into the Tanalith® CY working solution

e) Tanalith® CY treated wood has almost the same corrosion against iron and absorption character as untreated timber.

f) The colour of Tanalith® CY treated wood is slightly green and it is a good indicator to differentiate them from the untreated wood.

g) Tanalith® CY treated timber is long lasting and safe to use as residential building material, outdoor structure, industrial building material, agricultural application.



## Pressure Treatment

Tanalith® CY is applied to air or kiln dried wood via pressure treatment. The timber should be treated with Tanalith® CY working solution in accordance with the specification of JIS A 9002 (Preservative treatments of wood products by pressure processes).

## Mixing Ratio

End application of timber	Concentration of Tanalith® CY solution	Mixing ratio (Tanalith® CY: water)
Above ground	> 0.2 % w/w	1 : 43-45
In-ground	> 0.3 % w/w	1 : 33-35

## Efficacy of Tanalith® CY

### a) Laboratory Decay resistance test

Japan Forestry Research Institute and University Agriculture of Tokyo had conducted decay resistance trial on Tanalith® CY treated wood based on JIS K 1571 Test Methods for determining the effectiveness of wood preservatives and their performance requirement. The results are shown below:

Table 1: The result of Laboratory Decay resistance test

Test Fungi	<sup>2</sup> Retention of Preservative, kg/m <sup>3</sup>		<sup>1</sup> Weight Loss, %	Analysis party
	CuO	Cyproconazole		
Formitopsis Palustris	1.9	0.02	1.5	Japan Forestry Research Institute
Trametes versicolor	1.9	0.02	1.2	
Formitopsis Palustris	1.9	0.02	2.8	University Agricultural of Tokyo
Trametes versicolor	1.9	0.02	1.8	

Note <sup>1</sup> Weight loss shall be lower than 3%

<sup>2</sup> Retention of active of Tanalith® CY

### b) Laboratory termite resistance test

Termite test is conducted by Japan Forestry Research Institute (JFRI), University Agriculture of Tokyo (UAT), and Kinki University according to JWSA laboratory scale of termite resistance test. The result shown below:

Table 2: The result of laboratory termite resistance test

Analysis Party	<sup>2</sup> Retention of Preservative, kg/m <sup>3</sup>		<sup>1</sup> Weight loss, %	Weathering operation
	CuO	Cyproconazole		
JFRI	1.90	0.020	2.90	Done
	1.90	0.020	1.30	None
UAT	1.38	0.016	2.50	Done
	1.38	0.016	1.80	None
Kinki University	1.42	0.017	2.76	Done
	1.57	0.017	1.95	None

Note <sup>1</sup> Weight loss shall be lower than 3%

<sup>2</sup> Retention of Tanalith® CY active



c) Iron Corrosion Properties test

This test was conducted by Japan Forestry Research Institute and University Agriculture of Tokyo in accordance with JIS K 1571 Iron Corrosion Property test. The results showed that the average weight loss for nails in Tanalith® CY treated wood is around 1.70 ~ 1.23% (results must be below 2% to pass this test).

d) Field termite resistance test

This field termite resistance test was conducted by Kinki University in Kagoshima for a period of two years. It was found that Tanalith® CY treated wood was not attacked by termite. The result of the field termite resistance test as shown below:

Termite Attack level	No of test piece	Average			Remark
		Uptake	Absorbable ratio	Retention	
A (No attack in 2 years)	5	631 (kg/m <sup>3</sup> )	103%	1.58 kg/m <sup>3</sup>	Untreated wood is severely attacked by termite within one year. The termite field test is continuous until today.
B (Attack within 1 to 2 years)					
C (Attack within 1 year)					

Table 3: The result of field termite resistance test

**Fixation**

The fixation of Tanalith® CY treated wood which is treated with Tanalith® CY working solution (45 time dilution) is tested in accordance with JIS K 1571 Weathering Operation. The results of copper (Cu) remaining in the treated wood is shown below

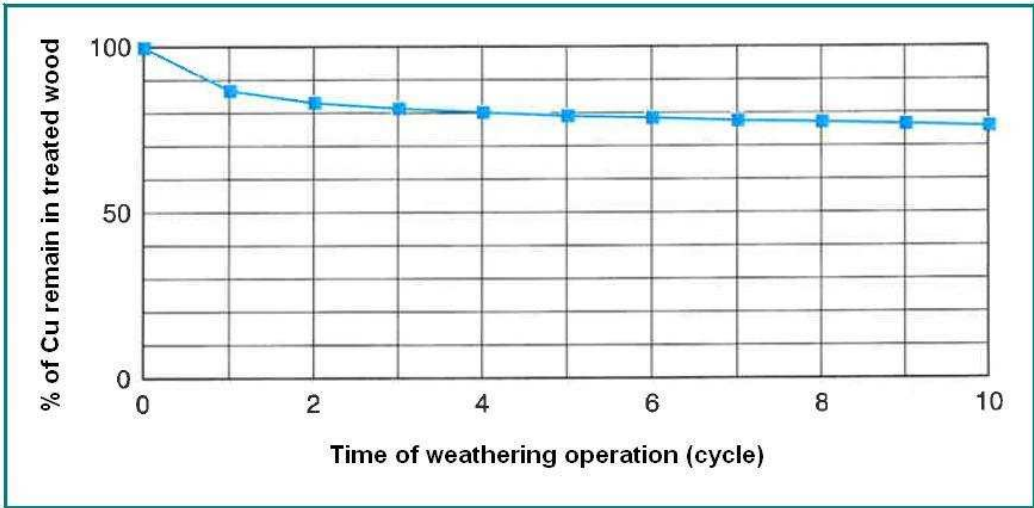


Figure 1: The fixation of Tanalith® CY treated wood (Cu)



## Penetration Property

Figure 2 shows the better absorption and penetration properties of Tanalith® CY compare to typical wood preservatives. Tanalith® CY is able to achieve 80% penetration from the surface of the wood according to JAS - K3 specification.

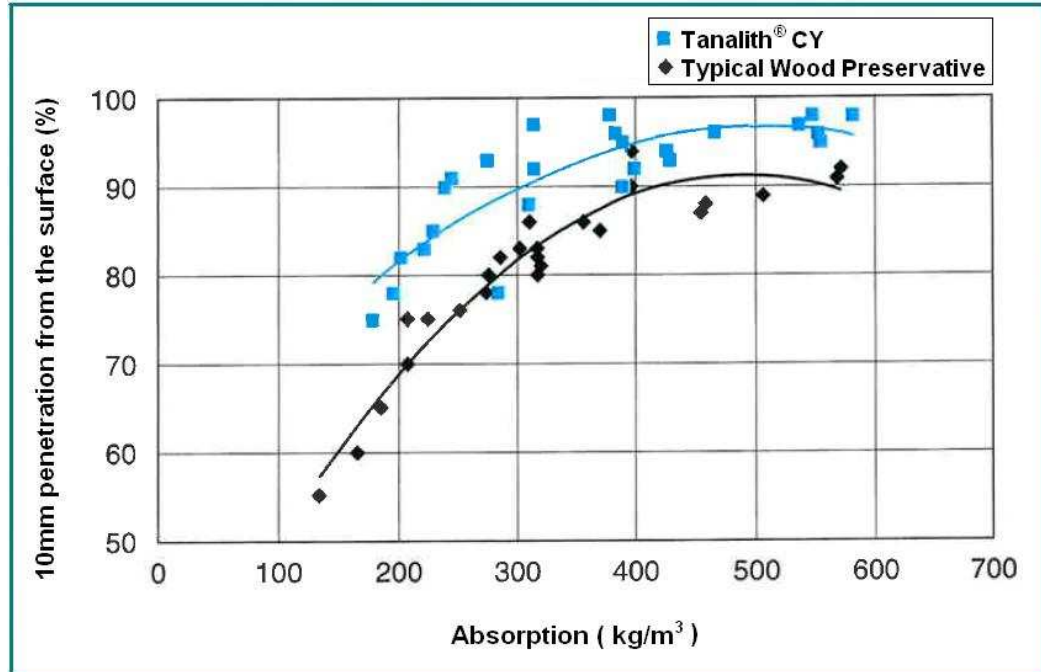


Figure 2: Absorption and Penetration (at centre of 4 meter wood) of kiln dried western hemlock treated with Tanalith® CY

## Location of Local field test

Local field tests in Japan were implemented in Hokkaido, Ibaragi, Gumma, Hiroshima and Kumamoto prefecture since 1999 to date.

## Burning of treated wood

Ashes from burning of Tanalith® CY treated timber does not contain harmful substances like arsenic or chromium. The components of gas released from Tanalith® CY treated timber during burning are the same as from untreated timbers.

Manufacturer:

# Lonza

**Arch Wood Protection (M) Sdn. Bhd.**

No. 1-1, Jalan 109E, Desa Business Park,  
Taman Desa, Off Jalan Klang Lama,  
58100 Kuala Lumpur, Malaysia.

Tel: +603 7981 4002 Fax: +603 7981 5886

[www.tanalised.com](http://www.tanalised.com)

Feb 2007