



■ VERNICI PER LEGNO ■

ARBOREA

NANO
TECH

NANOTECHNOLOGICAL
WATER-BASED TOP COAT
FOR EXTERIORS



NANOTECHNOLOGY

There is currently much talk about nanotechnology, which can be simply defined as technology applied to the extremely small. The prefix *nano* means a billionth, so a nanometre corresponds to one billionth of a metre. To have a more concrete idea it is sufficient to imagine a millimetre divided into a million segments. Going so far into the dimensions of the material we find the atoms which nanotechnology manages to manipulate as if they were bricks.

The particular properties of nano-materials are due to the small dimensions of the particles of which they are comprised and above all to the number of *superficial atoms* (those which can be seen on the surface of the particle) and *internal atoms* of the particle. A particle such as a grain of sand contains billions and billions of atoms and most of them are inside the grain. A nano-particle on the other hand has a very small volume of atoms, and those on the surface are almost equivalent to the internal ones; this specific surface gives it its particular characteristics.

This new discipline, born around the mid 1980's, is already finding uses in many sectors, from the sanitary sector to free-time to paints.

In coatings the nano-materials are the object of study with the aim of improving the chemical-physical characteristics of the film. In particular the goals are to enhance hardness and scratch and abrasion resistance, resistance to knocks and to aggressive external agents without compromising the transparency, which is very important when coating wood.



LA409I WATER-BASED NANOTECHNOLOGICAL TOP COAT FOR EXTERIORS

Specifically for coating outdoor frames and shutters, ICA has added the transparent water-based nanotechnological top coat LA409I to its product range, fruit of the great experience of ICA's Research and Development laboratories in the formulation of water-based coatings for exteriors, together with important developments in recent years in the **nano-materials** sector.

Advantages in the application phase:

- thanks to its high covering power in electrostatic application, it allows the realization of a film which has a uniform thickness even in zones which are usually difficult to reach;
- it allows a drastic reduction in overspray and therefore a reduction in consumption, and excellent recoup on cool vertical carpet and ease of re-use thanks to its pseudoplastic viscosity;
- creates very limited tearing of the wood's fibre and therefore allows an excellent covering with less quantity applied.

Technical advantages:

- better water resistance;
- better capacity of transpiration of water vapour;
- less surface degradation after exposure to ageing tests according to EN 927/6;
- excellent impermeability of the film after just 24 hours from application.

Aesthetic advantages:

- good wetting and excellent definition of the pore, without swelling, and without the so-called "plasticized effect";
- excellent transparency;
- velvet effect to touch.

COATING CYCLES

3 COATS CYCLE

Pine, Dark Red Meranti, Oak, Chestnut, Fir, Douglas and Hemlock

PRODUCT	DESCRIPTION	DRYING TIME	QUANTITY
IM121SC..	Colored impregnating agent	2-4 hours	40-60 g/m ²
LA409I	Top coat	4 hours	175-200 micron
Manual sanding after at least 12 hours.			
LA409I	Top coat	24 hours	200-250 micron

3 COATS CYCLE with intermediate

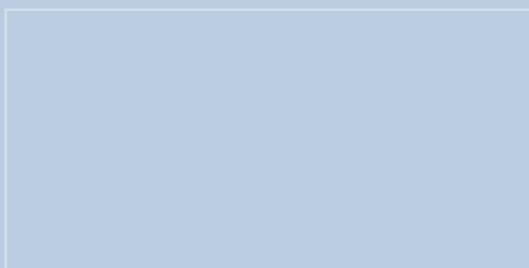
Pine, Dark Red Meranti, Oak, Chestnut, Fir, Douglas, Hemlock and multilayer Okoumé *

PRODUCT	DESCRIPTION	DRYING TIME	QUANTITY
IM121SC..	Colored impregnating agent	2-4 hours	40-60 g/m ²
IM441	Intermediate	2-4 hours	60-80 micron
Sanding and manual touch up after at least 12 hours.			
LA409I	Top coat	24 hours	275-300 micron

*On pantographed panels apply one coat of sealer ISA255 by spray after the impregnating agent.



The information contained in this brochure has been prepared to the best of our knowledge and is intended as a general guide, since there is not space to describe in detail all of the processes and application systems that could potentially be used. It is recommended to carry out a preliminary test before starting work. For more information, please consult the products' technical data sheets or request assistance from ICA technical support. The "Nanotechnological water-based top coat for exteriors" brochure is periodically updated in line with the latest technological developments and our direct experience of the products. Be sure to use the latest edition at all times.



INDUSTRIA CHIMICA ADRIATICA s.p.A.
VERNICI SPECIALI PER LEGNO

Via Sandro Pertini, 52 - Zona Ind.le A - 62012 Civitanova Marche (MC) Italy
 Tel. +39 0733 8080 - Fax +39 0733 808140 www.icaspa.com e-mail: info@icaspa.com
 AZIENDA CON SISTEMI DI GESTIONE CERTIFICATI COMPANY WITH CERTIFIED MANAGEMENT SYSTEMS
 UNI EN ISO 9001:2000 - UNI EN ISO 14001:2004