

# NISO EXTERIOR

*Water-based isocyanate-free coatings*





# NISO EXTERIOR

**Water-based**

**diisocyanate-free coatings**

Niso Exterior 2K System solutions are isocyanate-free coatings created: for the protection and the design of exterior windows and doors. Choosing these coatings from Renner laboratory means complying with regulations and making your life easier. As well as accessing the highest standards of durability and aesthetics by Renner Italia.

**Niso Exterior 2K System is the coating programme that does not require a training of diisocyanates workers.**

Excellent on wood and wood-aluminium windows, shutters, entry doors, garage doors, Niso Exterior 2K System, according to the desired look, includes the use of

- diisocyanate-free hardener YC---M410
- stained topcoat YO-xxM380
- pigmented topcoat YO-xxC380

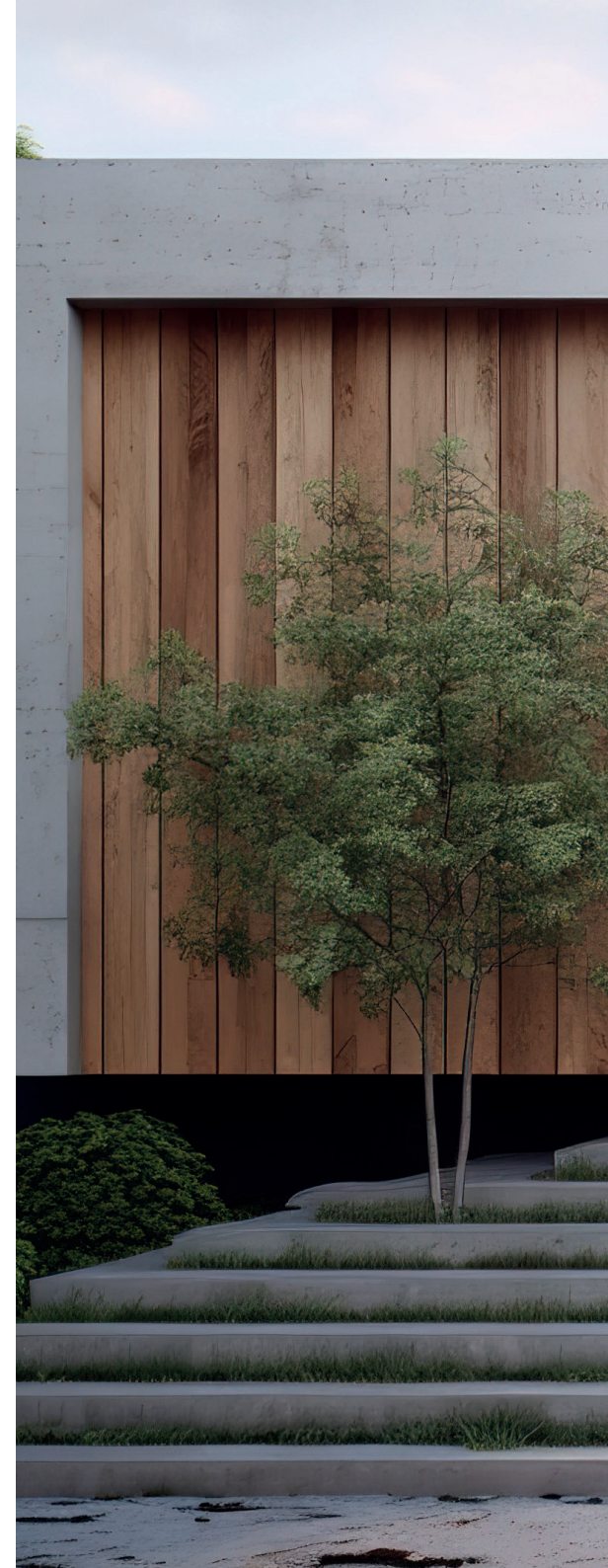
Flat or vertical application both airmix and airless. Also in two-pump system.

**Diisocyanates in coatings**

**What the regulation states**

Diisocyanates are chemical compounds classified as category 1 respiratory and skin sensitisers. They are components sometimes used in coating formulas. EU Regulation 2020/1149 specifies that, in order to use a mixture with a diisocyanate concentration of more than 0,1%, the user must have successfully completed a specific training.

Thanks to Niso Exterior 2K System solutions, Renner Italia solves the root of the problem, by not including diisocyanates among the raw materials of the hardener. As a result, it is not necessary to attend the training of diisocyanates workers.





# No need to attend the training thanks to Niso Exterior 2K System

The curing process of a traditional water-based coating is divided into three steps:  
the evaporation of the water, the melting of the resin micelles and the formation of the  
layered structure.



**Evaporation  
of the water**



**Melting  
of resin micelles**



**Formation  
of the layered structure**

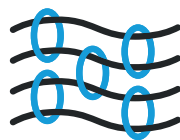
To increase the film performance of a topcoat, it is necessary to bind the layers through chemical  
reactions promoted by a second component. And this is when the hardener becomes involved.



**1K  
traditional topcoat**



**Hardener  
YC---M410**



**2K  
topcoat**

Compared to the traditional 1K system, the 2K system provides superior performances  
in terms of resistance to chemicals, water, scratching, abrasion and blocking. The innovative  
second component YC---M410 by Renner Italia is the polyisocyanate hardener with  
encapsulated aziridine functionality. A unique innovation that meets all legal requirements,  
exempting the painter from the training required by the EU 2020/1149 regulation, focusing  
on all key performance indicators of the 2K system.





# Niso Exterior 2K System

## All the advantages to be taken

### Higher performances than 1K topcoat

Compared to a traditional 1K topcoat, Niso Exterior 2K System significantly increases resistances to:

**blocking / scratching, strikes and abrasions / chemicals and creams**

### More efficient than 2K topcoat with isocyanate

Compared to the traditional 2K topcoat with isocyanate, Niso Exterior 2K System is valued for **longer pot-life /**

**accelerated curing / reduced waste / simplified pump maintenance**

Furthermore, Niso Exterior 2K System has less occupational health and safety restrictions:

**it does not require a diisocyanate training / has no flammable components / has labels with reduced warnings**



**Isocyanate** (market reference)



**YC---M410**

### Easier than 2K topcoat with aziridine

Compared to the traditional 2K topcoat with aziridine, Niso Exterior 2K System has less occupational health and safety restrictions:

**veste etichette con avvertenze ridotte**



**Aziridine** (market reference)



**YC---M410**



# Niso Exterior 2K System

fears no comparison

		1K topcoat <i>(market reference)</i>	2K topcoat with isocyanate hardener <i>(market reference)</i>	2K topcoat with aziridine hardener <i>(market reference)</i>	2K topcoat YO-xxX380 hardened at 4% with YC---M410
2 <sup>nd</sup> component	label	not applicable			
	flammability	not applicable			
	hardener addition	not applicable	7-10%	1-2%	4%
Topcoat + 2 <sup>nd</sup> component	pot-life	not applicable	2-4 hrs	6-8 hrs	16-24 hrs
	chemical resistance				
	mechanical resistance				
	pumps maintenance				
	speed of curing				
	product waste				

excellent	good	sufficient	insufficient
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