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Technical information

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Policril range for coating

All-acrylic polymer dispersions for exterior coatings

A large, light blue watermark of the FAR POLYMERS logo is centered in the background of this section.

FAR polymers is one of the leading companies for R&D, production and sale of water-based polymer dispersions.

The range for exterior decorative coatings, based on all-acrylic technology, has been recently improved to meet the different challenges and needs from our customers.

Our range includes:

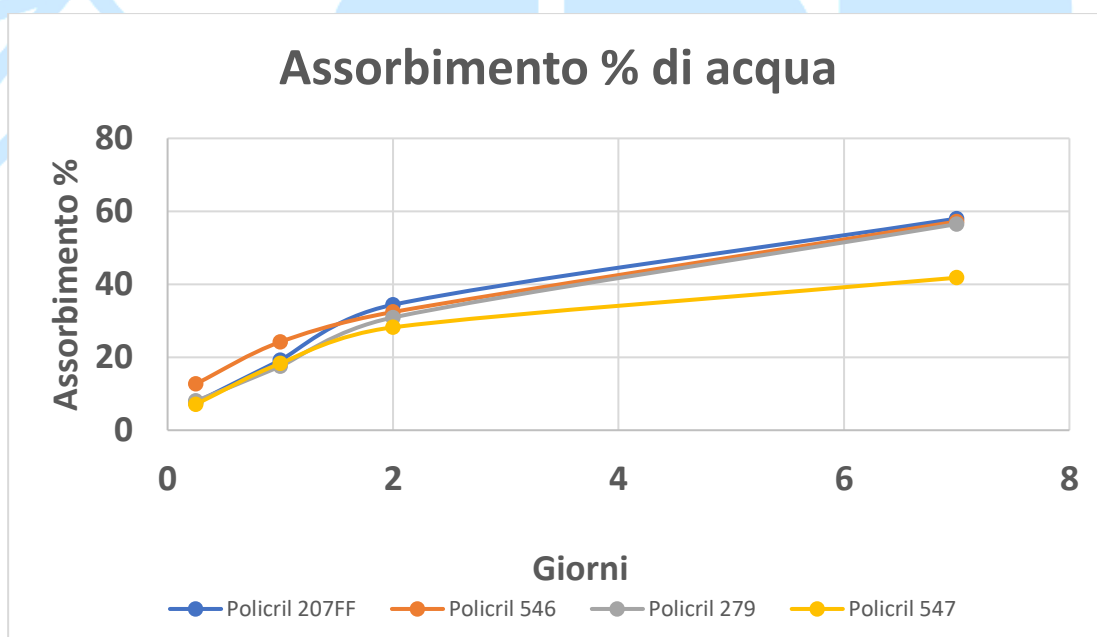
- 1) Policril 207FF, our work-horse for all applications;
- 2) Policril 547, our premium binder for exterior application, with superior water and UV-weathering resistance;
- 3) Policril 546, low MFFT binder with excellent mechanical resistance and excellent UV-weathering resistance;
- 4) Policril 279, very low MFFT binder with excellent water resistance and excellent UV-weathering resistance coupled with a very good resistance to lime.

The following table is a review of the main characteristics of the four dispersions:

Product		Policril 547	Policril 207FF	Policril 546	Policril 279
Dry content	%	50	46	50	50
Brookfield LT viscosity	mPa.s.	< 1000	2000	< 1000	< 500
pH		7,5	7,5	7,5	7,5
Mean particle size	microns	0,09	0,14	0,14	0,24
Tg	°C	21	12	10	2
MFFT	°C	18	18	5	1

Water resistance of these polymers have been measured through testing polymer films, obtained by drying water dispersions of said products laid with a thickness of 500 microns (wet) and aged for seven days at 23°C and 50% RH.

After this ageing the polymer films ere thoroughly plunged in water; water absorption was measured after different times:



Of course this water resistance is also a feature of the paint with our all-acrylic dispersions.

Policril 547 also shows an excellent hydrophobic effect (drop effect) allowing the paint formulator to save on siloxanes when it comes to the formulation of acrylsiloxan paints.

Policril 546 and Policril 279, on the other hand, allow saving on coalescing agent, given the low MFFT. This result has been reached without renouncing the performances of higher Tg polymers.

The mechanical resistance of Policril 546 was tested by simply mixing fine calcium carbonate with the binder at a very high speed and checking the time before reaching a thickening compound and registering the temperature at the end of the test.

Policril 546 shows a double time in comparison with standard lattices and much lower final temperatures.

The UV resistance of Policril 546 was tested with 120 days of continuous test at QUV accelerated weathering test, showing a very low change in color parameters.

Policril 279 resistance in the formulation of lime products was tested by checking the change in viscosity in a lime formulation. Ordinary acrylic lattices do not pass 1 week of ageing at 50°C, leading to complete coagulation of the product. With Policril 279 the lime paint is stable for several weeks.

This stability is given by the use of special surfactants which also allow the product to be formulated in standard paints whenever a very low MFFT is needed.

All products show from good to excellent binding properties in relation to pigments and fillers generally used in the production of water-based emulsion paints. These properties have been highlighted following wet scrub resistance tests done on 200 microns (wet) films obtained from this formula:

Water	26,0
Hydroxyethyl cellulose high viscosity	0,32
Sodium hexametaphosphate 10% solution	0,87
Policril DS 02	0,92
Wetting agent	0,28
Antifoam	0,28
Ammonia 30%	0,1
Biocide	0,1
Titanium dioxide	21,4
Caolin	8,1
Calcium carbonate	27,8
Coalescing agent	0.83
Policril 50%	13,0

For Policril 279 no coalescing agent was used, for Policril 546 0,3 parts of coalescing agent in the formulation. For Policril 207FF was adjusted for the lower dry content.

The following table shows excellent results for the four products:

Product		Policril 547	Policril 207FF	Policril 546	Policril 279
wet scrub resistance	# of cycles	2000	1200	1500	1500

In particular Policril 547 shows a resistance similar to a styrene acrylic with Tg 24°C; Policril 546 and Policril 279 show high resistances given their low Tg.



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All the data above are the results of tests in our laboratory. Customers must test the product for each application, because the results are effected by a large number of types of ingredients, conditions and substrates which can not be covered by our tests.
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