



The All-in-One Tool

DORKAFILL® Pro_Void – multifunctional cost effective filler for premium-class dispersion paint



DORKAFILL® Pro_Void

– multi-functionality means customers get more value



Refined kaolins in the DORKAFILL® range give dispersion paint manufacturers access to a valuable and highly versatile multifunctional tool which they can use to selectively optimize paint properties to match a specific requirements profile and to reduce costs.

DORKAFILL® Pro_Void is a key member of the product family. This multifunctional additive is used primarily as a matting agent in dispersion paint, and it also significantly improves the workability of the paint and enhances the quality of the finish. As a secondary effect, DORKAFILL® Pro_Void also has the potential to cut binder and/or pigment consumption and significantly reduce raw material costs. In this respect, DORKAFILL® Pro_Void delivers unparalleled customer benefit in the additives market. There are many other calcined kaolins out there, but none can compare. It is hardly surprising that DORKAFILL® Pro_Void is found in many dispersion paint formulations and leading brands all across Europe.

Surface charge	<ul style="list-style-type: none">■ Good integration in the polymer matrix■ Very good wettability■ Good insulating properties■ Longer shelf life
Whiteness	<ul style="list-style-type: none">■ Easy to integrate into existing tint/toner systems■ High degree of whiteness in the paint is preserved
Hardness	<ul style="list-style-type: none">■ Resistant to mechanical stress■ Good scrub resistance
Water absorption	<ul style="list-style-type: none">■ Positive effect on paint open time■ Very suitable for exterior surfaces
Platelet geometry	<ul style="list-style-type: none">■ Reduced susceptibility to cracking■ Influences rheology and application behavior
Chemical properties	<ul style="list-style-type: none">■ Withstands extremely harsh weather conditions■ Withstands aggressive cleaning agents
Microbiology	<ul style="list-style-type: none">■ Low CFU (colony forming unit) count
Quality	<ul style="list-style-type: none">■ Consistently high quality level

DORKAFILL® Pro_Void features a broad spectrum of properties which are important for dispersion paint and coatings.



- Whiteness
- Matting
- Wet scrub resistance
- Rheology
- Hiding power

DORKAFILL® Pro_Void – the compelling new standard

Its range of properties makes DORKAFILL® Pro_Void truly unique.

Security of supply

DORKAFILL® Pro_Void is a kaolin-based product. Dorfner extracts the kaolins at its own open-pit mines. The company manages its extensive deposits in a sustainable and eco-friendly manner. There are sufficient reserves in the Hirschau Basin to satisfy demand for many generations to come.



Selective extraction of soil containing kaolin at the Dorfner open-pit mine

Refining at its best

However, before natural kaolin becomes a DORKAFILL® Pro_Void multifunctional additive, it passes through a complex treatment and refining process to produce platelet-shaped kaolin with a fine surface texture and defined surface chemistry. DORKAFILL® Pro_Void is compatible with all standard binders and additives and stands up well to mechanical stress. It does exactly what it is expected to do in dispersion paint. The results are predictable and reproducible on every batch, year after year, ensuring dependable paint production and paint finishes which are second to none.



Mining

- Controlled
- Selective



Preparation

- Cleaning
- Screening and grading



Refining

- Temperature treatment
- Structuring
- Surface modification



Packaging

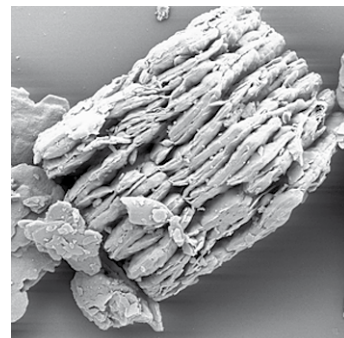
- Clean
- Secure

Refining kaolin to make DORKAFILL® Pro_Void takes considerable expertise and sophisticated technology.

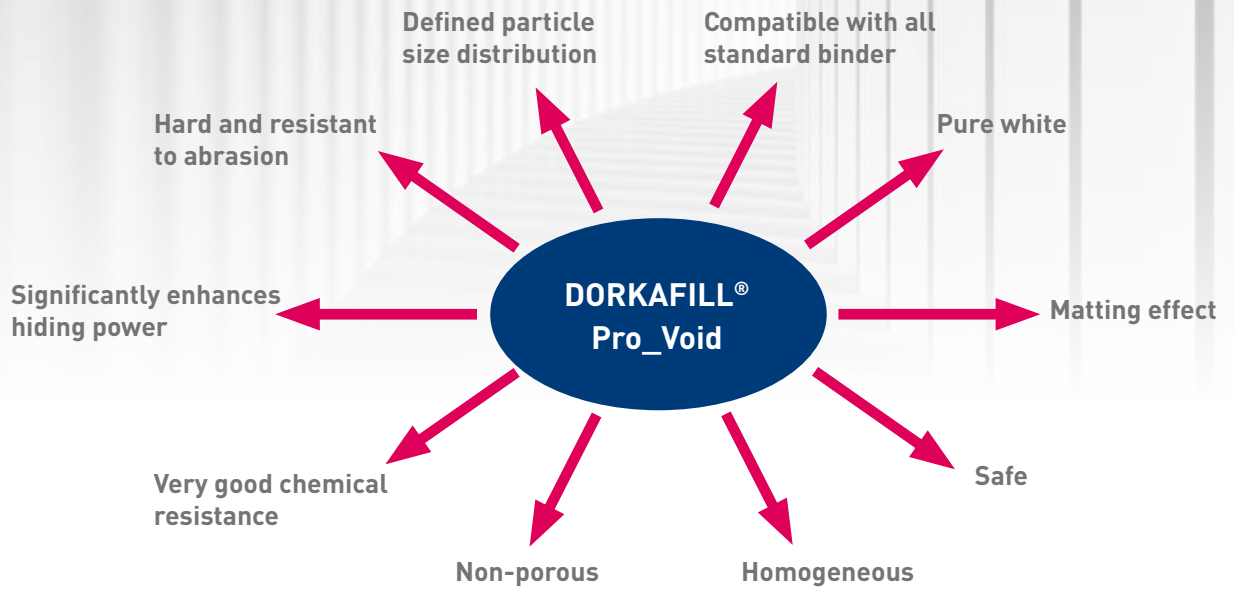
Differentiation

DORKAFILL® Pro_Void is clearly different from standard additives, and its distinguishing features are readily apparent. As a refined mineral, it is the perfect complement to typical bulk fillers such as chalk and marble dust which are constituents found in more than 90% of all commercially available dispersion paints. Because it is multifunctional, DORKAFILL® Pro_Void with its unique properties makes an important contribution to

- good paint workability
- a perfectly uniform, matt finish
- excellent whiteness
- outstanding wet scrub resistance of the coating and
- resistance to burnishing (formation of unsightly glossy effects when walls are rubbed)



The platelet structure of DORKAFILL® Pro_Void (scanning electron micrograph)



DORKAFILL® Pro_Void offers a whole range of useful properties and functions for dispersion paint.

Guideline formulations – a service from Dorfner

The Dorfner Paint Applications Engineering team (ATC) continually develops and publishes guideline formulations which have been optimized using multifunctional DORKAFILL® series additives. The formulations act as a helpful reference when customers assess their own formulations, and customers can use the Dorfner formulations as a starting point for their own optimization.

Formulation constituents	Qty/g
Water	302
Thickener	5
Dispersing agent	4
Anti-foaming agent	4
TiO ₂	125
Calcium carbonate 2 µm	150
Calcium carbonate 5 µm	125
DORKAFILL® H	115
DORKAFILL® Pro_Void	50
Binder	120
Total	1,000

Dorfner Guideline formulation containing DORKAFILL® series multifunctional additives

Solids	64 %
Density	1.6 g/cm ³
Pigment-volume-concentration (PVC)	80 %

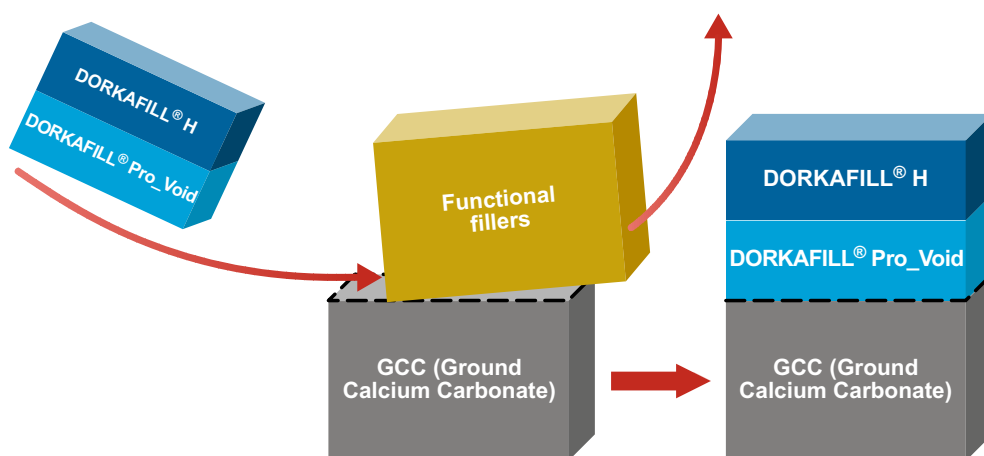
Guideline formulation parameters

Optimize the filler content and exploit synergies

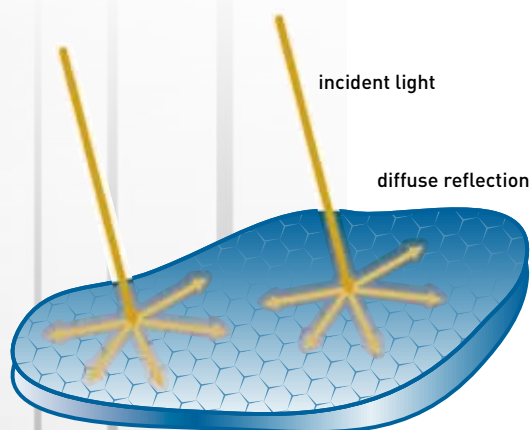
Besides the familiar fillers such as chalk and marble, many standard dispersion paints contain special fillers such as diatomite and synthetic fillers like precipitated calcium carbonate or aluminum silicate.

It turns out that when all of these special fillers are replaced with DORKAFILL® Pro_Void, ideally in combination with DORKAFILL® H, the paint formulations can produce a whole range of advantages. Using these refined kaolins has two important consequences. Firstly, the quality of the dispersion paint is just as good or even better. Secondly, because the pigment volume concentration increases, users can reduce the binder and/or pigment content in their formulations.

The key message is this: optimization of the filler content and the use of DORKAFILL® Pro_Void and DORKAFILL® H can substantially reduce the need for costly binders and pigments in the final formulations. In sample formulations created by the Dorfner Paint Applications Engineering team (ATC), DORKAFILL® Pro_Void and DORKAFILL® H reduce binder consumption by 20% and titanium dioxide usage by 8%, which equates to around five Euro cents per liter. These figures should be music to the ears of any raw material procurement organization.



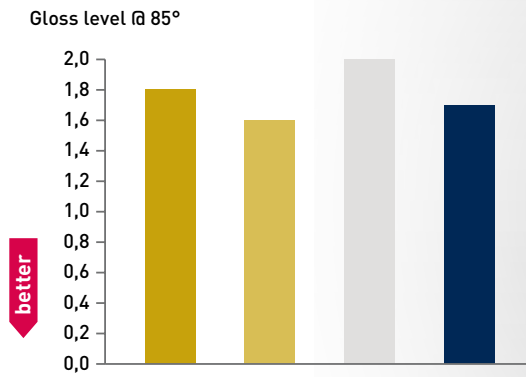
In many instances, substitution of functional fillers with multifunctional DORKAFILL® H and DORKAFILL® Pro_Void fillers reduces the need for binders and pigments.



The textured surface of DORKAFILL® Pro_Void results in diffuse reflection of light which is responsible for the matting effect in dispersion paint.

Avoid gloss

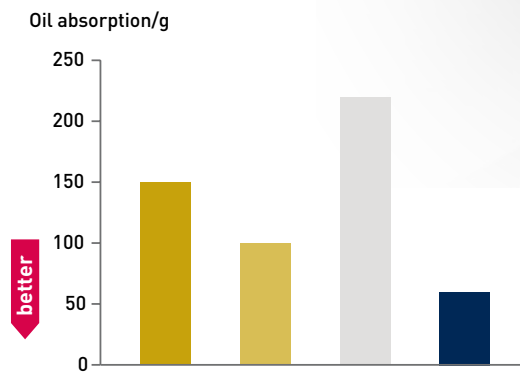
Besides delivering a whole range of other functions, DORKAFILL® Pro_Void has one outstanding feature: it is the perfect matting agent in dispersion paint. The coatings produced are non-reflective, non-glare and non-streaking. They stand up well to mechanical stress, can be repaired and have good wet and dry cleanability.



DORKAFILL® Pro_Void – an excellent matting agent

Cut binder consumption

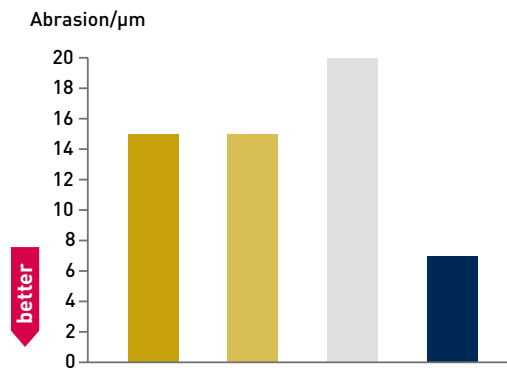
Oil absorption is used as an indicator for the binder consumption of fillers. When you look at the oil absorption of standard matting agents compared to DORKAFILL® Pro_Void, you find that consumption of expensive binders can be reduced by using this refined kaolin made by Dorfner.



DORKAFILL® Pro_Void – oil absorption in a class all by itself.

Improve wet scrub resistance

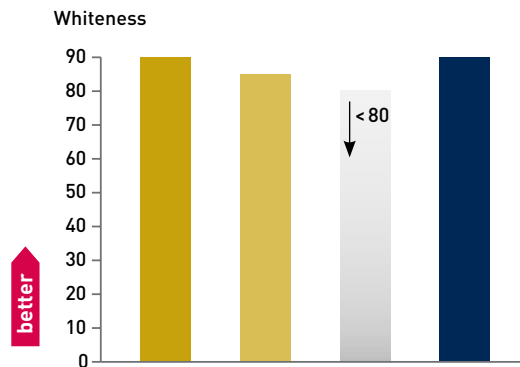
DORKAFILL® Pro_Void consists of hardened aluminum silicate platelets which blend perfectly into polymer-based coatings and significantly enhance the strength of the coating. The result is excellent wet scrub resistance. Even in super-critical formulations with an excess of binders, wet scrub resistance is not compromised.



The wet scrub resistance of DORKAFILL® Pro_Void is top-class.

Whitest white

Fillers should never impair the visual effect of titanium white (a white pigment used in dispersion paint), so the fillers themselves must be very white. DORKAFILL® Pro_Void is one of the “whitest” calcined kaolins on the market, and it fits perfectly with the requirement that dispersion paints deliver excellent hiding power.



Whiteness is another attribute which puts DORKAFILL® Pro_Void ahead of the rest.

- Diatomite 1
- Diatomite 2
- Diatomite substitute
- DORKAFILL Pro_Void

About Dorfner

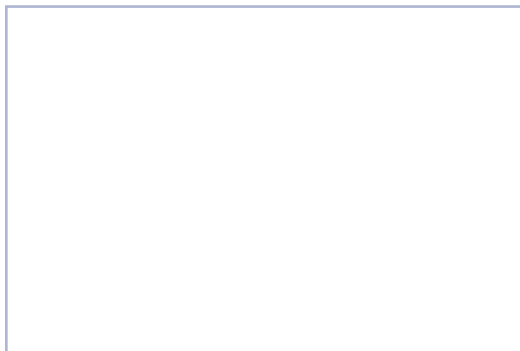


Assistance in the art of formulation

The Dorfner Paint Applications Engineering (ATC) team works hand in hand with manufacturers to optimize dispersion paint formulations. Regardless of whether the task at hand is to reduce production costs or enhance paint quality, the ATC team always makes a concerted effort to reconcile the two objectives and provide the best possible level of support to the customer.

The DORFNER Group specializes in the extraction and refining of minerals which are used as functional fillers for products in the paint, glass, paper, adhesives, construction materials and composites industry.

DORFNER extracts the raw materials from its own deposits. Highly sophisticated particle technology and proprietary processing techniques are then used to refine these materials and produce branded products such as DORSILIT® crystalline quartz sand, GRANUCOL® colored crystalline quartz sand, DORKAFILL® functional filling materials and high-grade paper kaolin products, all of which are seen by users as the embodiment of performance and quality. DORFNER's in-house development team and applications engineering services help companies large and small identify new and better ways of using the products. DORFNER also supports users as they develop innovative and economically lucrative formulations.



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