



STEASHIELD™ 10 AND MICA MU™ M2/1

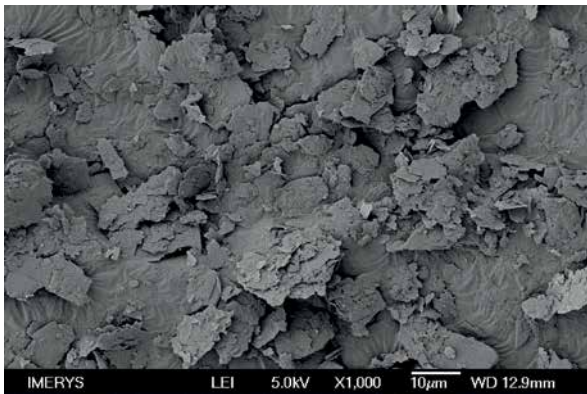
for high performance
stain blocking paints

- Excellent stain blocking performance
- Reinforced barrier effect
- Easy to formulate

SteaShield™ 10, a new, ultra lamellar talc, and Mica MU™ M2/1 mica, are highly effective stain blocking agents.

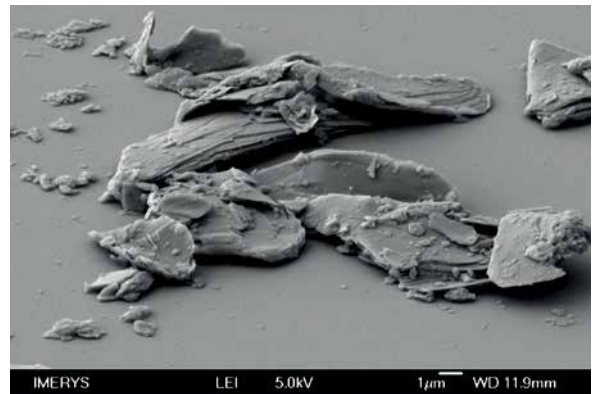
PROPERTIES OF STEASHIELD™ 10

- Ultra lamellar, 15µm top cut
- Brightness: Y=85.5 (Minolta CR400, illuminant D65/2°)
- Exceptional barrier effect
- Recommended for **stain blocking paints and barrier coatings** (see technical leaflet: Imerys SteaShield™ 10 ultra lamellar talc for barrier coatings).



PROPERTIES OF MICA MU™ M2/1

- Highly lamellar, 20µm top cut
- Brightness: Y=75 (ISO R457)
- Good barrier effect
- Recommended for **primer applications**

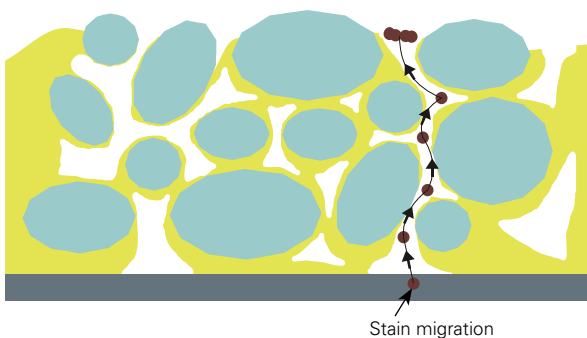


SteaShield™ 10 is ideal for finishing paints whereas Mica MU™ M2/1 is better suited for primer applications due to its higher yellow index.

Used at 8 to 15wt% in the formulation, SteaShield™ 10 and Mica MU™ M2/1, thanks to their lamellar particle shape, reinforce blocking properties of decorative paints and barrier protection over time.

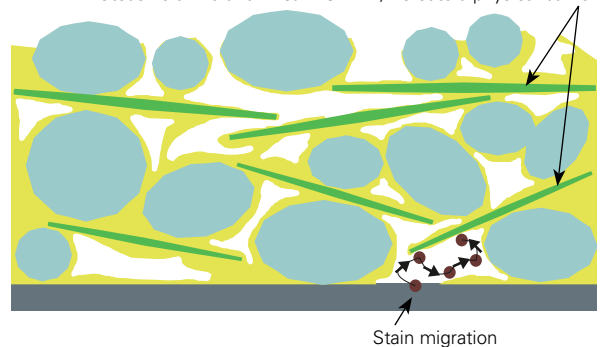
Stain migration over time

Traditional paint



Barrier concept paint

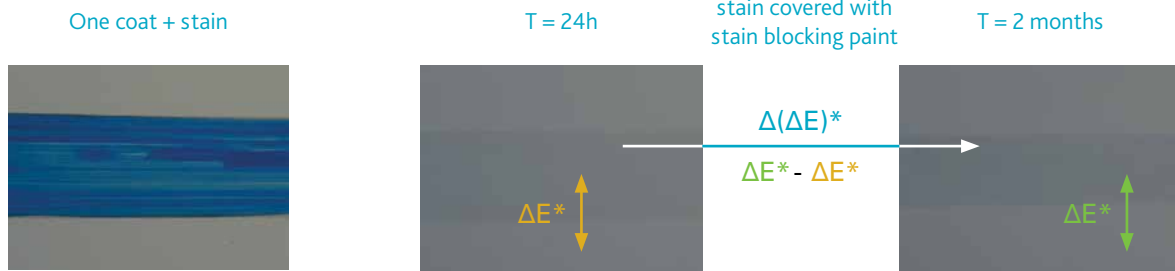
Thanks to their ultra lamellar particle shape, Steashield™ 10 and Mica MU™ M2/1 create a physical barrier



STAIN BLOCKING PERFORMANCE OVER TIME: METHOD

Test method in compliance with ASTM Standard D7514, 2009: "Standard Test Methods for Evaluating Ink Stain blocking of Architectural Paint Systems by Visual Assessment"

- Apply one coat of paint on a non-porous substrate (60 μ m wet thickness). Allow to dry for 24h.
- Make a series of solid stain lines perpendicular to the direction of the drawdown. Allow to dry for 24h. (stains tested: permanent marker, lipstick, water-based blue paint, mustard, coffee, oil, eosin).
- Apply the "stain blocking" paint as a topcoat (100 μ m wet thickness) perpendicular to the direction of the stains on the substrate.
- After 24h, make an initial assessment of ΔE^* between stained and non stained areas and repeat operation over time to evaluate stain blocking performance $\Delta(\Delta E^*)$.



- The lower the gap $\Delta(\Delta E)^*$, the better the stain blocking performance.



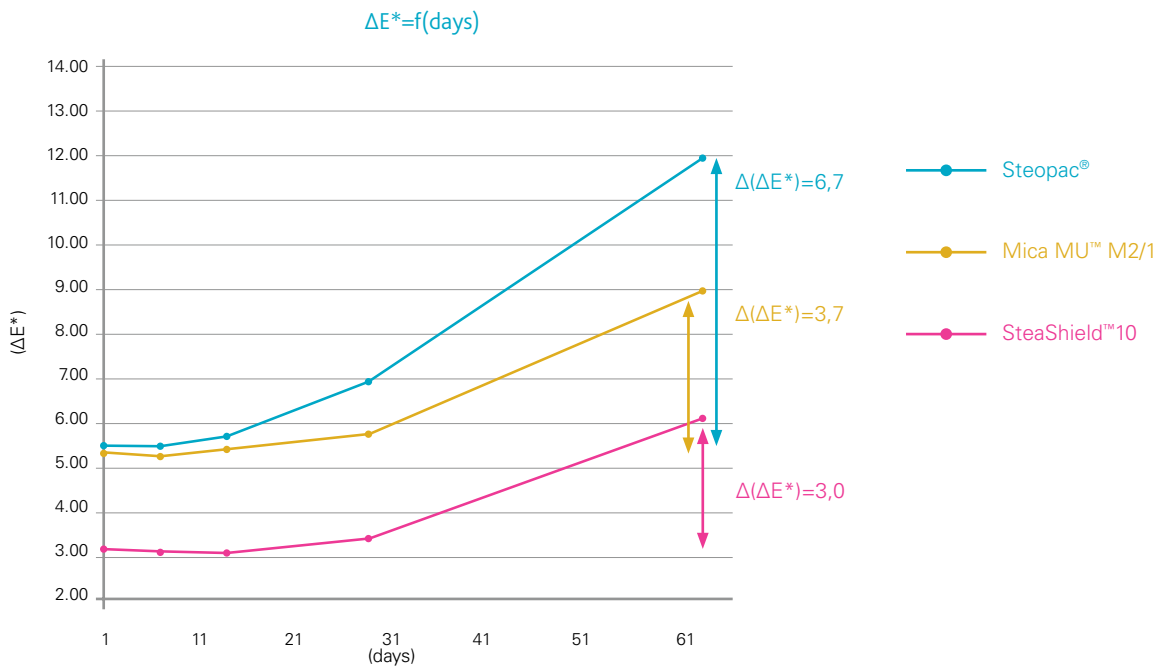
STAIN BLOCKING PERFORMANCE IN WATER-BASED DECORATIVE PAINT AT EQUIVALENT PVC/CPVC RATIO

Paint components (wt %)	Reference Steopac® talc (Imerys)	Mica MU™ M2/1 (Imerys)	SteaShield™ 10 (Imerys)
Water + additive	27.5	26.5	27.6
TiO ₂ TR 81	23.0	23.0	23.0
Carbonate mixture (D ₅₀ =5μ, 10μ)	20.0	18.0	20.4
Filler tested	10.0	10.0	10.0
Binder*	19.5	22.5	19.0
Total	100.0	100.0	100.0
Paint properties			
PVC (%)	64.6	60.2	65.4
CPVC (%)	54.5	50.6	54.9
PVC/CPVC ratio**	1.2	1.2	1.2
Density (g/ml)	1.65	1.62	1.66

*Performed in vinylic and styrene acrylic resins

**Tests performed at equivalent PVC/CPVC ratio to prevent impact of free binder content in formulation

STAIN-BLOCKING PERFORMANCE OVER TIME: EXAMPLE WITH PERMANENT MARKER STAIN



RESULTS

Optical paint properties (100μm wet thickness)	Steopac® talc	Mica MU™ M2/1	SteaShield™ 10
Whiteness L*	95.5	95.2	95.4
b* value	1.3	2.1	1.1
Opacity Y (%) - Contrast ratio Y	95.1	94.8	96.6
Stain blocking $\Delta(\Delta E)^*$	+	++	+++

In addition to its stain blocking properties, SteaShield™ 10 also significantly enhances opacity and provides good brightness.

VISUAL ASPECT OF COVERED STAINS AFTER TWO MONTHS



The above results demonstrate that SteaShield™ 10 and Mica MU™ M2/1 give superior opacity and barrier effect, and consequently better stain blocking performance whatever the nature of the stain and binder used.

CONCLUSION

Properties	Steopac®	Mica MU™ M2/1	SteaShield™ 10
Whiteness	++	+	++
Hiding power	+	+	++
Stain blocking	+	++	+++

SteaShield™ 10 and Mica MU™ M2/1

- improve barrier protection over time, significantly limiting stain migration
- are cost-effective, easy-to-formulate stain blocking solutions that function with all types of resins (solvent and water-based systems).

By virtue of their exceptional lamellarity, SteaShield™ 10 and Mica MU™ M2/1 also enhance anti-cracking, adhesion and UV protection in paints.



ABOUT IMERYS

Imerys is the world leader in mineral-based specialty solutions for industry. We transform a unique range of minerals to deliver functional specialty solutions that are essential to customers' products and manufacturing processes. With 300 scientists, eight research and technology centres, 21 market-focused regional laboratories and close ties with renowned research institutes, we lead the way in engineering minerals for industry.

ABOUT PERFORMANCE ADDITIVES

Performance Additives is a division of Imerys. With over a hundred years' experience in the minerals business, we offer customers engineered solutions derived from our portfolio of mica, talc and wollastonite. We refine and engineer these minerals through various—often proprietary—processes that influence their concentration, size, shape, structure and surface chemistry to obtain the exact properties our customers require. Each year, we process thousands of tons of materials to the highest standards of quality, consistency and reliability.

Our coatings team has in-depth knowledge of paint and coating processing, of how minerals interact in the application and a proven track record for developing new, value-added solutions for customers. Our product and applications laboratories are equipped with a full range of analytical and coatings-specific equipment enabling us to spearhead applications innovation as well as to provide customers with bespoke formulation services and technical support.

DELIVERING THE GOODS

With production sites in Australia, Belgium, Canada, France, Italy, Japan, Mexico, Spain and USA we are able to provide customers with optimised logistics and costs. Our sales administrators organise the optimum transport, warehousing and product delivery form to meet our customers' specific needs.

MEETING TODAY'S NEEDS, SECURING TOMORROW'S

We believe that running a successful business and sustaining quality of life and the environment go hand in hand. From implementing behaviour-based safety training to rehabilitating the land, we think it's important that future generations' needs are not compromised by our actions today.

OUR FUNDAMENTAL SUSTAINABILITY PRINCIPLES

- SAFETY - We promote the health and safety of employees, contractors, customers, neighbours and consumers through active caring.
- PARTNERSHIP - We seek to understand the issues that are important to our neighbours, and to make a lasting contribution to the communities in which we operate.
- ENVIRONMENTAL PROTECTION - We work to minimise our environmental footprint by using natural resources efficiently, preventing pollution, complying with applicable laws and regulations and continually improving our performance.
- ACCOUNTABILITY - We conduct business in an accountable and transparent manner, relying on external auditing and reporting to understand and reflect our stakeholders' interests.
- PRODUCT STEWARDSHIP - We are committed to ensuring that our products are safe for people and the environment, employing best available technology and following best-in-class procedures to ensure that our standards and practices meet or exceed safety requirements everywhere we do business.



We conduct life cycle assessments (LCA) at all our operations to quantify the environmental effects associated with producing our products from the mine to factory gate, and to identify areas for improvement. Likewise, we compile life cycle inventories (LCI) of the energy consumption, materials used and emissions generated by each of our product ranges. These LCI can be made available to customers and research institutions on request.