



Markerboard Writing Surfaces - U

Description

PolyVision's e³ environmental ceramicsteel™ surface is the industry's premiere ecologically intelligent whiteboard surface. Delivering exceptional quality and durability, combined with environmental responsibility, e³ environmental ceramicsteel surface is the first and only surface to achieve Cradle to Cradle™ Silver certification.

e³ environmental ceramicsteel is produced by means of an ISO 9001, ISO 14001 and OHSAS 18001 compliant, continuous coil-coating process, consisting of a steel core of 0,32 or 0,35 mm covered on both sides with thin enamel coatings.

Type e³ U is mainly used for magnet-retaining whiteboard applications.

Advantages

The e³ environmental ceramicsteel surface type e³ U can be ordered in three different colours. It combines an *excellent* dry erasability with a very high chemical resistance, scratch resistance, wear resistance, durability and product lifetime. Due to these properties the excellent erasability is maintained during the whole lifetime of the product. The surface itself is incombustible and provides no toxic fumes in case of fire. The surface allows messages to be attached by permanent magnets and can be delivered with ceramic screen printed patterns, lines, logo's or other information. Drymarker writings can be wiped dry without any problem. All other marker writings can be erased with an appropriate cleaner without problems as well. Due to the unique production process of e³ environmental ceramicsteel surface type e³ U, the ultra smooth surface shows significantly less distortion of reflected light (i.e. waviness, orange peel), enhanced visibility and better dry erasability.

Other features of e³ environmental ceramicsteel surface type e³ U are:

- Total amount of heavy metals cadmium, mercury, hexavalent chromium, and lead is less than 0,1 %.
- All coatings are free from arsenic and antimony.
- No Volatile Organic Compounds (VOCs).
- The steel core is made from minimum 50 % post-consumer and post-industrial waste.
- 99 % recyclable.

Specification example

The whiteboard surface should be made of light gauge steel coated in a continuous coil coating process with enamel coatings fired at temperatures of approximately 800 °C. The surface gloss expressed in gloss units GU should be 70 (+10/-5) when measured with a 20°-gloss meter according to ISO 2813 / ASTM D523.

The whiteboard surface should be 0,50 ± 0,05 mm thick, incombustible, suitable for magnetic attachment of messages, free from arsenic and antimony and the total amount of heavy metals cadmium, mercury, hexavalent chromium, and lead should be less than 0,1 %.

The surface should meet all requirements specified in (i) EN 14864 / ISO 28762, (ii) chapter 7.17 of the EEA (European Enameling Authority – UK, GE, AU, NL, BE) and (iii) PEI 1002.

The dry-erasability of drymarkers should be excellent during the lifetime of the product.

Therefore, the surface has to meet the following quality requirements:

Property	Specification	Value
Surface hardness	EN 101	Min. 5
Scratch resistance	ISO 15695	Min. 7 N
Wear resistance	ASTM C 501 (Abrasive S 33/1 kg/1.000 revs.)	Max. 0,1 g
Cold Acid Resistance	EN 14483-1-9 / ISO 28706-1-9	Min. A

Maintenance

Markerboards featuring e³ environmental ceramicsteel require only minimum maintenance.

Marker writing can be wiped clean. For further maintenance, contact PolyVision.

Properties of Standard *e³ environmental ceramicsteel™* surface for Whiteboard Applications (U)

PROPERTY	SPECIFICATION	VALUE
1. Thickness enamel top coatings (typical)	ISO 2178 / ASTM B499	±105 µm
2. Steel thickness		0,32 or 0,35 mm
3. Thickness back side enamel coatings (typical)	ISO 2178 / ASTM B499	±40 µm
4. Total thickness		0,50 ± 0,05 mm
5. Weight (typical)		ca. 2,9 to 3,2 kg/m ²
6. Colour deviation from standard	ISO 7724 / ASTM D2244-02	ΔE ₉₄ [*] = 1,5 max.
7. Gloss (typical)	ISO 2813 / ASTM D523 20° (ISO 2813 / ASTM D523 60°: indicative)	70 (+10/-5) GU (97 GU)
8. Waviness (Byk-Gardner Wave Scan 5+)	Wd (3-10 mm)	Max. 20
9. Surface hardness	EN 101	Min. 5
10. Scratch resistance	ISO 15695	Min. 7 N
11. Pencil hardness	ASTM D-3363	No scratch, whatever pencil is used
12. Wear resistance	ASTM C 501 (Abrasive S 33/1 kg/1000 revs.)	Max. 0,1 g
13. Impact resistance	ISO 4532 (< 2 mm)	Min. 20 N
14. Cold acid resistance	ISO 28706-1-9/EN 14483-1-9	Min. A
15. Solvent test: toluene, methylethylketone, ethylalcohol, petroleum, grease, oil, ethylacetate or xylene	Dip 25 °C, 1.000 hrs.	No change
16. Fire resistance	BS 476-6 / BS 476-7	Incombustible - Class 0
17. Colour stability	ASTM C 538	No colour change
18. Dry-erasability	PVNV 41803	Excellent
19. Erasability of the water based markers with water		Excellent
20. Erasability of permanent markers with methanol		Excellent
21. Durability	PVNV 41809 Rel. Gloss change Dry erasability	RG < 30 % Excellent
22. ISO 28762 / EN 14864: Vitreous and porcelain enamels – enamel coatings applied to steel for writingsurfaces – specification	ISO 28762 / EN 14864	Fulfilled
23. European Enamel Authority certified	EEA 7.17	Fulfilled
24. ISO 9001 certified	ISO 9001	Fulfilled
25. ISO 14001 certified	ISO 14001	Fulfilled
26. OHSAS 18001 certified	OHSAS 18001	Fulfilled
27. MBDC Cradle to Cradle certified	Cradle to Cradle Silver	Fulfilled
28. PEI 1002 compliant	PEI 1002	Fulfilled

All certificates, product and test requirements mentioned above are taken up in the PolyVision NV integrated management system. Several times, this management system has been audited successfully by the international accreditation body LLoyd's LRQA. It is our policy that this or an equivalent accreditation body will continue to audit our company with respect to continuous compliance with and continuation of these certificates and requirements. In this way we can assure our customers on a continuous base our high quality standard level in agreement with the international quality standards.

Conclusion

The *e³ environmental ceramicsteel* whiteboard surface is warranted under PolyVision's Forever Warranty to provide a lifetime of durability and superior performance, resulting in low maintenance costs and a high return on investment.



Environmental Policy: PolyVision strives for continuous improvement in all areas of environmental stewardship – responsible use of raw materials and natural resources, design processes and operation of all facilities – to protect, replenish, and restore the communities in which we live and serve.

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