



Markerboard Writing Surfaces - H

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 a continuous coil-coating process, consisting of a steel core of 0.013" to 0.019" covered on both sides with thin enamel coatings. Type e³ H is mainly used for magnet-retaining whiteboard applications.

Advantages

The e³ environmental ceramicsteel™ surface type e³ H can be ordered in three different colors. 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. There is less reflection on the e³ H surface than on the e³ U surface. Due to the unique production process of e³ environmental ceramicsteel surface type e³ H, 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 H 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 30 % 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 1500 °F (800 °C). The surface gloss expressed in gloss units GU should be 55 (+10/-5) when measured with a 20° gloss meter according to ISO 2813 / ASTM D523.

The whiteboard surface should be 0.023" ± 0.004" 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 PEI 1002.

The dry-erasability of drymarkers should be good 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, visit the website www.cleanmyboard.com or contact PolyVision.

PolyVision®

a Steelcase Company



Markerboard Writing Surfaces - L

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 a continuous coil-coating process, consisting of a steel core of 0.013" or 0.019" covered on both sides with thin enamel coatings. Type e³ L is mainly used for magnet-retaining whiteboard applications.

Advantages

The e³ environmental ceramicsteel surface type e³ L can be ordered in three different colors. It combines a good dry erasability with a very high chemical resistance, scratch resistance, wear resistance, durability and product lifetime. Due to these properties the good 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. Dry marker writings can be wiped dry. All other marker writings can be erased with an appropriate cleaner as well. There is less reflection on the e³ L surface than on the e³ H or e³ U surface. Due to the unique production process of e³ environmental ceramicsteel surface type e³ L, 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 L 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 30 % 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 1500 °F (800 °C). The surface gloss expressed in gloss units GU should be 25 (+10/-5) when measured with a 20°-gloss meter according to ISO 2813 / ASTM D523.

The whiteboard surface should be 0.023" ± 0.004" 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 good 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, please visit the website www.cleanmyboard.com or contact PolyVision.

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

PROPERTY	SPECIFICATION	VALUE
1. Thickness ceramic top coatings (typical)	ISO 2178 / ASTM B499	110 µm
2. Steel thickness		0.013" or 0.004"
3. Thickness back side enamel coatings (typical)	ISO 2178 / ASTM B499	40 µm
4. Total thickness		0.023" ± 0.004"
5. Weight (typical)		ca. 2.9 to 3.2 kg/m ²
6. Color 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)	55 (+10/-5) GU (92 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	EN 14483-1-9 / ISO 28706-1-9	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. Color stability	ASTM C 538	No color 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 % Good
22. EN 14864 / ISO 28762: Vitreous and porcelain enamels – enamel coatings applied to steel for writingsurfaces – specification	EN 14864 / ISO 28762	Fulfilled
23. European Enamel Authority	EEA 7.17	Fulfilled
24. MBDC Cradle to Cradle certified	Cradle to Cradle Silver	Fulfilled
25. PEI 1002 compliant	PEI 1002	Fulfilled

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.

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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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PolyVision®

A *stratodesk* Company

POLYVISION™

A Steelcase Company

4301 N. WOOD DR
OKMULGEE, OK 74447**MATERIAL SAFETY DATA SHEET**

May be used to comply with OSHA's Hazard Communication Standard
29 CFR 1910.1200. Standard must be consulted for
specific requirements.

IDENTITY (As used on Label and Log)

PORCELAIN ENAMEL STEEL

Section I	
Manufacturer's Name	Emergency Telephone No.
Polyvision	918-756-7392
Address (Number, Street, City, St., and Zip)	Telephone Number for Information
4301 N. Wood Drive	918-756-7392
Okmulgee, OK. 74447	Date Prepared: 1-09-1991

Section II-Hazardous Ingredients/Identity

Hazardous Components (Specific Chemical Identity, Common Name)

None Known

Section III-Physical/Chemical Characteristics

Boiling Point	NA	Specific Gravity (H ₂ O=1)	NA
Vapor Pressure	NA	Inhalation Point	NA
Solubility in Water	NA	Evaporation Rate	NA

Appearance and Odor

No Odor

Smooth Porcelain Finish

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
N/A	N/A	N/A	N/A

Extinguishing Media N/A**Special Fire Fighting Procedures** None Foreseen**Unusual Fire and Explosion Hazards** None Foreseen

Section V – Reactivity Data

Unstable		Conditions to Avoid
Stable	X	None Foreseen

Materials to Avoid**None Known****Hazardous Polymerization:****Conditions to Avoid**

May Occur		
May Not Occur	X	None Foreseen

Section VI – Health Hazard Data

Routes of Entry:	Inhalation?	Skin?	Ingestion?
	No	No	No
Health Hazard (Acute and Chronic)	None Known		

Signs and Symptoms of Exposure**N/A****Medical Conditions Generally Aggravated by Exposure: None Known****Emergency and First Aid Procedures N/A****Section VII-Precautions for Safe Handling and Use:****No Special Precautions****Waste Disposal Method: Comply with all local, state and federal regulations****Precautions to be taken in Handling and Storing:**

Use good industrial safety practices as required such as proper lifting techniques and hand and eye protection. Steel edges may be sharp and can cut if proper hand protection is not used. Wear proper eye protection when working with porcelain to prevent chips from damaging eyes.

Section VII: Control Measures: Respiratory Protection: N/A/**Protective Gloves:****Yes****Eye Protection:****Yes****Other Protective Clothing or Equipment****Work Hygiene Practices**

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee, expressed or implied, is made with respect to the information contained herein.