



ADVANCED  
MECHATRONICS  
SOLUTIONS, INC

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AUTOMATION, SMT & LEAN MANUFACTURING

Static Control Homogeneous Vinyl Floor Covering

# ESD TILE



ELITE

econo

## USA

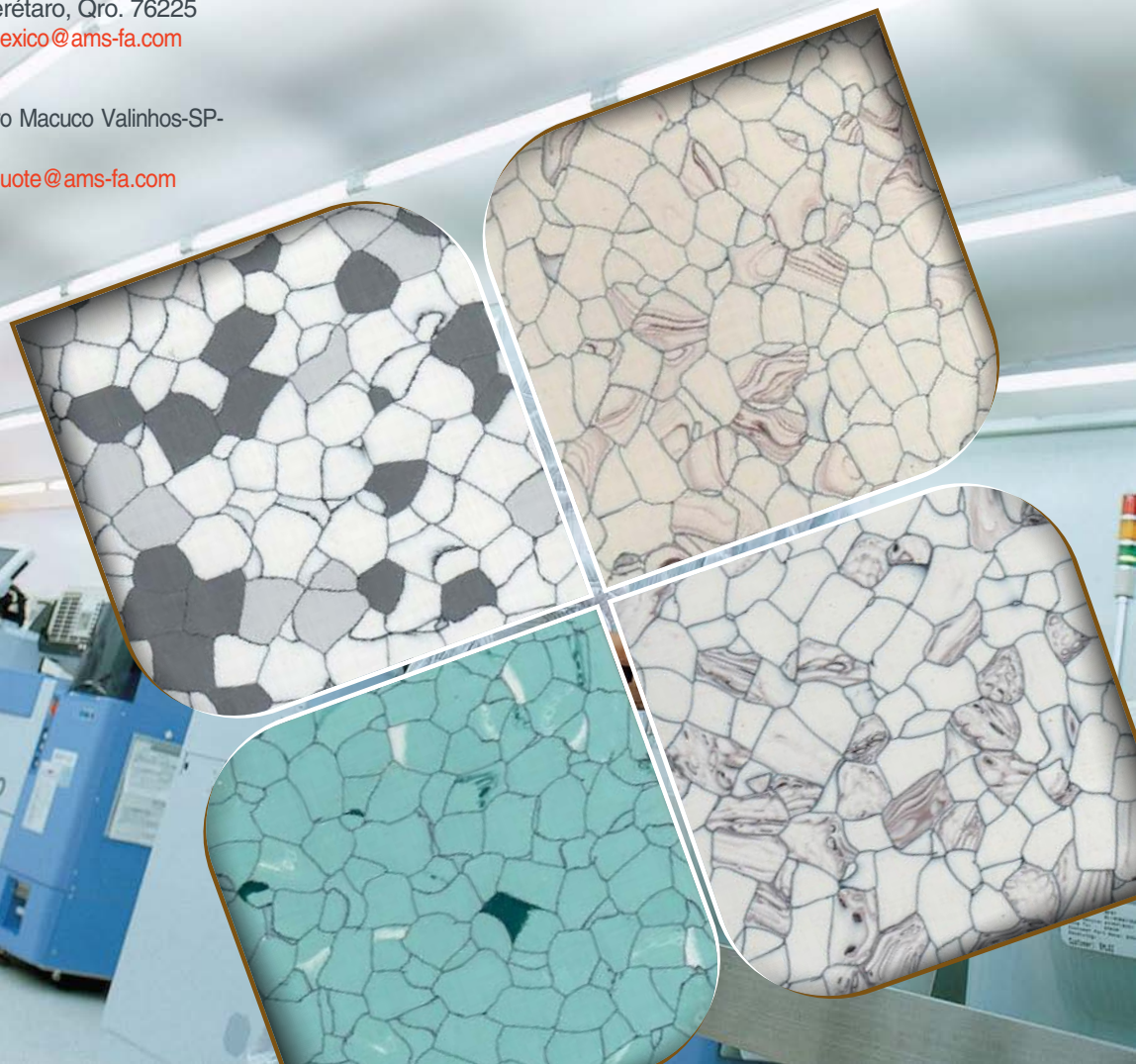
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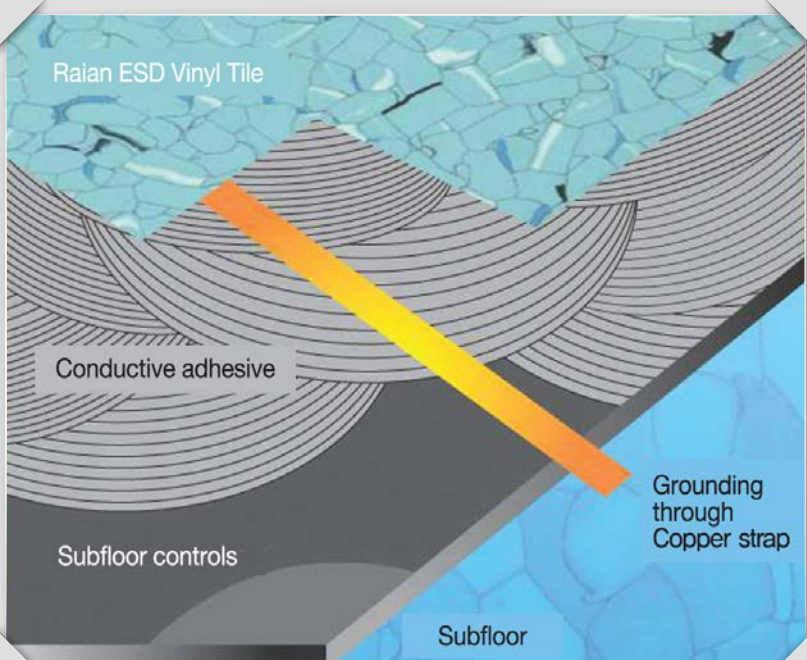


## **Raian ESD control Vinyl Tile**

Raian electro-conductive/static-dissipative vinyl tile is the best solution for ESD(Electro Static Discharge) protected floor. The Conductive or Dissipative properties are permanent and not depend on ambient humidity. High vinyl contents and high-pressure manufacturing process guarantee excellent physical properties like wear/indentation/abrasion resistance. Also, smooth but non-porous surface of tile have strong chemical resistance properties and cleaning & maintenance is easy. Tiles shall be fully flexible, of homogeneous structure, consisting of color PVC chips coated with a special conductive liquid and static pressed to obtain a solid PVC block from which the final tile is sliced.

Each tile should be printed on the back with Lot No, Resistance Mark and Direction for installation and to be die-cut to 600x600/610x610mm, with a 2.0/3.0mm thickness and specific weight.

## **ESD Floor Covering Structure**

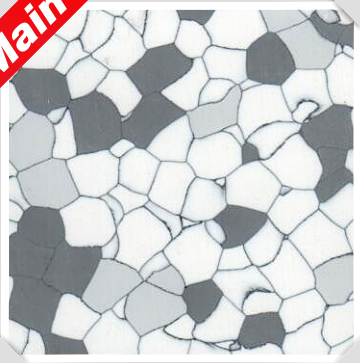


## **Seam Welding Rod**

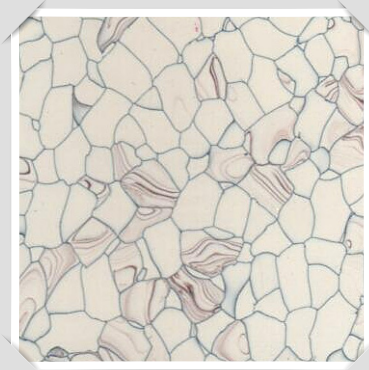
- HPR-101 Impata 
- HPR-102 White 
- HPR-103 Sea Mist 
- HPR-104 Norse Blue 
- HPR-105 Green 
- HPR-106 Beige 
- HPR-107 Gray 
- HPR-108 Red 
- HPR-109 Brown 
- HPR-110 Bluestone 



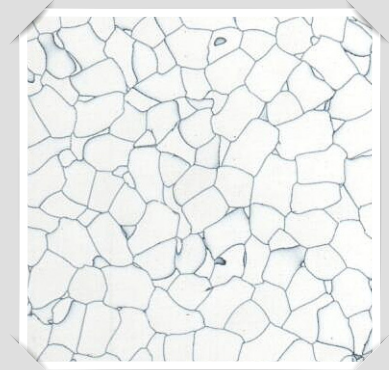
**Main**



HK-1101



HK-1102



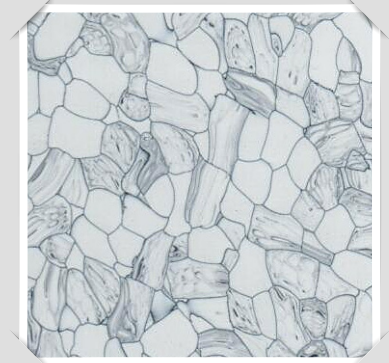
HK-1103



HK-1104



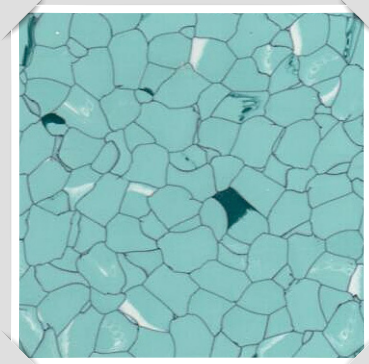
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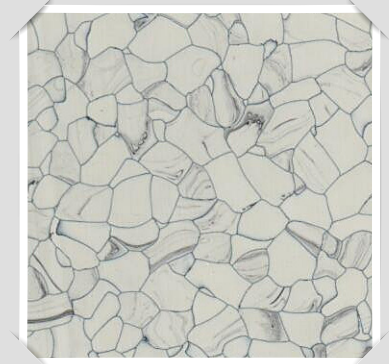
HK-2203



HK-1106

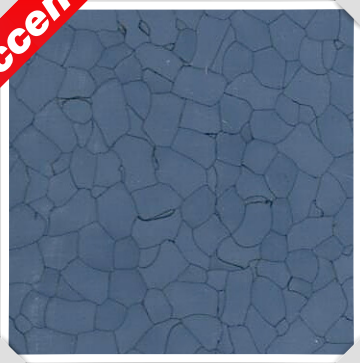


HK-2205

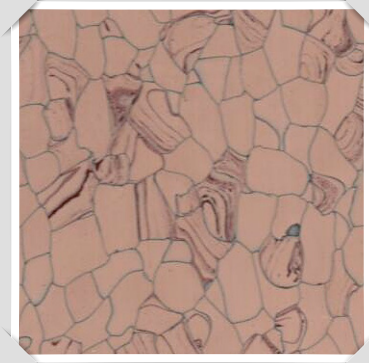


HK-1110

**Accent**



HK-1109



HK-2206



HK-1107

This is a production sample, which may vary slightly in shade from the Production LOT.

## Homogeneous ESD Vinyl Tile Technical Features

	Specification	Test Standard	Raian Homogeneous ESD Vinyl		
			Elite	Econo	
<b>FLOOR CLASSIFICATION</b>	Type of Floor covering	EN 649 ASTM F 1700 NFPA Life safety code 101 NFPA 99 Standard for health care facility	Homogeneous EC / SD Vinyl flooring Class 1 - Type A, Solid Vinyl Tile Class 1 - Interior Floor Finish Meets Standard Commercial : 34 / Industrial : 43 Meets the requirements		
	Floor Classification (Wear rating / Static load resistance) Underwriters Laboratories	EN 685 UL	Meets the requirements		
	Origin		South Korea	China	
	No of Color		12	12	
	Cleanroom Classification Outgassing : CVCVM	Federal standard 209 E ASTM E 594	Meets Class 1 Cleanroom Requirements CVCVM 2.65%		
<b>PHYSICAL FEATURES</b>	Tile Dimension Size	EN 427 90° Press cutting Bevel cutting	494x494 / 590x590 / 600x600 / 610x610 / 900x900 450x450 / 600x600 / 610x610	500x500 / 600x600 / 610x610 N.A	
	Dimensional Stability	ASTM F 536 : Size tolerance ( $\leq \pm 0.4$ mm / 305 mm)	$\leq \pm 0.4$ mm / 305 mm		
	Squareness	EN 434/FED. STD. NO 501a, M 6211	$< 0.25\%$ / $< 0.51$ mm / 305 mm		
	Wear Layer Thickness	ASTM F 540 : Square tolerance ( $< 0.25$ mm / 305 mm)	$< 0.25$ mm / 305 mm		
	Wear Layer Reinforcement / Glossy Surface Treatment Total thickness	EN 429 Heat Surface Melting Glossy Coating	2.00mm / 3.00 mm Heat Surface Melting Glossy Coating		
	Weight / m <sup>2</sup>	EN 428 ASTM F 386 : Thickness Tolerance ( $\pm 0.13$ mm)	2.00mm / 3.00 mm Meets Standard		
	Wear Resistance (Abrasion / Thickness Loss)	EN 430 EN 660-1 EN 649	2.00 mm : 3.10 kg/m <sup>2</sup> / 3.0 mm : 4.82 kg/m <sup>2</sup> $< 0.15$ mm Group P		
	Hardness	ASTM D 4060 (C5-17 Wheel, 1,000 g, 1,000 cycles)	70mg		
	Residual Indentation	ASTM D 2240 (Type D)	67		
	Static Load Limit	EN 433 / Din 51955	$< 0.04$ mm		
	Flexibility	ASTM F 1914 ( $< 8\%$ )	$< 8\%$		
	Castors Wheel Test	ASTM F 970 ASTM F 137	2.0T : $> 1,500$ pound / square inch ; Long term, 3.0T : $> 2,500$ pound / square inch ; Long term 25.4 mm mandrel without crack or breaking		
	Electrical Resistance	EN 425	No Damage		
	<b>ELECTRICAL FEATURE</b>	Static Generation	Din 51953 / EN 1081 ASTM F 150 / ESD F 150 / UL 779	EC $5.0 \times 10^4 < R < 10^5$ / SD $10^6 < R < 10^8$ EC $2.5 \times 10^4 \sim 1.0 \times 10^5$ / SD $1.0 \times 10^6 \sim 1.0 \times 10^9$	
		Static Decay Time	EN 1815 / DIN 54 345 AATCC 134 Mil B 81705C (5 kv to 20v) EN 100015 (CECC 00015) FTM 101 B Method 4046 ( $< 0.5$ Sec)	$< 100$ Volt with ESD Wax $< 100$ Volt with ESD Wax $< 0.1$ Sec with ESD Wax $< 2.0$ Sec with ESD Wax $< 0.01$ Sec with ESD Wax	
Reaction to Fire		Din 4102 / Onorm B3810 / Onorm B3800 BS 476 : Part 7, 1997 prEN 13501-1 prEN ISO9239-1 ASTM E 648 / NFPA 253 ASTM E 162 / ASTM E 84 / NFPA 225 ASTM E 662 / NFPA 258 Din 52612 / NFX 10021 DIN 52612 ASTM F 1514 ( $\Delta E < 8$ ave., max)	B1 (difficult to ignite) / Q1 (low smoke development) Class 2 Class B <sub>1</sub> S1 0.8 kw / m <sup>2</sup> Class 1 (1.08 W / cm <sup>2</sup> ) NFPA Class B / UBC Class II ( $< 75$ ) Passed ( $< 450D$ mc) 0.03 m <sup>2</sup> K/W Suitable - Max 30°C $< \Delta E = 8.0$		
<b>Chemical Resistance</b>	Chemical Resistance	EN 423 / DIN 51958 ASTM D 543 / ASTM F 925	Excellent ; Test Report available on request Excellent ; Test Report available on request		
<b>Slip Resistance</b>	Slip Resistance	Wet	Din 51130 / BGR181 (ZH1 / 571) ADA Requirements prEN 13893	R9 $> 0.6$ 0.89 μ	
	Slip Resistance	Dry	EN 13893	$> 0.3$	
<b>Light Resistance</b>	Color Fastness	EN 20105-B 02	$> 6$		
	Resistance to Light	ISO 105 B 02, Met.3 - DIN53389 ASTM F 1515 ( $\Delta E < 8$ ave., max)	7 $< \Delta E = 8$		
<b>Other Properties</b>	Impact Sound Reduction	EN 717 / 2	4 dB		
	Sound Absorption	ISO 140-8 / ISO 717	3 dB		
	Water Absorption	ASTM D 570	0.03% water weight gain		
	Ease of Decontamination Recyclable Formulation	DIN 25415-1 / ISO 8690	Excellent Yes No Carbon Contamination		