

Portofino



*Inspired By Nature,
Made Possible By...*



24x24

ELEPPCR24 *M*
ELEPPCR24L *P*



12x24

ELEPPCR1224 *M*
ELEPPCR1224L *P*



2x2 mosaic

ELEPPCRMOS22 *M*



12x12 basketweave

ELEPPCRWEAVEL *P*

36x36

ELEPPCR36 *M SO*
ELEPPCR36L *P SO*

18x36

ELEPPCR1836 *M*
ELEPPCR1836L *P*



2x10 bullnose

ELEPPCRBN210 *M*

48x48

ELEPPCR48 *M SO*
ELEPPCR48L *P SO*

24x48

ELEPPCR2448 *M SO*
ELEPPCR2448L *P SO*



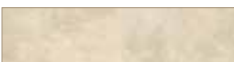
3x24 bullnose

ELEPPCRBN324 *M*
ELEPPCRBN324L *P*



12x12 herringbone

ELEPPCRMOSHER *M*



3x12

ELEPPCR312 *M*
ELEPPCR312L *P*



18x18
ELEPWCR18



10x30
ELEPWCR1030



10x30 bevel
ELEPWCR1030BEV



1x1 mosaic
ELEPWCRMOS11



10x30 shanghai warm
ELEPWCR1030SHA *SO*



10x30 trial warm
ELEPWCR1030TRI *SO*



2x10 torello
ELEPWCRTOR210



24x24

ELEPPDO24 *M*
ELEPPDO24L *P*



12x24

ELEPPDO1224 *M*
ELEPPDO1224L *P*



2x2 mosaic

ELEPPDOMOS22 *M*



12x12 basketweave

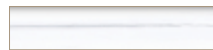
ELEPPDOWEAVEL *P*

36x36

ELEPPDO36 *M SO*
ELEPPDO36L *P SO*

18x36

ELEPPDO1836 *M*
ELEPPDO1836L *P*



2x10 bullnose

ELEPPDOBN210 *M*

48x48

ELEPPDO48 *M SO*
ELEPPDO48L *P SO*

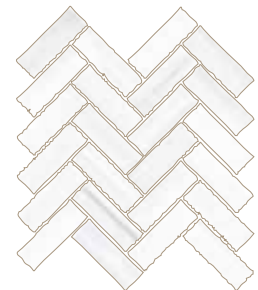
24x48

ELEPPDO2448 *M SO*
ELEPPDO2448L *P SO*



3x24 bullnose

ELEPPDOBN324 *M*
ELEPPDOBN324L *P*



12x12 herringbone

ELEPPDOMOSHER *M*



3x12

ELEPPDO312 *M*
ELEPPDO312L *P*



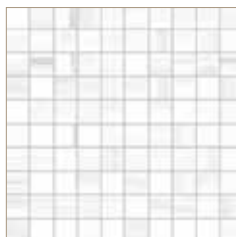
18x18
ELEPWDO18



10x30
ELEPWDO1030



10x30 bevel
ELEPWDO1030BEV



1x1 mosaic
ELEPWDOMOS11



10x30 shanghai cold
ELEPWDO1030SHA



10x30 trial cold
ELEPWDO1030TRI



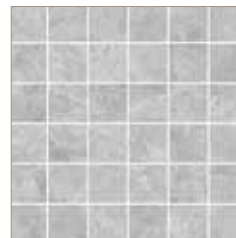
2x10 torello
ELEPWDOTOR210



24x24
ELEPPGR24 *M*
ELEPPGR24L *P*



12x24
ELEPPGR1224 *M*
ELEPPGR1224L *P*



2x2 mosaic
ELEPPGRMOS22 *M*



12x12 basketweave
ELEPPGRWEAVEL *P*

36x36
ELEPPGR36 *M SO*
ELEPPGR36L *P SO*

18x36
ELEPPGR1836 *M*
ELEPPGR1836L *P*



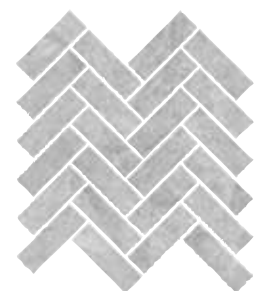
2x10 bullnose
ELEPPGRBN210 *M*

48x48
ELEPPGR48 *M SO*
ELEPPGR48L *P SO*

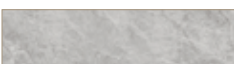
24x48
ELEPPGR2448 *M SO*
ELEPPGR2448L *P SO*



3x24 bullnose
ELEPPGRBN324 *M*
ELEPPGRBN324L *P*



12x12 herringbone
ELEPPGRMOSHER *M*



3x12
ELEPPGR312 *M*
ELEPPGR312L *P*



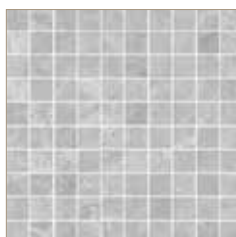
18x18
ELEPWGR18



10x30
ELEPWGR1030



10x30 bevel
ELEPWGR1030BEV



1x1 mosaic
ELEPWGRMOS11



10x30 shanghai cold
ELEPWGR1030SHA



10x30 trial cold
ELEPWGR1030TRI



2x10 torello
ELEPWGRTOR210



24x24

ELEPPVE24 *M*
ELEPPVE24L *P*



12x24

ELEPPVE1224 *M*
ELEPPVE1224L *P*



2x2 mosaic

ELEPPVEMOS22 *M*



12x12 basketweave

ELEPPVEWEAVEL *P*

36x36

ELEPPVE36 *M SO*
ELEPPVE36L *P SO*

18x36

ELEPPVE1836 *M*
ELEPPVE1836L *P*



2x10 bullnose

ELEPPVEBN210 *M*

48x48

ELEPPVE48 *M SO*
ELEPPVE48L *P SO*

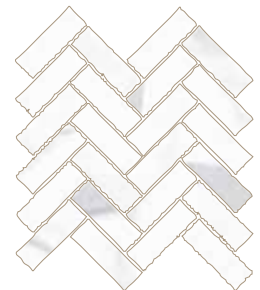
24x48

ELEPPVE2448 *M SO*
ELEPPVE2448L *P SO*



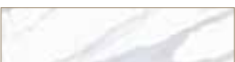
3x24 bullnose

ELEPPVEBN324 *M*
ELEPPVEBN324L *P*



12x12 herringbone

ELEPPVEMOSHER *M*



3x12

ELEPPVE312 *M*
ELEPPVE312L *P*



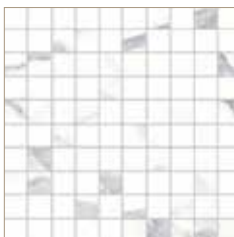
18x18
ELEPWVE18



10x30
ELEPWVE1030



10x30 bevel
ELEPWVE1030BEV



1x1 mosaic
ELEPWVEMOS11



10x30 shanghai cold
ELEPWVE1030SHA



10x30 trial cold
ELEPWVE1030TRI



2x10 torello
ELEPWVETOR210

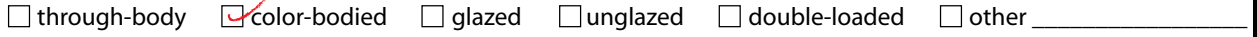
Suggested Applications



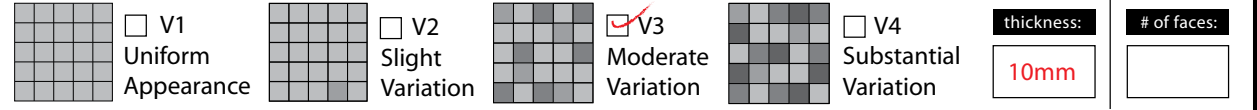
Installation Suggestions



Porcelain Type



Shade Variation



Slip Resistance



COF	WET		DRY		DCOF
	standard*	result	standard*	result	
accessible routes	.6		.6		0.42
ramps	.8		.8		

*Industry Standard/ADA Requirements



Values	Tile Classification
0 - 0.50	Questionable
0.50 - 0.60	Conditionally Slip Resistant
> 0.60	Slip Resistant

ASTM C-1028
DIN 51097/51130

DIN 51130	Typical Applications	Critical Angle
<input checked="" type="checkbox"/> R9*	3-10°	≥12°
<input type="checkbox"/> R10	10-19°	
<input type="checkbox"/> R11	19-27°	
<input type="checkbox"/> R12	27-35°	
<input type="checkbox"/> R13	>35°	

DIN 51097 Class	Typical Applications	Critical Angle
<input type="checkbox"/> A	Barefoot, but mainly dry aisles and walkways, dry changing areas	≥12°
<input type="checkbox"/> B	Shower rooms, pool surrounds, wet changing areas, disinfectant spray areas (plus all Class A areas)	≥18°
<input type="checkbox"/> C	Areas constantly under water, e.g. steps into pools, foot baths, inclined pool surrounds, jacuzzis (plus all Class A&B areas)	≥24°

Scratch Resistance



MOH'S SCALE **7**
UNI EN ISO 10545.6

Mineral

- Talc (Talc)
- Gypsum (Fingernail)
- Calcite (Penny)
- Flourite (Some Marbles)
- Apatite (Knife Blade)
- Microline (Glass, Glazed Tile)
- Quartz (Unglazed Porcelain)
- Topaz (Granite)
- Corundum (Ruby)
- Diamond (Diamond)

Industry standard ≤175mm²

Wear Resistance

PEI RATING
UNI EN ISO 10545.7

- Class 1: Walls only
- Class 2: Resid. floors w/minimal abrasive traffic.
- Class 3: Resid. interiors normal use and foot traffic.
- Class 4: Light-medium commercial applications.
- Class 5: Commercial applications.

Stain Resistance

ASTM C1378-04
UNI EN ISO 10545.14

- Removed after 5 minutes (hot water running)
- Removed by manual cleaning (weak detergent)
- Removed by mechanical cleaning (strong detergent)
- Removed by immersion (24 hrs in suitable solvent)
- Stain not removed

4,5

Water Absorption

ASTM C-373
UNI EN ISO 10545.3



Absorbs 0-.5%
Impervious
Interior/exterior
Frost Resistant



Absorbs .5-3%
Vitreous
Interior/exterior
Frost Resistant



Absorbs 3-7%
Semi-Vitreous
Indoor use only



Absorbs 7% +
Non-Vitreous
Indoor use only

Breaking Strength

ASTM C648
UNI EN ISO 10545.4



Industry standard should be greater than 250 lbs or 50 N/MM²

Facial Dimension

ASTM c499-09
UNI EN ISO 10545.02

	Standard	Tolerance	Result
flatness	±5mm	±.5%	
thickness	±6mm	±.5%	
straightness	±4.5mm	±.5%	
squareness	±5.4mm	±.6%	
sides L/W	±1.1mm ±4.5mm	±.5%	

Chemical Resistance

ASTM C650
UNI EN ISO 10545.13

Allowances for:

	result
acid	
bases	
chemicals	

Leed Information



REQUIREMENTS FOR COMMERCIAL INTERIORS/NEW CONSTRUCTION

Sustainable Sites	1 Point	Materials & Resources	1 Point	2 Points
Site selection SS CREDIT 1 Heat Island Effect-non roof Material with a solar reflectant index of at least 29.	<input checked="" type="checkbox"/>	M&R CREDIT 2 Construction Waste Management: Recycling salvaged construction waste in to new reusable materials.	50% <input type="checkbox"/>	70% <input type="checkbox"/>
Energy & Atmosphere EA CREDIT 4 Green Power: Products that optimize energy performance for floors and walls using thermal conductivity. BTU-FT	<input checked="" type="checkbox"/>	M&R CREDIT 4.1-4.2 Recycled Content: The sum of post consumer plus 1/2 of the pre consumer reps at least 10-20% of total value of materials.	10% <input type="checkbox"/>	20% <input checked="" type="checkbox"/>
Indoor Environmental Quality Low-Emitting Materials-Flooring Systems IEQ CREDIT 3.1-7 Green Cleaning: Reducing occupants exposure to hazardous cleaning chemicals.	<input checked="" type="checkbox"/>	M&R CREDIT 5 Regional Materials: Materials manufactured within 500 miles of the project site.	10% <input type="checkbox"/>	20% <input type="checkbox"/>
IEQ CREDIT 4.1 Low Emitting Adhesives: Products less than 65 G/L VOC	<input type="checkbox"/>	Innovation in Design ID CREDIT 1 Innovation in Design Measurable exemplary environmental performance.	1-5 Points	
IEQ CREDIT 4.3 Low Emitting Materials: Flooring systems.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

Type: Wall & Floor Porcelain

Product Line: Portofino (matte)

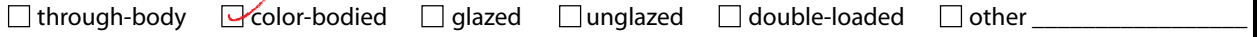
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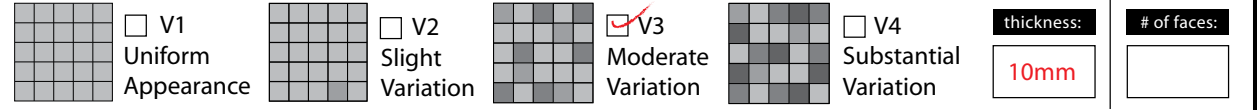
Installation Suggestions



Porcelain Type



Shade Variation



Slip Resistance



COF		DCOF		DIN 51097			
WET	DRY			Class	Typical Applications	Critical Angle	
accessible routes	standard* result	standard* result		<input checked="" type="checkbox"/> R9*	3-10°	<input type="checkbox"/> A Barefoot, but mainly dry aisles and walkways, dry changing areas	≥12°
ramps	.6	.6		<input type="checkbox"/> R10	10-19°	<input type="checkbox"/> B Shower rooms, pool surrounds, wet changing areas, disinfectant spray areas (plus all Class A areas)	≥18°
	.8	.8		<input type="checkbox"/> R11	19-27°	<input type="checkbox"/> C Areas constantly under water, e.g. steps into pools, foot baths, included pool surrounds, jacuzzis (plus all Class A&B areas)	≥24°
				<input type="checkbox"/> R12	27-35°		
				<input type="checkbox"/> R13	>35°		

*Industry Standard/ADA Requirements

Values	Tile Classification
0 - 0.50	Questionable
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ASTM C-1028
DIN 51097/51130

Scratch Resistance



Mineral	6. Microline (Glass, Glazed Tile)
1. Talc (Talc)	7. Quartz (Unglazed Porcelain)
2. Gypsum (Fingernail)	8. Topaz (Granite)
3. Calcite (Penny)	9. Corundum (Ruby)
4. Fluorite (Some Marbles)	10. Diamond (Diamond)
5. Apatite (Knife Blade)	

Industry standard ≤175mm²

MOH'S SCALE **5**
UNI EN ISO
10545.6

Wear Resistance

PEI RATING
UNI EN ISO
10545.7

- Class 1: Walls only
- Class 2: Resid. floors w/minimal abrasive traffic.
- Class 3: Resid. interiors normal use and foot traffic.
- Class 4: Light-medium commercial applications.
- Class 5: Commercial applications.

Stain Resistance

ASTM C1378-04
UNI EN ISO
10545.14

- 5: Removed after 5 minutes (hot water running)
- 4: Removed by manual cleaning (weak detergent)
- 3: Removed by mechanical cleaning (strong detergent)
- 2: Removed by immersion (24 hrs in suitable solvent)
- 1: Stain not removed

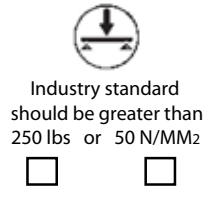
Water Absorption

ASTM C-373
UNI EN ISO
10545.3

<input checked="" type="checkbox"/> Absorbs 0-.5%	<input type="checkbox"/> Absorbs .5-3%	<input type="checkbox"/> Absorbs 3-7%	<input type="checkbox"/> Absorbs 7% +
Impervious Interior/exterior Frost Resistant	Vitreous Interior/exterior Frost Resistant	Semi-Vitreous Indoor use only	Non-Vitreous Indoor use only

Breaking Strength

ASTM C648
UNI EN ISO
10545.4



Facial Dimension

ASTM c499-09
UNI EN ISO
10545.02

	Standard	Tolerance	Result
flatness	±5mm	±.5%	
thickness	±6mm	±.5%	
straightness	±4.5mm	±.5%	
squareness	±5.4mm	±.6%	
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Chemical Resistance

ASTM C650
UNI EN ISO
10545.13

Allowances for:

	result
acid	
bases	
chemicals	

Leed Information



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Type: **Wall & Floor Porcelain**

Product Line: **Portofino (polished)**

