

# Announcing the good news!

TONALITY® panels have met or exceeded the following United States test standards!

- ✓ ASTM C67
- ✓ ASTM C126
- ✓ ASTM E330
- ✓ ASTM E84
- ✓ ASTM E136
- ✓ AAMA 509
- ✓ AAMA 501.1
- ✓ ASTM E331
- ✓ ASTM E283
- ✓ ASTM C880 / C666B
- ✓ ASTM C648
- ✓ ASTM C1354

**exo** terracotta

**TONALITY**  
NATURAL FACADES

## Testing Program - Result Summary

*exo terracotta* and *Tonality* have undertaken a battery of certified testing in Q1 2022 to demonstrate that the Tonality tile and attachment system is of the highest quality and meets or exceeds industry standards. Below is a summary of test results. For test reports, test standards, material comparisons, or other quality or compliance questions, please contact *exo* directly or your local sales representative. Independently certified test results valid through Q1 2026.

### ASTM C67 - Physical Properties

	Result		Range / Standard
Weight	7.04 lb/sf		
Modulus of Rupture	2,281 psi		
Compressive Strength	3,212 psi (mean) 2,895 psa (min)		
Absorption, cold water	2.8%		
Absorption, 5hr boil	4.6%		
Freezing and Thawing	No cracking, disintegration, or weight loss		
Dimensions			
Face Height	+/- 0.020"	Meets Standard	+/- 0.0625"
Face Length	+/- 0.109"	Meets Standard	+/- 0.15625"
Warpage			
Face	+/- 0.018"	Meets Standard	+/- 0.15625"
Side	+/- 0.063"	Meets Standard	+/- 0.15625"
End	+/- 0.024"	Meets Standard	+/- 0.15625"
Out of Square	+/- 0.033"	Meets Standard	+/- 0.09375"
Shell and Web Thickness	0.476" (12.1mm)		
Length Change	<0.0000in/in		
Breaking Load, 61.5" span			
Ultimate Failure	213 lbs		
Per unit width	17.6 lbs/in		
Imperviousness	No staining		
Chemical Resistance	No changes in texture or color		
Autoclave Crazing	None observed		
Opacity	No staining through glaze observed		

### ASTM C126 - Scratch Resistance and Hardness

	Result
Scratch Resistance	
Gloss Panel	>7, ≤8 MOHS
Matt Panel	>3, ≤4 MOHS

### ASTM E330 - Static Air Pressure Structural Performance

	Result	Range
Positive Pressure	175 psf	N/A
Negative Pressure	175 psf	N/A

### ASTM E84 - Surface Burning Characteristics

	Result	Range
Flame Spread	0	0-25 (A), 26-75 (B), 76-200 (C)
Smoke Development	5 Class A	0-450 (A, B, C)

### ASTM E136 - Combustibility

	Result	Range
748° C Furnace	No flaming Pass	N/A

### AAMA 509 - Cavity Ventilation & Water Management

	Result	Range	
Back Ventilation	>10	0-11	A higher result is a positive evaluation
Water Penetration	1	0-11	A lower result is a positive evaluation

AAMA 509 is inclusive of the following test standards:

- AAMA 501.1 - Water Penetration
- ASTM E331 - Water Penetration
- ASTM E283 - Air Leakage

### ASTM C880 / C666B - Flexural Strength with Freeze-Thaw

	Result	Range
Visual Evaluation	No Breakage or Visual Degradation	
Flexural Strength		
Unexposed Control	1,928 psi	N/A
Post-100 Cycle Exposure	1,981 psi	N/A

### ASTM C648 - Breaking Strength

	Result	Range
Breaking Strength	980 lbs	N/A

**ASTM C1354 - Anchorage Strength**

	Result	Range
Direct Tensile		
Single Rail Hook (Panel Edge)	257 lbs	N/A
Dual Rail Hook (Panel Center)	442 lbs	N/A
	Result	Range
Shear (Gravity)		
Single Rail Hook (Panel Edge)	685 lbs	N/A
Dual Rail Hook (Panel Center)	2,331 lbs	N/A