

SAINT-GOBAIN SOLAR GARD LLC TEST REPORT

SCOPE OF WORK

JIS Z 2801/ISO 22196:2011 - Measurement of antibacterial activity on plastics and other non-porous surfaces

PRODUCT:

4mil Antimicrobial Film Lot# 5404071

REPORT NUMBER

104578335COL-001

ISSUE DATE

12-FEBRUARY-2021

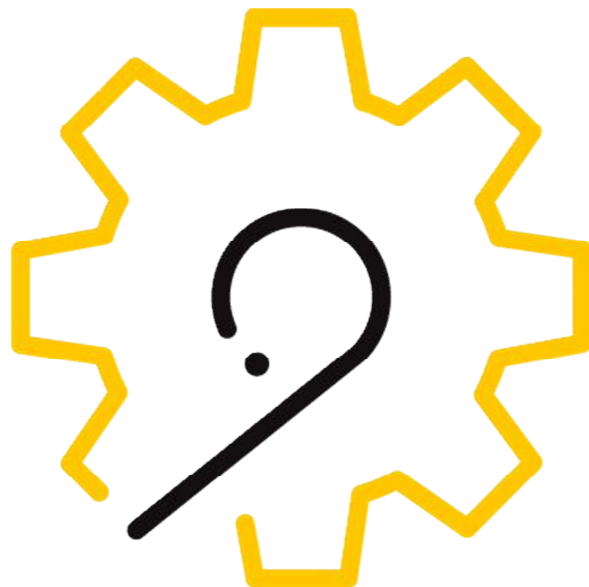
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DOCUMENT CONTROL NUMBER

GFT-OP-10h (6-July-2017)

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MICROBIOLOGICAL PERFORMANCE TEST REPORT

Client		Saint-Gobain Solar Gard LLC 4540 Viewridge Avenue San Diego, CA 92123
Project No.		G104578335
Sample	Product	4mil Antimicrobial Film
	Model	Lot# 5404071
	Identification No.	COL2101271609-001
	Date Received	January 27, 2021
	Condition	New/Good
	Production or Prototype	Production
Procedural	Tested By	Allison Coyle
	Reviewer	Nicholas Unger
	Dates Tested	February 1, 2021 – February 10, 2021
	Report Date	February 12, 2021
Standard	JIS Z 2801/ISO 22196:2011 - Measurement of antibacterial activity on plastics and other non-porous surfaces	

Test Parameters:

Organism	ATCC No	Initial Concentration
Escherichia Coli	8739	3.72x10 ⁵
Staphylococcus aureus	6538	7.97x10 ⁵

Test Inoculum Volume	Viable E. coli in Inoculum	Viable S. aureus in Inoculum	Polymer Type	Polymer Thickness
0.4 mL	3.72x10 ⁵	7.97x10 ⁵	Para Film	0.127mm

Test Parameter	Definition of Term
U₀	Is the average of the common logarithm of the number of viable bacteria, in cells/cm ² recovered from the untreated test specimens immediately after inoculation.
U_t	Is the average of the common logarithm of the number of viable bacteria, in cells/cm ² recovered from the untreated test specimens after 24 h.
A_t	Is the average of the common logarithm of the number of viable bacteria, in cells/cm ² recovered from the treated test specimens after 24 h.
Antibacterial Activity Value	Is calculated utilizing the following equation: $(U_t - U_0) - (A_t - U_0) = U_t - A_t$

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MICROBIOLOGICAL PERFORMANCE TEST REPORT

1. Lot# 5404071 Results at 1 Minute

S. aureus Results	
Test Parameter	Result
<i>Initial U₀</i>	5.90
<i>24 Hr U_t</i>	4.36
<i>24 Hr A_t</i>	3.85
Antibacterial Activity Value	0.51
Percent Reduction	69.1%

E. coli Results	
Test Parameter	Result
<i>Initial U₀</i>	5.71
<i>24 Hr U_t</i>	5.10
<i>24 Hr A_t</i>	3.71
Antibacterial Activity Value	1.39
Percent Reduction	95.9%

2. Lot# 5404071 Results at 30 Minutes

S. aureus Results	
Test Parameter	Result
<i>Initial U₀</i>	5.90
<i>24 Hr U_t</i>	4.36
<i>24 Hr A_t</i>	3.65
Antibacterial Activity Value	0.71
Percent Reduction	80.5%

E. coli Results	
Test Parameter	Result
<i>Initial U₀</i>	5.71
<i>24 Hr U_t</i>	5.10
<i>24 Hr A_t</i>	3.47
Antibacterial Activity Value	1.63
Percent Reduction	97.7%

3. Lot# 5404071 Results at 2 Hours

S. aureus Results	
Test Parameter	Result
<i>Initial U₀</i>	5.90
<i>24 Hr U_t</i>	4.36
<i>24 Hr A_t</i>	2.82
Antibacterial Activity Value	1.54
Percent Reduction	97.1%

E. coli Results	
Test Parameter	Result
<i>Initial U₀</i>	5.57
<i>24 Hr U_t</i>	5.01
<i>24 Hr A_t</i>	2.67
Antibacterial Activity Value	2.34
Percent Reduction	99.5%

MICROBIOLOGICAL PERFORMANCE TEST REPORT

4. Lot# 5404071 Results at 8 Hours

S. aureus Results	
Test Parameter	Result
<i>Initial U₀</i>	5.90
<i>24 Hr U_t</i>	4.36
<i>24 Hr A_t</i>	2.62
Antibacterial Activity Value	1.74
Percent Reduction	98.2%

E. coli Results	
Test Parameter	Result
<i>Initial U₀</i>	5.57
<i>24 Hr U_t</i>	5.01
<i>24 Hr A_t</i>	0.80
Antibacterial Activity Value	4.21
Percent Reduction	99.9%

Note: Antibacterial Activity Values are presented in Log form as per standard requirements. A value of 1.00 would equate to a 90% reduction. A 2 would be 99%, a 3 99.9% and so forth.

Test Performed by:



Allison Coyle
Chemist
Columbus Office

Report Approved by:



Nicholas Unger
Staff Engineer
Columbus Office