General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: 77 Free St. Portland, ME		
Total Square Footage of Proposed Structure/Area: 13,350 sf.	Square Footage of Lot: .341 acres / 14,853 sf.	
Tax Assessor's Chart, Block & Lot Chart# Block# Lot# 037 H013	Applicant *must be owner, Lessee or Buyer* Name BW Stadium, LLC Address PO Box 10417 City, State & Zip Portland, ME 04104	Telephone: Alec Altman 914-261-4440
Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name Kaplan 504 LLC Address 49 Ocean Ave City, State & Zip Portland, ME 04103	Cost Of Work: $ 250,000 C of O Fee: $ 2,520 Total Fee: $ 2,520

Current legal use (i.e. single family) Assembly A-2 – The Stadium Restaurant Bar.
If vacant, what was the previous use? _____
Proposed Specific use: Restaurant
Is property part of a subdivision? _____ If yes, please name _____
Project description:

Contractor's name: Owners Representative - Project Resources
Address: PO Box 661 253 Main St.
City, State & Zip Yarmouth, ME 04096 Telephone: _____
Who should we contact when the permit is ready: Dale Akely Telephone: 207-831-1180
Mailing address: Same

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature: _____ Date: 6/19/09

This is not a permit; you may not commence ANY work until the permit is issue

DayMatero studio

100 Front Street
Top Floor
Bath, Maine US 04530
207.671.6819
daymatero.com

June 19, 2009

Mr. Chris Hanson
Code Enforcement Officer
City of Portland, Maine
389 Congress Street
Portland, ME 04101

Re: Bingas Wingas at the Stadium – 77 Free Street
General Building Permit Application, Accessibility Building Code Certificate, Certificate of Design

Dear Chris,

Please find the enclosed applications for the Bingas Wingas at the Stadium interior fit-out and minor exterior work at 77 Free Street in Portland. The drawings are included via separate cover. We met to review this project recently, and along with comments from the State Fire Marshal's office, the drawings have been revised based on those meetings. Most significantly, the basement assembly space has been relocated to the Free Street side of the building with an egress directly to the street without converging with Port City Music.

This set is also being reviewed by the State Fire Marshal's Office, any comments they have will be forwarded to you for your information.

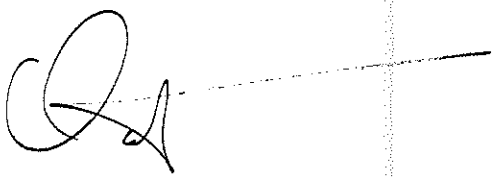
We recently presented to the Portland Historic Preservation Board. The board approved the storefront windows and doors, with the exception that the color and glazing materials be reviewed and approved by staff. The exterior work, including the banners, LED sign, and awning were tabled until the July 8 meeting. We are requesting that the general construction project be reviewed, including the storefront windows and doors, and will provide additional information on the banners, awnings, and signs after Historic Preservation review and response.

Also attached, please find information regarding the proposed smoker to be installed in the basement as well as information on two storefront glazing systems to be installed. Exterior wall renovation is not part of the scope of work for this project, but storefront windows/doors will be installed and information regarding their U-factors are included.

Enclosed applications (and check in the amount of $2,520) include the General Building Permit Application, Certificate of Design, and Accessibility Building Code Certificate.

Thank you for your help in the review of this project.

Sincerely,



David Matero, AIA, LEED AP
207.671.6820

Cc: Alec Altman, Mike Harris, Dale Akely

DayMatero studio

100 Front Street
Top Floor
Bath, Maine US 04530
207.671.6819
daymatero.com

June 12, 2009

Chris Hanson
City of Portland, Maine
389 Congress Street
Portland, ME 04101

Re: Bingas Wingas at the Stadium – Smoker
77 Free Street

Dear Chris,

Following is information regarding the smoker proposed to be installed in the basement of 77 Free Street, currently The Stadium restaurant:

The smoker is an Ole Hickory Pit, model SSE. The unit is designed to cook/smoke meat at an inside temperature between 100° and 325° F. It has an automatic feature that electrically shuts down the unit if the cooking chamber temperature reaches 350° F, this must be reset manually. According to the manufacturer, there is such a low transfer of heat for this unit that the clearances to combustible and non-combustible surfaces are indicated for maintenance and repair clearances only. During testing, the exterior of the unit reached temperatures of 87° to 92° F.

The minimum clearances indicated on the unit are 2" from the left side, 18" from the right side and 18" from the back, and the unit is installed meeting or exceeding these limitations. The unit is allowed to be installed on a combustible floor, but in this case it is installed on a bare concrete slab. The manufacturer noted that most owners remove the casters so that it can not be moved once it has been hard-wired/piped. The casters add 6 ½" to the height of the unit.

The 4" vent pipe will be piped similar to a wood stove, although the temperature inside the pipe is lower than a wood stove. The vent pipe actually vents smoke from the bottom of the fire box because the smoke is used for cooking. The temperature of the venting smoke is well below 175° according to the manufacturer.

The owner chose to purchase this unit with a smoke evacuator system that is piped to a separate 10" flue. The purpose of this system is to remove smoke from the front-loading area of the unit once the doors are opened to prevent excess smoke from escaping into the basement. Adequate makeup air is required and is being designed by the mechanical subcontractor.

The basement has been separated from the restaurant with a 1 hour rated wall and floor assembly. The building is also fully sprinklered.

The city of Portland has an ordinance that smoke shall not be emitted at a density in excess of 20% opacity level. Ole Hickory Pits omits a 5% opacity rating, well below the ordinance.

The unit SSE was tested by Intertek, the world's largest independent testing agency and passed ANSI Z83.11/CSA 1.8, 2002 Standard for Gas Food Service Equipment and ANSI/NSF 4-1997 Commercial Cooking, Rethermilization and Powered Hot Food Holding and Transport Equipment. A copy of the authorization to mark is attached to this letter.

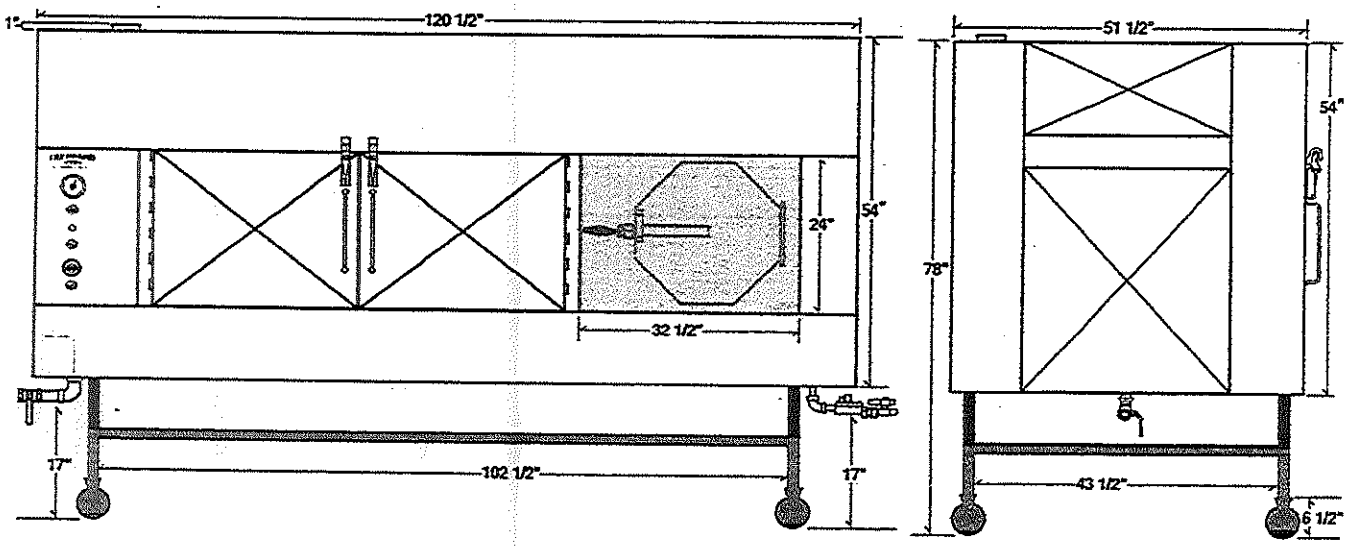
Feel free to contact me if you have any questions, I can be reached at 207-671-6820. The manufacturer of this unit is very helpful and would be happy to speak with you if you have additional technical questions. Their phone number is 800-223-9667, ask for Margaret.

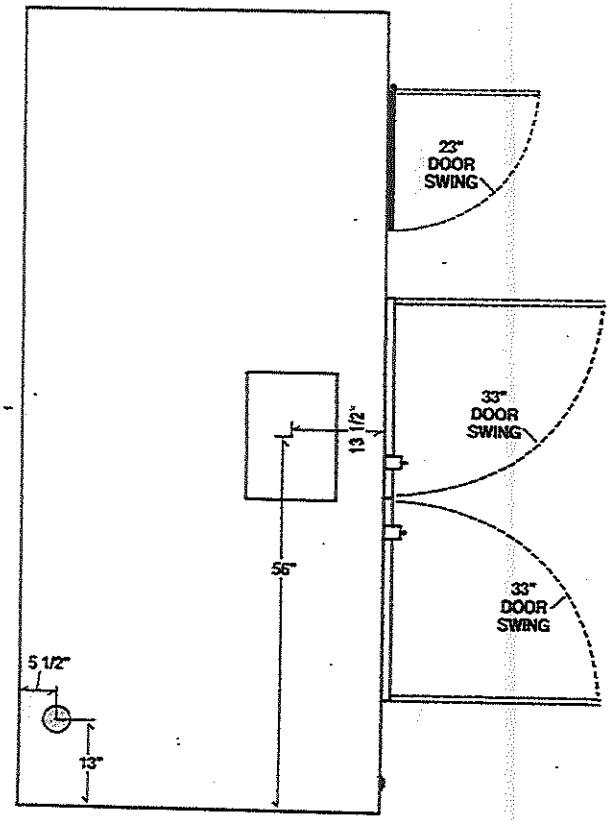
Sincerely,

David Matero, AIA, LEED AP
Principal
david@daymatero.com
207.671.6820

Copy: Ron Peaslee, State Fire Marshal
Captain Keith Gaurtreau, Portland Fire Prevention Officer
Dale Akely, Project Resources, Inc
Alec Altman, Owner

Model SSE





Construction: *Heavy Duty 18 Gauge Steel Interior (100% welded & inspected seams) Tubular Steel Frame. 22 gauge stainless steel exterior. Mineral Wool Insulation rated 1200 degrees F. (contains no asbestos or fiberglass)*

Electrical: *110 Volts, 60HZ. Single Phase. 15 Amp - AVOID NON-GROUNDED EXTENSION CORDS.*

Gas Burner: *65,000 BTU Burner with Electronic ignition. available for L.P. or Natural Gas.*

Firebox: *Two (2) regular fireplace size logs will last for up to 6 hours of cooking. Air over firebox circulation.*

Temperature Range: *Thermostat control range 100 degrees F. to 325 degrees F.*

Upper Limit Control Switch: *Extra Safety Feature.*

Dial Thermometer: *3 1/2" Diameter*

Heavy Duty Foot Switch: **Rotisserie Advance.**

Casters: Four (4) Heavy Duty, FTL Approved.

Convection System: *One (1) 1/4 HP motor, 10" fan blade provides a mix of both heat and smoke for product consistency.*

Flue: *4" diameter.*

Grease Drain: *2" Pipe with 2" Ball Valve.*

Weight: 2350 lbs. uncrated.

Rotisserie: *18 Rods, 12" X 30", 75 Sq. Ft. Cooking Surface. Nickel-chrome (stainless available at extra cost) Removable for easy cleaning.*

Rotisserie Drive: *Heavy Duty 1/4 HP Motor - long lasting chain drive system utilizing gear reduction.*

Intertek ETL SEMKO

AUTHORIZATION TO MARK

This authorizes the application of the Certification Marks shown below to the Product Covered (also to the multiple listee model identified on the correlation page of the Listing Report where applicable) when made in accordance with the Description and under the conditions set forth in the Certification Agreement and Listing Report. This document is not valid until signed and dated.

Applicant: OLE HICKORY PITS
333 North Main
Cape Girardeau, MO 63701 USA

Contact: Mr. David Scherer Phone: (573) 334-3377 Fax: (573) 334-6512

Manufacturer: OLE HICKORY PITS
333 North Main
Cape Girardeau, MO 63701 USA

Party Authorized To Apply Mark: Same as Manufacturer

Report Issuing Office: Arlington Heights, IL 60005 USA

Report No.: 550536

Product Covered: Gas Bar-Be-Que pits, Models EL, EL-ED, ELIB, EL-EW, ELEX, ELEC, ELVS, SDL, SDLX, SSE, SSG, SSI, SSJ, SSJ-AE, SSJ-EW, SSL, SSM, SRO, SSO, SSRD, VS3 and VS4.

Description: The products covered by this report are cord connected, gas Bar-Be-Que Pits ignited by either a natural or liquid petroleum gas ignition system. Designed to heat and cook with gas, using small amounts of wood to enhance food flavor. All models can be used outdoors when provided with cover over the controls, except for the model ELEC which must be indoors or under cover.

Standard(s): Standard for Gas Food Service Equipment (ANSI Z83.11/CSA 1.8, 2002) and Commercial Cooking, Rethermilization and Powered Hot Food Holding and Transport Equipment (ANSI/NSF 4 - 1997).

INTERTEK ETL C US LISTED

Authorized by _____
William T. Starr, Certification Manager

Date: July 18, 2005

Control Number: 77354

This document supersedes all previous Authorizations to Mark for the noted Report Number.

Intertek Testing Services NA Inc.
165 Main Street, Cortland, NY 13045
Telephone 800-345-3851 or 607-753-6711, Fax 607-756-6699

State of Maine
Department of Public Safety
Construction Permit

Reviewed for Barrier Free

Sprinkled
Sprinkler Supervised

 # 18477

BINGAS WINGAS AT THE STADIUM
Located at: 77 FREE ST.
PORTLAND
Occupancy/Use: ASSEMBLY CLASS B

Permission is hereby given to:
BW STADIUM LLC

PO BOX 10417
PORTLAND, ME 04104

to construct or alter the afore referenced building according to the plans hitherto filed with the Commisioner and now approved. No departure from application form/plans shall be made without prior approval in writing. This permit is issued under the provision of Title 25, Chapter 317, Section 2448 and the provisions of Title 5, Section 4594 - F. Nothing herein shall excuse the holder of this permit for failure to comply with local ordinances, zoning laws, or other pertinent legal restrictions. Each permit issued shall be displayed/available at the site of construction.

This permit will expire at midnight on the 28 th of December 2009

Dated the 29 th day of June A.D. 2009

Commissioner

Copy-2 Architect

Comments:

DAY MATERO STUDIO

100 FRONT ST.
BATH, ME 04530

Certificate of Design Application

From Designer: Day Motero studio

Date: June 19, 2009

Job Name: Bingas Wingas at the Stadium

Address of Construction: 77 Free St.

2003 International Building Code

Construction project was designed to the building code criteria listed below:

Building Code & Year IBC-2003 Use Group Classification (s) Assembly A-2

Type of Construction IIB

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC Yes. Existing

Is the Structure mixed use? Yes If yes, separated or non separated or non separated (section 302.3) 1 Hr. Seperation

Supervisory alarm System? Yes Geotechnical/Soils report required? (See Section 1802.2) No

Structural Design Calculations - Refer to Structural Drawings

_____ Submitted for all structural members (106.1 – 106.11)

Design Loads on Construction Documents (1603)

Uniformly distributed floor live loads (7603.11, 1807)

Floor Area Use	Loads Shown

Wind loads (1603.1.4, 1609)

_____ Design option utilized (1609.1.1, 1609.6)

_____ Basic wind speed (1809.3)

_____ Building category and wind importance Factor, I_w table 1604.5, 1609.5)

_____ Wind exposure category (1609.4)

_____ Internal pressure coefficient (ASCE 7)

_____ Component and cladding pressures (1609.1.1, 1609.6.2.2)

_____ Main force wind pressures (7603.1.1, 1609.6.2.1)

Earth design data (1603.1.5, 1614-1623)

_____ Design option utilized (1614.1)

_____ Seismic use group ("Category")

_____ Spectral response coefficients, SDs & SD1 (1615.1)

_____ Site class (1615.1.5)

_____ Live load reduction

_____ Roof *live* loads (1603.1.2, 1607.11)

_____ Roof snow loads (1603.7.3, 1608)

_____ Ground snow load, P_g (1608.2)

_____ If P_g > 10 psf, flat-roof snow load P_f

_____ If P_g > 10 psf, snow exposure factor, C_e

_____ If P_g > 10 psf, snow load importance factor, I_s

_____ Roof thermal factor, C_t (1608.4)

_____ Sloped roof snowload, P_s (1608.4)

_____ Seismic design category (1616.3)

_____ Basic seismic force resisting system (1617.6.2)

_____ Response modification coefficient, R_I and deflection amplification factor C_d (1617.6.2)

_____ Analysis procedure (1616.6, 1617.5)

_____ Design base shear (1617.4, 16175.5.1)

Flood loads (1803.1.6, 1612)

_____ Flood Hazard area (1612.3)

_____ Elevation of structure

Other loads

_____ Concentrated loads (1607.4)

_____ Partition loads (1607.5)

_____ Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404

Certificate of Design

Date: June 19, 2009

From: Day Matero studio

These plans and / or specifications covering construction work on:

Bingas Wingas at the Stadium, 77 Free St.
Portland, ME

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the ***2003 International Building Code*** and local amendments.

LICENSED ARCHITECT
DAVID S. MATERO
No. 2705
STATE OF MAINE

(SEAL)

Signature:

Title: Principal

Firm: Day Matero studio

Address: 100 Front St. Top Floor
Bath, ME 04530

Phone: 207-671-6820

For more information or to download this form and other permit applications visit the Inspections Division on our website at www.portlandmaine.gov

Accessibility Building Code Certificate

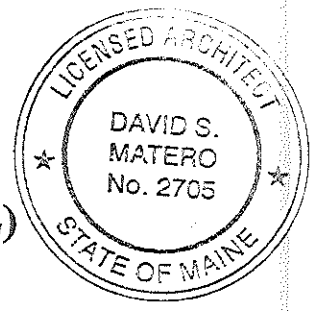
Designer: Day Matero studio

Address of Project: 77 Free St. Portland, ME

Nature of Project: Interior renovation, basement and first floor

The technical submissions covering the proposed construction work as described above have been designed in compliance with applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act. Residential Buildings with 4 units or more must conform to the Federal Fair Housing Accessibility Standards. Please provide proof of compliance if applicable.

(SEAL)



Signature:

Title: Principal

Firm: Day Matero studio

Address: 100 Front St. Top Floor
Bath, ME 04530

Phone: 207.671.6820

For more information or to download this form and other permit applications visit the Inspections Division on our website at www.portlandmaine.gov

One-Inch Insulating Glass Unit Comparisons with PPG Glass*

Insulating Vision Unit Performance Comparisons 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites; interior lite clear unless otherwise noted

Glass Type: Outdoor Lite: *Coating if Any (Surface) Glass* + Indoor Lite: *Coating if Any (Surface) Glass*	Transmittance[2]			Exterior Reflectance[2]		U-Value[3] (Imperial)		European U-Value[4]	Shading Coefficient[5]	Solar Heat Gain Coefficient[6]	Light to Solar Gain (LSG)[7]
	Ultra-violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night-time	Summer Day-time				
Uncoated											
Clear Glass + Clear	50	79	61	15	12	0.47	0.50	2.81	0.81	0.70	1.13
STARPHIRE® + *STARPHIRE*	77	84	80	15	14	0.47	0.50	2.81	0.94	0.82	1.02
SOLEXIA™ + Clear	25	69	39	13	8	0.47	0.50	2.81	0.57	0.49	1.41
ATLANTICA™ + Clear	13	60	29	11	7	0.47	0.50	2.81	0.47	0.40	1.50
CARIBIA® + Clear	20	60	28	11	7	0.47	0.50	2.81	0.45	0.39	1.55
AZURIA™ + Clear	34	61	28	11	7	0.47	0.50	2.81	0.45	0.39	1.56
SOLARBRONZE® + Clear	21	47	39	8	7	0.47	0.50	2.81	0.59	0.51	0.93
SOLARGRAY® + Clear	20	40	33	7	7	0.47	0.50	2.81	0.53	0.45	0.88
OPTIGRAY® 23 + Clear	6	21	15	6	5	0.47	0.50	2.81	0.34	0.29	0.71
GRAYLITE® + Clear	6	12	19	5	5	0.47	0.50	2.81	0.39	0.34	0.36
Coated											
SUNGATE® 500 Low-E Glass											
SUNGATE 500 (2) + Clear	42	74	52	17	14	0.35	0.35	1.96	0.71	0.62	1.19
SOLEXIA + *SUNGATE* 500 (3) Clear	21	64	33	14	9	0.35	0.35	1.96	0.51	0.44	1.45
ATLANTICA + *SUNGATE* 500 (3) Clear	11	56	25	12	7	0.35	0.35	1.96	0.41	0.35	1.60
CARIBIA + *SUNGATE* 500 (3) Clear	17	56	24	12	7	0.35	0.35	1.96	0.40	0.34	1.65
AZURIA + *SUNGATE* 500 (3) Clear	29	57	24	12	7	0.35	0.35	1.96	0.40	0.34	1.66
Bronze + *SUNGATE* 500 (3) Clear	18	44	33	9	9	0.35	0.35	1.96	0.53	0.46	0.96
Gray + *SUNGATE* 500 (3) Clear	17	37	28	8	8	0.35	0.35	1.96	0.47	0.40	0.92
OPTIGRAY 23 + *SUNGATE* 500 (3) Clear	6	19	13	6	6	0.35	0.35	1.96	0.28	0.24	0.80
GRAYLITE + *SUNGATE* 500 (3) Clear	5	11	16	5	6	0.35	0.35	1.96	0.33	0.28	0.41
SOLARBAN® 60 Solar Control Low-E Glass											
SOLARBAN 60 (2) *STARPHIRE* + *STARPHIRE*	25	74	38	11	42	0.29	0.27	1.55	0.46	0.40	1.85
SOLARBAN 60 (2) Clear + Clear	19	70	33	11	29	0.29	0.27	1.55	0.44	0.38	1.85
SOLARBAN 60 (2) *ATLANTICA* + Clear	5	54	20	8	7	0.29	0.27	1.55	0.31	0.27	1.98
SOLARBAN 60 (2) *AZURIA* + Clear	13	54	21	8	7	0.29	0.27	1.55	0.32	0.28	1.93
SOLARBAN 60 (2) *CARIBIA* + Clear	8	54	20	8	4	0.29	0.27	1.55	0.31	0.27	1.99
SOLARBAN 60 (2) *SOLEXIA* + Clear	10	61	25	10	11	0.29	0.27	1.55	0.36	0.32	1.92
SOLARBAN 60 (2) *SOLARBRONZE* + Clear	8	42	20	7	16	0.29	0.27	1.55	0.31	0.27	1.56
SOLARBAN 60 (2) *SOLARGRAY* + Clear	8	35	17	6	12	0.29	0.27	1.55	0.28	0.24	1.47
SOLEXIA + *SOLARBAN* 60 (3) Clear	10	61	25	11	11	0.29	0.27	1.55	0.42	0.36	1.70
ATLANTICA + *SOLARBAN* 60 (3) Clear	5	53	20	9	7	0.29	0.27	1.55	0.35	0.30	1.78
CARIBIA + *SOLARBAN* 60 (3) Clear	8	54	20	9	7	0.29	0.27	1.55	0.35	0.31	1.74
AZURIA + *SOLARBAN* 60 (3) Clear	13	54	21	9	7	0.29	0.27	1.55	0.36	0.31	1.75
Bronze + *SOLARBAN* 60 (3) Clear	8	42	20	7	17	0.29	0.27	1.55	0.36	0.31	1.36
Gray + *SOLARBAN* 60 (3) Clear	8	35	17	7	13	0.29	0.27	1.55	0.32	0.28	1.26
OPTIGRAY 23 + *SOLARBAN* 60 (3) Clear	3	18	9	5	6	0.29	0.27	1.55	0.21	0.18	1.02
GRAYLITE + *SOLARBAN* 60 (3) Clear	2	11	7	5	10	0.29	0.27	1.55	0.20	0.17	0.64
SOLARBAN® 80 Solar Control Low-E Glass											
SOLARBAN 80 (2) Clear + Clear	13	48	20	33	38	0.29	0.27	1.52	0.28	0.24	1.98
SOLARBAN 80 (2) Clear + *OPTIBLUE*†	10	34	15	32	38	0.29	0.27	1.52	0.27	0.23	1.48
SOLARBAN 80 (2) *OPTIBLUE* + Clear	9	34	15	19	28	0.29	0.27	1.52	0.23	0.20	1.70
SOLARBAN 80 (2) *OPTIBLUE* + *OPTIBLUE*	7	25	11	19	28	0.29	0.27	1.52	0.23	0.20	1.23
SOLARBAN® z50 Solar Control Low-E Glass††											
SOLARBAN z50 (2) *OPTIBLUE* + Clear	14	51	26	8	23	0.29	0.27	1.55	0.36	0.31	1.64
SOLARBAN z50 (2) *OPTIBLUE* + *OPTIBLUE*	11	37	20	7	23	0.29	0.27	1.55	0.35	0.31	1.18
AZURIA + *SOLARBAN* z50 (3) *OPTIBLUE*	10	39	16	8	7	0.29	0.27	1.55	0.35	0.30	1.31
ATLANTICA + *SOLARBAN* z50 (3) *OPTIBLUE*	4	39	15	8	7	0.29	0.27	1.55	0.34	0.30	1.28
CARIBIA + *SOLARBAN* z50 (3) *OPTIBLUE*	6	39	15	8	7	0.29	0.27	1.55	0.34	0.30	1.29
SOLEXIA + *SOLARBAN* z50 (3) *OPTIBLUE*	8	44	19	10	11	0.29	0.27	1.55	0.41	0.35	1.26
Bronze + *SOLARBAN* z50 (3) *OPTIBLUE*	7	30	16	7	17	0.29	0.27	1.55	0.35	0.31	0.98
Gray + *SOLARBAN* z50 (3) *OPTIBLUE*	6	25	14	6	13	0.29	0.27	1.55	0.32	0.28	0.91

* Performance data is based on representative samples of factory production. Actual values may vary slightly due to variations in the production process.

† *Optiblue* is a unique substrate by PPG designed specifically for *Solarban* z50. It can also be used for spandrel glass and as an interior lite for *Solarban* 80 glass.

†† *Solarban* 70XL requires the coating on *Starphire* glass.

1. **Figures may vary due to manufacturing tolerances. All tabulated data is based on NFRC methodology using the LBNL Window 5.2 software. Variations from previously published data are due to minor changes in the LBNL Window 5.2 software versus Version 4.1.**
2. **Transmittance and Reflectance** values are based on spectrophotometric measurements and energy distribution of solar radiation.
3. **U-Value** is the overall coefficient of heat transmittance or heat flow measured in BTU/hr. • ft² • °F. Lower U-values indicate better insulating performance.
4. **European U-Value** is the overall coefficient of heat transmittance or heat flow measured in Watts/m²•°C, and is calculated using WinDat WIS version 3.0.1 software.
5. **Shading Coefficient** is the ratio of the total amount of solar energy that passes through a glass relative to 1/8-inch (3.0mm) thick clear glass under the same design conditions. It includes both solar energy transmitted directly plus any absorbed solar energy re-radiated and convected. Lower shading coefficient values indicate better performance in reducing solar heat gain. Note: Performance values were calculated using the LBNL Window 5.2 program using NFRC 100-2001 standard winter and summer design condition.
6. **Solar Heat Gain Coefficient (SHGC)** represents the solar heat gain through the glass relative to the incident solar radiation. It is equal to 86% of the shading coefficient.
7. **Light to Solar Gain (LSG) ratio** is the ratio of visible light transmittance to solar heat gain coefficient.

SUNGUARD®
GUARDIAN INSULATING GLASS DATA

Appearance	Product	Outboard Substrate	Inboard Substrate	Transmission			Reflectance			U-Value		Relative Heat Gain	Shading Coefficient	**Solar Heat Gain Coefficient**	Light to Solar Gain (LSG)
				Visible Light %	Ultra-violet %	Total Solar Energy %	Visible Light Out %	Visible Light In %	Total Solar Energy %	Winter Nighttime	Summer Daytime				
SunGuard SuperNeutral				Coating #2 Surface										6 mm / 12 mm a.s. / 6 mm	
Ultra Clear	SN 68	UltraWhite	UltraWhite	**69**	32	36	11	12	39	0.29	0.28	93	0.44	**0.39**	1.79
Ultra Clear	SN 54	UltraWhite	UltraWhite	**55**	17	25	13	18	41	0.29	0.27	69	0.33	**0.28**	1.93
Clear	SN 68	Clear	Clear	**68**	29	33	11	12	32	0.29	0.28	90	0.43	**0.38**	1.80
Clear	SN 54	Clear	Clear	**54**	15	23	13	18	33	0.29	0.27	68	0.32	**0.28**	1.91
Green	SN 68	Green	Clear	**58**	14	24	9	11	9	0.29	0.28	73	0.34	**0.30**	1.90
Green	SN 54	Green	Clear	**46**	7	17	10	18	10	0.29	0.27	59	0.27	**0.24**	1.88
Light Gray	SN 68	CrystalGray	Clear	**49**	18	24	8	11	16	0.29	0.28	72	0.34	**0.30**	1.65
LightGray	SN 54	CrystalGray	Clear	**39**	9	17	9	17	17	0.29	0.27	57	0.26	**0.23**	1.68
				Coating #3 Surface											
Green	SN 68 (#3)	Green	Clear	**58**	14	24	10	10	10	0.29	0.28	84	0.40	**0.35**	1.64
Gray	SN 68 (#3)	Gray	Clear	**35**	13	18	6	9	15	0.29	0.28	71	0.34	**0.30**	1.20
Bronze	SN 68 (#3)	Bronze	Clear	**41**	12	20	7	9	16	0.29	0.28	75	0.36	**0.31**	1.30
Blue	SN 68 (#3)	Blue	Clear	**44**	17	21	8	9	13	0.29	0.28	78	0.37	**0.33**	1.33
Dark Green	SN 68 (#3)	SMG III	Clear	**51**	8	19	9	10	8	0.29	0.28	73	0.35	**0.30**	1.67
SunGuard High Performance				Coating #2 Surface										6 mm / 12 mm a.s. / 6 mm	
Light Blue	Light Blue 63	Clear	Clear	**62**	39	43	15	12	15	0.34	0.35	122	0.59	**0.51**	1.20
Neutral Pewter	Neutral 61	Clear	Clear	**61**	27	34	20	15	31	0.30	0.29	95	0.45	**0.40**	1.53
Neutral Blue	Neutral 50	Clear	Clear	**50**	30	31	16	11	19	0.33	0.32	94	0.45	**0.39**	1.28
Neutral Gray	Neutral 40	Clear	Clear	**40**	26	25	20	12	22	0.33	0.33	78	0.37	**0.32**	1.25
Light Silver	AG 50	Clear	Clear	**50**	26	28	28	18	36	0.30	0.28	80	0.38	**0.33**	1.51
Light Silver	AG 43	Clear	Clear	**41**	23	24	30	15	33	0.31	0.30	71	0.33	**0.29**	1.39
Royal Blue	Royal Blue 40	Clear	Clear	**38**	21	24	24	18	24	0.31	0.31	76	0.36	**0.31**	1.21
Blue-Green	Light Blue 63	Green	Clear	**52**	18	26	12	12	8	0.34	0.35	84	0.39	**0.35**	1.51
Green	Neutral 61	Green	Clear	**51**	13	23	15	14	11	0.30	0.29	71	0.34	**0.30**	1.74
Green	Neutral 50	Green	Clear	**42**	14	20	13	10	9	0.33	0.32	69	0.32	**0.28**	1.49
Green	Neutral 40	Green	Clear	**34**	12	16	16	12	10	0.33	0.33	59	0.27	**0.24**	1.39
Green	AG 50	Green	Clear	**43**	12	19	21	18	14	0.30	0.28	62	0.29	**0.25**	1.67
Green	AG 43	Green	Clear	**35**	11	15	23	14	14	0.31	0.30	55	0.26	**0.23**	1.52
Aquamarine	Royal Blue 40	Green	Clear	**32**	9	15	19	17	12	0.31	0.31	56	0.26	**0.23**	1.40
Silver Gray	AG 50	CrystalGray	Clear	**36**	15	20	17	18	19	0.30	0.28	64	0.30	**0.26**	1.38
Silver Gray	AG 43	CrystalGray	Clear	**30**	13	16	18	14	18	0.31	0.30	58	0.27	**0.24**	1.25
Blue Gray	Royal Blue 40	CrystalGray	Clear	**27**	12	17	15	17	14	0.31	0.31	60	0.28	**0.25**	1.11
SunGuard Solar				Coating #2 Surface										6 mm / 12 mm a.s. / 6 mm	
Silver Blue-Gray	Silver 32	Clear	Clear	**29**	23	20	22	21	18	0.42	0.44	76	0.35	**0.31**	0.94
Silver	Silver 20	Clear	Clear	**18**	15	12	31	27	27	0.39	0.41	54	0.24	**0.21**	0.84
Blue-Green	Silver 32	Green	Clear	**24**	11	12	17	21	10	0.42	0.44	61	0.27	**0.24**	1.00
Green	Silver 20	Green	Clear	**15**	7	8	24	27	13	0.39	0.41	48	0.21	**0.19**	0.82
				Solar Coating #2 Surface / SuperNeutral Coating #3 Surface											
Silver Blue-Gray	Silver 32/SN 68	Clear	Clear	**24**	14	12	21	15	20	0.29	0.28	52	0.24	**0.21**	1.13
Silver	Silver 20/SN 68	Clear	Clear	**15**	9	7	31	19	28	0.29	0.27	39	0.17	**0.15**	0.99
Blue-Green	Silver 32/SN 68	Green	Clear	**21**	7	9	17	15	10	0.29	0.28	44	0.20	**0.18**	1.15
Green	Silver 20/SN 68	Green	Clear	**13**	4	5	24	19	13	0.29	0.27	35	0.16	**0.14**	0.93

NOTES:

- The performance values shown are nominal and subject to variations due to manufacturing tolerances.
- Guardian performance data are calculated in accordance with the LBNL Window 5.2 computer analysis using an air mass of 1.5.
- Outboard lite may require heat strengthening or tempering to resist potential thermal stresses. Please contact Guardian for assistance.
- A slight shift in visible light reflectance or transmission may be noticed after heat-treatment.
- Guardian recommends edge deletion for all low-E coatings.
- Guardian reserves the right to change product performance characteristics without notice or obligation.
- Some product names have changed: Light Blue 63 (formerly LE-63), Neutral 61 (formerly NP-61), Neutral 50 (formerly LE-50) and Neutral 40 (formerly LE-40).

TO REQUEST SAMPLES
visit SunGuardGlass.com or call 1-866-GuardSG
482-7374