# VILLAGE OF HASTINGS-ON-HUDSON

## Zoning Board of Appeals

Application and Procedure for Application for Variance/Interpretation/View Preservation

Case number:..... Date of application:.....

Property owner: MICHAEL FULLER

Property address: 25 CIRCLE DRIVE

Name all streets on which the property is located: CIRCLE DRIVE / CHESTNUT DRIVE

Sheet: 4.40 Block: 41 Lot/Parcel: 10 Zoning District: R-10

Applicant: MICHAEL FULLER

Standing of applicant if not owner:.....

Address: 25 CIRCLE DRIVE

Daytime phone number: 914 439 2198 Fax number: 914 478 4313

E-mail address: michaelfuller@mfds.net

ZBA action requested for (See §295-146B & C: ☐ Use Variance/s; ☒ Area Variance/s; ☐ Interpretation; ☐ View Preservation (See §295-82)

List code sections & provisions from which the variance or interpretation is requested:

| Section* | Code Provision* | Existing Condition* | Proposed Condition* |
|---|---|---|---|
| 295-68F.1C | CORNER LOT SIDE YARD min 30.0 ft | 44 ft | 44 ft |
| 295-55A | PROHIBITATION AGAINST EXTENSION OF NONCOMFORMITY | | |
| 295-20F | SIDE YARD CORNER LOT NOT LESS THAN REQUIRED FRONT | 16 ft | 16 ft |

*See example below:

| | | | |
|---|---|---|---|
| 295-68F.1a | Front Yard Min. 30 ft. deep | 26.5 ft | 19.5 ft |
| 295-68A | Permitted Principal Use | Single Family Home | Conversion to Dental Office |

# VILLAGE OF HASTINGS-ON-HUDSON
## Zoning Board of Appeals
## Zoning Analysis

ZONING REQUIREMENTS:

### YARD SETBACKS (Principal Structure)

| | REQUIRED | EXISTING | PROPOSED |
|---|---|---|---|
| FRONT | 30' | 44.0' | 44.0' |
| REAR | 30' | 41.6' | |
| SIDE ONE | 30' | 16.0' | 16.0' |
| SIDE TWO | 12' | 44.0' | |
| TOTAL OF TWO SIDES | 30' | 48.4' | |

### YARD SETBACKS (Accessory Structure)

| | REQUIRED | EXISTING | PROPOSED |
|---|---|---|---|
| TO PRINCIPAL BLDG. | | | |
| REAR | | | |
| SIDE | | | |

### BUILDING HEIGHT

| | PERMITTED | EXISTING | PROPOSED |
|---|---|---|---|
| STORIES | 2 1/2 | 3 | 2 |
| FEET | 35 | 32.4' | 19.5' |

### LOT COVERAGE

| | PERMITTED | EXISTING | PROPOSED |
|---|---|---|---|
| LOT AREA | | 14,298.75 ± | 14,298.75 ± |
| BLDG. COVERAGE/ % OF LOT AREA | 25% | 16.97% | 16.97% |
| DEVELOPMENT COVERAGE / % OF LOT AREA | 35% | 23.37% | 23.37% |

*See Definitions of Building and Development Coverage in Section 295-5 of the Village code.

### OCCUPANCY AND USE

| | PERMITTED | EXISTING | PROPOSED |
|---|---|---|---|
| CURRENT USE** | SINGLE FAMILY | SINGLE FAMILY | SINGLE FAMILY |

** Single Family, Two Family, Commercial, Mixed Use etc.

# VILLAGE OF HASTINGS-ON-HUDSON
## Zoning Board of Appeals
## Application and Procedure for Application for Variance/Interpretation/View Preservation

- List any previous application or appeal filed with The Zoning Board of Appeals for this premises:

| Date of Appeal | Purpose of the Appeal | Resolution if any | Date of Action |
|---|---|---|---|
| 6/22/1996 | CASE NO. 19-96 INSUFFICIENT FRONT YARD SETBACK CORNER LOT | BLDG PERMIT No. 2376 APPROVED | 8/2/96 |

- List pending violations on this property if any:

.....

.....

- Is there an approved site plan for this property?: ☒ (Yes) ☐ (No)
- Is there an Accessory Apartment at this property?: ☐ (Yes) ☐ (No)
- Does this property have Boarder's Permit?: ☐ (Yes) ☐ (No)
- On a separate typewritten sheet of paper, state the principal points on which you are making this application. Describe the construction, addition or alteration that requires the variance. Explain why a variance is necessary and demonstrate how the variance satisfies the criteria for the type of variance (use or area) sought. The criteria for the two types of variances are attached. (If an interpretation is sought, explain the issue. If you wish you may also state your argument for how the issue should be resolved.)

Submit nine (9) copies of the application along with the required fee, 8 copies of property survey showing the existing and proposed construction and 8 copies of all other supporting documents (plans, drawings, site maps, photographs, etc. as necessary to describe and support your application) to the Office of the Building Inspector, no less than six (6) weeks prior to the date of scheduled meeting of the Zoning Board of Appeals.

STATE OF NEW YORK
COUNTY OF WESTCHESTER ss.:

I hereby depose and say that all of the above statements and statements contained in all papers I have submitted in connection with this application are true:

Applicant

Sworn to before me this 20th day of May, 2015

MARY ELLEN BALLANTINE
NOTARY PUBLIC
REG #: 01BA6278291
MY COMMISSION EXPIRES 03/25/2017
WESTCHESTER COUNTY, NEW YORK

Mary Ellen Ballantine
Notary Public

# VILLAGE OF HASTINGS-ON-HUDSON

## Zoning Board of Appeals

Application and Procedure for Application for Variance/Interpretation/View Preservation

STATE OF NEW YORK
COUNTY OF WESTCHESTER
VILLAGE OF HASTINGS ON HUDSON

Name : MICHAEL FULLER, being duly sworn, deposes and says that he/she resides at 25 CIRCLE DRIVE in the Village of Hastings-on-Hudson in the County of Westchester, in the State of New York, that he/she is the owner of all that certain lot, parcel of land, in fee, lying and being in the Village of Hastings-on-Hudson aforesaid and known and designated as Sheet 4.40 Block 41 and Lot 10 of the tax map, and that he/she hereby authorized VOYTEK T. OKTAWIEC AIA to make the annexed application in his/her behalf and that the statement of fact contained in said application are true.

Owner

SWORN TO BEFORE ME THIS 20th DAY OF May 2015

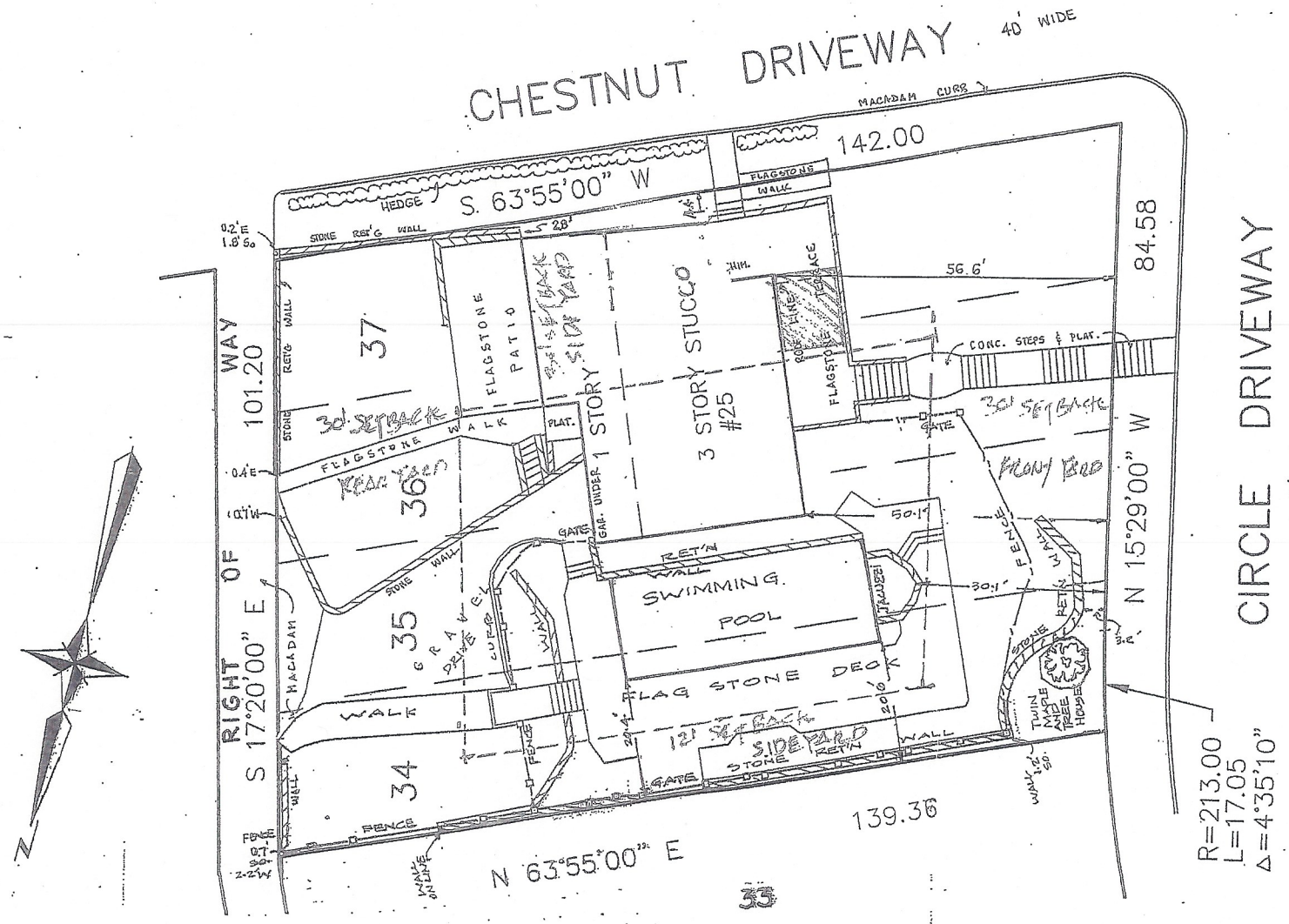
MARY ELLEN BALLANTINE
NOTARY PUBLIC
REG #: 01BA6278291
MY COMMISSION EXPIRES 03/25/2017
WESTCHESTER COUNTY, NEW YORK

Mary Ellen Ballantine
Notary Public

**NOTICE**

This application will not be accepted for filing unless accompanied by all necessary papers, plans and data, in accordance with the foregoing and as required by law.

File # 180 - 54




Possession not indicated.

Eliot Senor, L.S. NYS LIC No. 049822

Copies of this survey map not bearing t
seal shall not be considered to be a tru
Gabriel E. Senor, P.C., 1999 ALL RIG

A copy of the deed ☐ was ☒ was not
A copy of the title report ☐ was ☒ wa

Surface elevations and underground appu
not shown are not guaranteed.

Unauthorized alteration or additions to t
of section 7209 sub-section 2, of the New

NOT FOR TITLE TRANSFER

AS THE PROPE
CURRENTLY EX

AS-BUILT
SURVEY

# LOTS 34, 35, 36 & 37

AS SHOWN ON "SUBDIVISION MAP OF P
BLOCK 18 -MAP No 4

## RIVER VIEW MANOR

PROPERTY OF HASTINGS HOMI
LOCATED IN THE

## VILLAGE OF HASTIN

WESTCHESTER COUNTY, NEW YORK

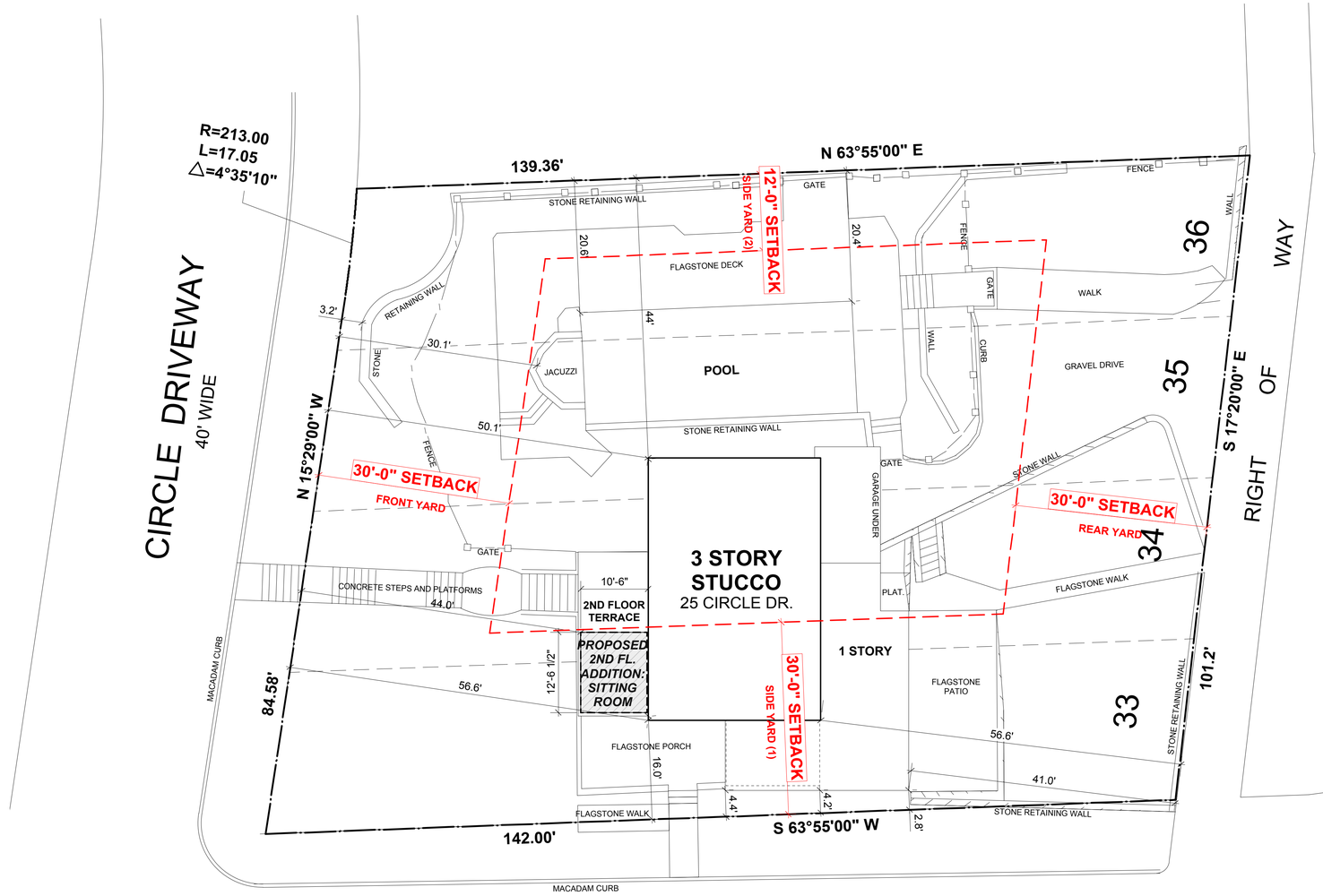
Said "Map" is filed in the Westchester Co
of land Records, on SEP. 18, 1912 R..0

Scale: 1" = 20'


GABRIEL E. SENOR, P.C.
CONSULTING ENGINEER & LAND SURVEYORS
80 EAST HARTSDALE AVE., HARTSDALE, NEW YORK, 10530

# FULLER RESIDENCE ADDITION

25 CIRCLE DRIVE HASTINGS-ON-HUDSON, NEW YORK 10706




## CHESTNUT DRIVEWAY

40' WIDE

PLOT PLAN BASED ON
AS BUILT SWIMMING SURVEY, filed date: DEC.15,1999
PROVIDED BY:
GABRIEL E. SENOR, P.C.
CONSULTING ENGINEER & LAND SURVEYOR
80 EAST HARTSDALE AVE, HARTSDALE, NY 10530

PLOT PLAN
Scale: 1" = 10 ft

**PROJECT DATA** R-10 ZONE

| | | |
|---|---|---|
| 1. | PROJECT NAME | FULLER RESIDENCE |
| 2. | PROJECT LOCATION: | 25 CIRCLE DRIVE HASTINGS-ON-HUDSON, NEW YORK, 10706 |
| 3. | PROJECT DESCRIPTION: | 2ND FLOOR ADDITION ABOVE EXISTING |
| 4. | BLOCK : | BLOCK _ 41 |
| 5. | LOT / SECTION 9 SHEET 33 : | LOT _ 10 CORNER LOT |
| 6. | LOT SIZE : | IRREGULAR : 14,298.75 S.F. |
| 7. | OWNER : | MICHAEL & BONNIE FULLER |
| 8. | BUILDING DEPARTMENT : | VILLAGE OF HASTINGS-ON-HUDSON |
| 9. | OCCUPANCY | SINGLE FAMILY, R-10 ZONING |
| 10. | EXISTING BUILDING AREA | 3,204 S.F. |
| 11. | NEW BUILDING AREA | SITTING ROOM = 132 S.F. |
| | | TOTAL BUILDING AREA = 3,336 S.F. |

**FOOT PRINT DATA**

Net Lot Area = 14,298.75 S.F.
Max Building Area= 2,426.5 S.F. = 16.97%

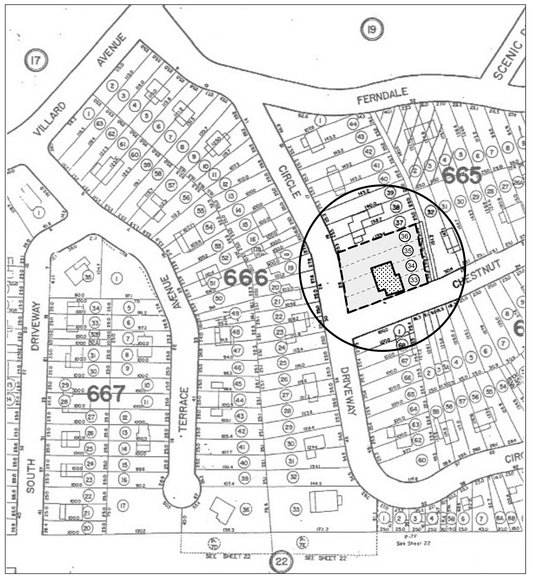
**R-10 ZONING REQUIREMENTS**

| | Required | Lot 10 |
|---|---|---|
| Min. Lot Area (sq.ft.) | 7,500 | 14,298.75 |
| Min. Frontage (ft) | 25 | 101.2 |
| Min. Depth (ft) | 75 | 142 |
| Minimum Yards | | |
| Front (ft) | 30 | 44 |
| Side 1 (ft) | 30 | 16 |
| Side 2 (ft) | 12 | 44 |
| Rear (ft) | 30 | 41 |
| Maximum Height | 2 1/2 | 3 1/2 |
| Stories | | |
| Maximum Building Coverage | 25% | 16.97% |

## DRAWING INDEX

ARCHITECTURAL






SITE PLAN
NOT TO SCALE


Design Firm:
MFDS
Michael Fuller Design Studio
25 CIRCLE DRIVE HASTINGS ON HUDSON NY 10706-1910
PHONE/FAX 914.478.4313
e-mail: michaelfuller@mfds.net




Consultant:

| No. | Date | Revision Notes | Zone | Approvals |
|---|---|---|---|---|
| C | 15/07/09 | Issue for Zoning Board Review #3 | | |
| B | 15/05/28 | Issue for Zoning Board Review #2 | | |
| A | 15/03/26 | Issue for Zoning Board Review | | |

Issue Notes

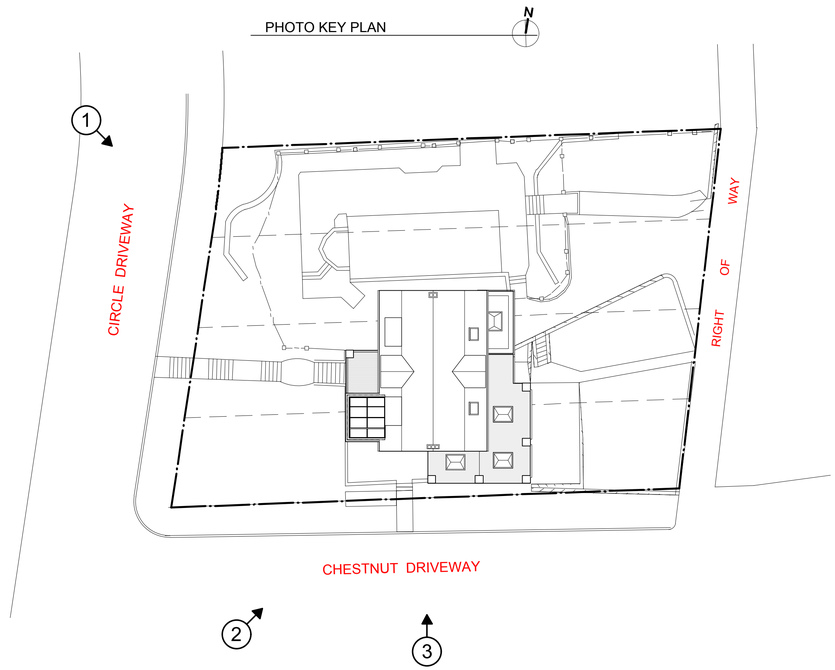
Project Title: FULLER RESIDENCE
25 Circle Drive
Hastings-On-Hudson

Sheet Title: Site Plan, Plot Plan
ZONING & BUILDING DATA

| | |
|---|---|
| Project Manager | LC |
| Drawn By | LEO |
| Reviewed By | MF |
| Date | 2015/03/20 |
| CAD File Name | 25CircleDr_2015 |
| Project ID | MFDS-2015.01 |
| Scale | AS NOTED |
| Sheet No. | A-000 of 5 |

1 NORTHWEST VIEW FROM CIRCLE DRIVE
25 CIRCLE DRIVE HASTINGS-ON-HUDSON, NY 10706

PHOTO KEY PLAN




2 SOUTHWEST ELEVATION VIEW

3 SOUTH ELEVATION VIEW

Design Firm:
MFDS
Michael Fuller Design Studio
25 CIRCLE DRIVE HASTINGS ON HUDSON NY 10706-1910
PHONE/FAX 914.478.4313
e-mail: michaelfuller@mfds.net



Consultant:

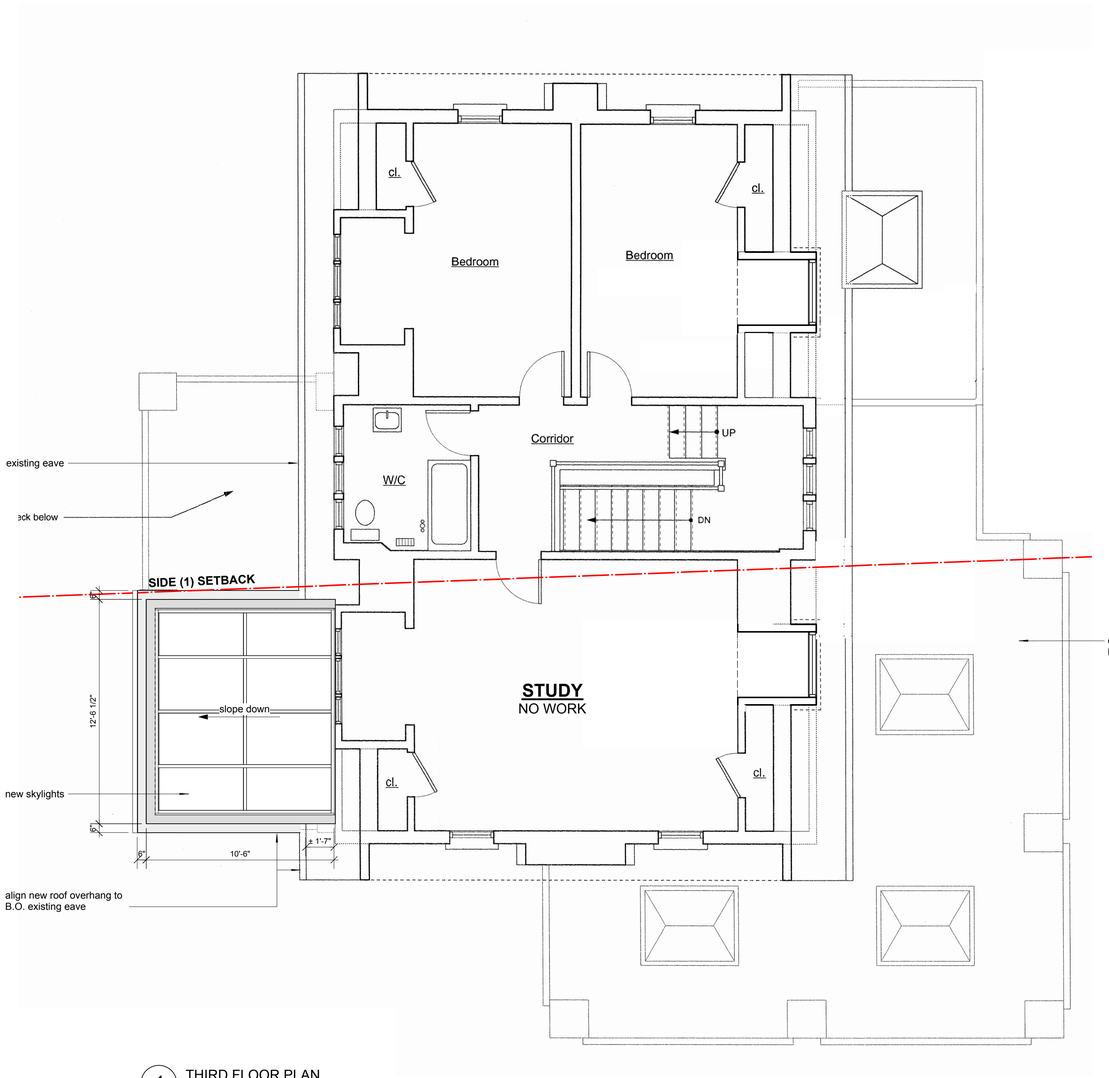
| No. | Date | Revision Notes | Zone | Approvals |
|---|---|---|---|---|
| A | 15/03/26 | Issue for Zoning Board Review | | |

| No. | Date | Issue Notes |
|---|---|---|

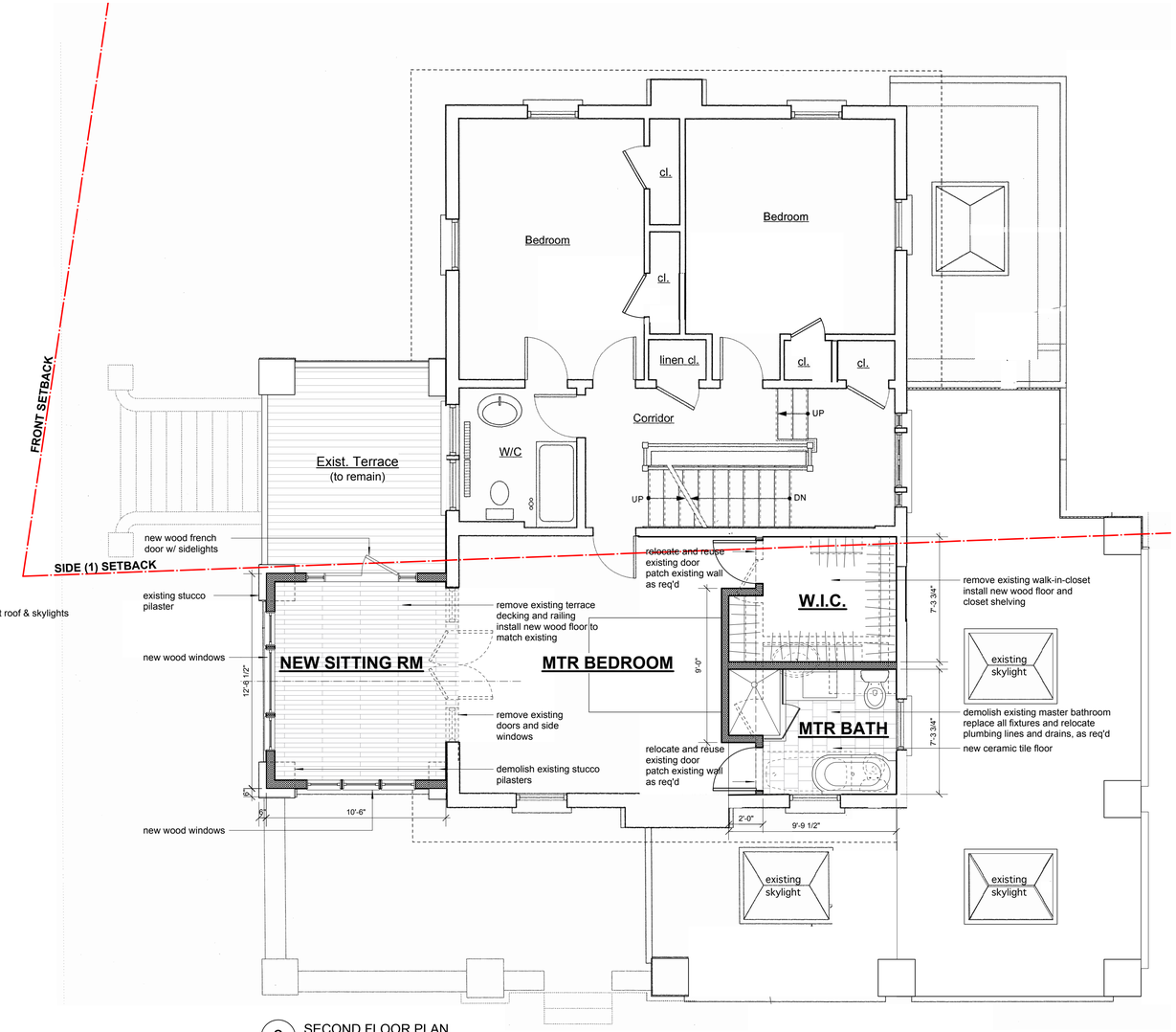
Project Title: FULLER RESIDENCE
25 Circle Drive
Hastings-On-Hudson

Sheet Title: Photo Views

| | |
|---|---|
| Project Manager | LC |
| Drawn By | LEO |
| Reviewed By | MF |
| Date | 2015/03/20 |
| CAD File Name | 25CircleDr_2015 |
| Project ID | MFDS-2015.01 |
| Scale | AS NOTED |
| Sheet No. | A-001 |




4 THIRD FLOOR PLAN
Scale: 1/4" = 1'-0"




3 SECOND FLOOR PLAN
Scale: 1/4" = 1'-0"

TRUE NORTH

Design Firm:
MFDS
Michael Fuller Design Studio
25 CIRCLE DRIVE HASTINGS ON HUDSON NY 10706-1910
PHONE/FAX 914.478.4313
e-mail: michaelfuller@mfds.net



Consultant:

| No. | Date | Revision Notes | Zone | Approvals |
|---|---|---|---|---|

| No. | Date | Issue Notes |
|---|---|---|
| C | 15/07/23 | Issue for Zoning Board Review #3 |
| B | 15/05/28 | Issue for Zoning Board Review #2 |
| A | 15/03/26 | Issue for Zoning Board Review |

Project Title
FULLER RESIDENCE
25 Circle Drive
Hastings-On-Hudson

Sheet Title
Second Floor & Third Floor Plan

| | |
|---|---|
| Project Manager | LC |
| Drawn By | LEO |
| Reviewed By | MF |
| Date | 2015/03/17 |
| CAD File Name | 25CircleDr_2015 |
| Project ID | MFDS-2015.01 |
| Scale | 1/4" : 1'-0" |
| Sheet No. | A-102 of 5 |


1 NORTH ELEVATION
Scale: 1/4" = 1'-0"


2 WEST ELEVATION
Scale: 1/4" = 1'-0"

TRUE NORTH

Design Firm:
MFDS
Michael Fuller Design Studio
25 CIRCLE DRIVE HASTINGS ON HUDSON NY 10706-1910
PHONE/FAX 914.478.4313
e-mail: michaelfuller@mfds.net



Consultant:

| No. | Date | Revision Notes | Zone | Approvals | No. | Date | Issue Notes |
|---|---|---|---|---|---|---|---|
| | | | | | A | 15/03/26 | Issue for Zoning Board Review |

Project Title
FULLER RESIDENCE
25 Circle Drive
Hastings-On-Hudson

Sheet Title
North & West Elevations

| | |
|---|---|
| Project Manager | LC |
| Drawn By | LEO |
| Reviewed By | MF |
| Date | 2015/03/17 |
| CAD File Name | 25CircleDr_2015 |
| Project ID | MFDS-2015.01 |
| Scale | 1/4" : 1'-0" |
| Sheet No. | A-103 |


3 SOUTH ELEVATION
Scale: 1/4" = 1'-0"


4 EAST ELEVATION
Scale: 1/4" = 1'-0"

TRUE NORTH

Design Firm:
MFDS
Michael Fuller Design Studio
25 CIRCLE DRIVE HASTINGS ON HUDSON NY 10706-1910
PHONE/FAX 914.478.4313
e-mail: michaelfuller@mfds.net



Consultant:

| No. | Date | Revision Notes | Zone | Approvals |
|---|---|---|---|---|
| A | 15/03/26 | Issue for Zoning Board Review | | |

Issue Notes

Project Title
FULLER RESIDENCE
25 Circle Drive
Hastings-On-Hudson

Sheet Title
South & East Elevations

Project Manager: LC
Drawn By: LEO
Reviewed By: MF
Date: 2015/03/17
CAD File Name: 25CircleDr_2015

Project ID: MFDS-2015.01
Scale: 1/4" : 1'-0"
Sheet No.: A-104
of 5

CONSERVA**GLASS SELECT**™ OUTPERFORMS the COMPETITION

# GLASS PERFORMANCE COMPARISON CHART

**A Note about the Glass Performance Chart:** Below you will see what appears at first glance to be a somewhat overwhelming chart. We've included this chart for the more technically inclined consumer to show the performance characteristics of various types of glass used in sunrooms on the market. Unlike NFRC ratings, which measure the performance of the entire window assembly, **this chart indicates the Center of Glass values**, without the frames or sashes. The values in this chart are taken from Lawrence Berkley National Lab's Windows 4.1, the industry standard program for measuring glass performance. Please be aware that the numbers cited here will be different from the NFRC label that comes on your window, as that label indicates that specific window size and configuration.

## Four Seasons' Standard Glass – CONSERVA**GLASS SELECT**™

### Exclusive High Performance Insulated Safety Glass

Tempered safety glass which incorporates advanced exotic coating technology with Argon gas filling and exterior glass cleaning and protection features. Ensures superior performance and life expectancy for years of comfortable, cost-effective year-round living.

**Lifetime Limited Product Warranty**
( 20-Year Full Coverage )
See Complete Warranty For Details

| A Code | D Description Construction | E Transmittance (%) Visible (glare) THE LOWER THE BETTER | F Transmittance (%) Solar | G Transmittance (%) Ultraviolet THE LOWER THE BETTER | H Reflectivity (%) Visible Outside | I Reflectivity (%) Visible Inside | L Shading Coefficient THE LOWER THE BETTER | M Solar Heat Gain Coefficient THE LOWER THE BETTER | N Relative Heat Gain THE LOWER THE BETTER | O ASHRAE Winter U-Value THE LOWER THE BETTER | P ASHRAE Winter R-Value THE HIGHER THE BETTER | Q European K W/m²/°C | R European Heat Gain W/m² |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7E | MC-7E / Argon / Clear | 65 | 25 | 5 | 11 | 12 | 0.31 | 0.27 | 65 | 0.25 | 4.0 | 1.13 | 204 |
| 78 | MC- 16 / Argon / Clear | 16 | 10 | 7 | 11 | 25 | 0.18 | 0.15 | 39 | 0.25 | 4.0 | 1.20 | 123 |
| 78L | MC- 16 / Argon / Laminated | 15 | 9 | 1 | 11 | 24 | 0.17 | 0.15 | 38 | 0.24 | 4.2 | 1.21 | 120 |
| 9E | MC-7E / Argon / Clear / Argon/MC-79 | 57 | 21 | 2 | 14 | 17 | 0.29 | 0.25 | 61 | 0.20 | 5 | 1.19 | 199 |
| 9K | MC-7E / Krypton / Clear / Krypton / MC-79 | 57 | 21 | 2 | 14 | 17 | 0.29 | 0.25 | 59 | 0.14 | 7.1 | 0.80 | 191 |
| 97A | MC-16 / Argon / Clear / Argon / MC-72 | 13 | 6 | 2 | 11 | 19 | 0.15 | 0.13 | 33 | 0.20 | 5 | 1.16 | 119 |
| 97K | MC-16 / Krypton / Clear / Krypton / MC-72 | 13 | 6 | 2 | 11 | 19 | 0.14 | 0.12 | 29 | 0.13 | 7.7 | 0.76 | 102 |

## The Competition's Standard Glass – Single Glazing

Can only be used in unconditioned rooms designed for "part-time" use!

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Clear Single Glazing | 90 | 83 | 73 | 9 | 9 | 0.99 | 0.85 | 213 | 1.10 | 0.9 | 5.60 | 672 |
| 2 | Bronze Single Glazing | 67 | 64 | 39 | 7 | 7 | 0.84 | 0.72 | 183 | 1.10 | 0.9 | 5.60 | 577 |
| 4 | Azurlite Single Glazing (Blue) | 77 | 43 | 36 | 8 | 8 | 0.67 | 0.57 | 149 | 1.10 | 0.9 | 5.60 | 469 |
| 7 | Green Single Glazing | 76 | 48 | 28 | 7 | 8 | 0.71 | 0.61 | 158 | 1.10 | 0.9 | 5.60 | 498 |

## The Competition's Standard Glass – Double Glazing

Does not allow for comfortable, cost-effective year-round living. Better than Single Glazing but still not energy efficient.

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | Clear / Clear | 81 | 69 | 58 | 16 | 16 | 0.88 | 0.75 | 183 | 0.49 | 2.0 | 2.60 | 576 |
| 21 | Bronze / Clear | 61 | 54 | 33 | 11 | 14 | 0.72 | 0.62 | 151 | 0.49 | 2.0 | 2.60 | 475 |
| 23 | Azurlite / Clear (Blue) | 70 | 37 | 31 | 13 | 15 | 0.54 | 0.46 | 115 | 0.49 | 2.0 | 2.60 | 361 |

## The Competition's Optional Glass – High-Performance Double Glazing

Offers comfortable year-round living but at a significant price increase and an extended lead time.

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | Solar Cool Bronze / SG 500 | 22 | 23 | 8 | 37 | 24 | 0.38 | 0.32 | 81 | 0.35 | 2.8 | 1.90 | 254 |
| | Solar Cool Bronze/ Argon /SB60VT | 21 | 11 | 3 | 37 | 17 | 0.23 | 0.20 | 52 | 0.34 | 2.9 | 1.80 | 165 |
| | Solar Bronze / HM-44 / Clear | 28 | 14 | 0 | 30 | 14 | 0.24 | 0.21 | 53 | 0.31 | 3.2 | 1.70 | 167 |
| | LoE² / Argon / Clear | 72 | 38 | 16 | 11 | 12 | 0.47 | 0.41 | 97 | 0.26 | 3.85 | 1.40 | 309 |

NOTES BY COLUMN:
◎ BEST PERFORMANCE

**(E.) VISIBLE LIGHT (Glare)** – The lower the better. A measure of that portion of total solar radiation visible to the human eye. Note: the glare caused by too much light can cause discomfort. Codes 7E and 78 have excellent glare control.

**(G.) UV (Ultraviolet)** – The lower the better. Accounts for about 50% of fabric fading. Eliminating all UV reduces fading by 50%.

**(H. & I.) REFLECTIVITY** – Choose a low number in the vertical area for best clarity and lowest reflectivity.

**(L.) SHADING COEFFICIENT** – The lower the better. Ratio of solar gain to 1/8" clear glass.

**(M.) SOLAR HEAT GAIN COEFFICIENT** – The lower the better. Ratio of total solar heat energy transmitted and absorbed by each layer of a glazing system.

**(N.) RELATIVE HEAT GAIN** – The lower the better. Amount of BTU's gained per hour per square foot of glass.

**(O.) U-VALUE** – BTU/HR/SQ. FT./°F The lower the better (R = 1/U).

**(P.) R-VALUE** – The higher the better.

**(Q. & R.). EUROPEAN RATINGS** – Similar to US (O. & P.) European Environmental Conditions are: Winter Temp Out=32F, Temp In=68F, Wind=7.8mph, Direct Solar=0, T Sky=32F, Summer, Temp Out=89F, Temp In=68F, Wind=7.8mph, Direct Solar=248.2 Btu/h ft. sq, T sky=89F.

**SOURCE:** LAWRENCE BERKELEY LAB Windows 4.1 ALL values are center of glass for vertical glass. Calculations based on 90% gas fill rate. All values are based on 1/8" lites of glass with a 5/8" airspace (7/8" overall).



The use of breather tubes for higher altitudes will impact the performance values documented in this chart.


**6747 Campobello Road**
**Mississauga, Ontario, Canada**
**800.758.7325**
**info@icynene.com**

This specification utilizes the Construction Specifications Institute's (CSI) 3-Part formatting. The specification is a manufacturer-specific product specification to be used by design professionals as a guide specification. Editing notes are indicated in *red italics* and precede specification text. Delete editing notes in final specification. Metric conversion, where used, is soft metric conversion.

This specification specifies light density, open-celled, flexible, 100% water-blown spray foam insulation by Icynene, Inc. Revise section number and title below to suit project requirements.

The specified product may contribute to the following credits/points for the respective rating system:

LEED NC Submittals:
- EA Credit 1: Optimize Energy Performance
- MR Credit 2: Construction Waste Management
- MR Credit 5: Regional Materials
- IEQ Credit 7.1: Thermal Comfort
- ID Credit 1: Innovation in Design

LEED for Homes Rating System Submittals:
- EA Credit 1.1: Performance of ENERGY STAR Homes (or EA 2-10 Pathway)
- EA Credit 2.1: Basic Insulation
- EA Credit 3: Air Infiltration
- EA Credit 5.1 and 5.2: Heating and Cooling Distribution System
- MR Credit 2.2 Environmentally Preferable Products
- MR Credit 3.2: Construction Waste Reduction
- EQ Credit 1: ENERGY STAR with Indoor Air Package (Pathway)
- EQ Credit 10: Garage Pollutant Protection

LEED for Schools Rating System Submittals:
- EA Credit Perquisite 2: Minimum Energy Performance
- EA Credit 1: Optimize Energy Performance
- MR Credit 5: Regional Materials
- IEQ Credit 4: Low Emitting Materials
- IEQ Credit 7.1: Thermal Comfort – Design
- IEQ Credit 9: Enhanced Acoustical Performance
- IEQ Credit 10: Mold Prevention
- ID Credit 1: Innovation in Design

NAHB National Green Building Standard (ICC-700-08) Submittals:

- Credit 607.1: Resource - Efficient Materials
- Credit 608.1: Indigenous Materials
- Credit 701.4.5: Insulation and Air Sealing
- Credit 702: Performance Path (Energy) or 703 Prescriptive Path
- Credit 704.6.1: Performance Verification
- Credit 704.6.2: Third Party Testing
- Credit 704.6.2.1: Building Envelope Air Leakage
- Credit 901.3: Garages – Air Barrier
- Credit 901.11: Insulation – Emissions
- Credit 902.11: Perimeter of Living Space Sealed
- Credit 903.4: Conditioned Crawlspace is Sealed
- Credit 903.5: Building Materials – No Visible Mold

Collaborative for High Performance Schools (CHPS) Submittals:

- Credit LE 13.1: Innovation
- Credit EE 1.0: Minimum Energy Performance
- Credit EE 1.1: Superior Energy Performance
- Credit ME 2.1: Construction Site Waste Management
- Credit ME 5.1: Environmentally Preferable Materials
- Credit EQ 2.2: Low Emitting Materials
- Credit EQ 3.0: Minimum Acoustical Performance
- Credit EQ 3.1: Improved Acoustical Performance
- Credit EQ 4.0: ASHRAE 55, Thermal Comfort Code Compliance and Moisture Control

# SECTION 07.21.19
# SPRAYED INSULATION

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Contractual Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. Section Includes: Light density, open celled, flexible, 100 percent water blown polyurethane foam insulation.

B. Related Sections:

*List sections here as applicable to Project*

1. Division 01 Section "LEED Requirements" for additional LEED requirements.
2. Division 07 Section _____
3. Division 07 Section _____
4. Division 07 Section _____
5. Division 07 Section _____
6. Divisions 21 through 23 Mechanical Documents

C. Coordinate mechanical ventilation and fresh air supply with Mechanical sections and ASHRAE Guidelines for optimum indoor air quality.

1.3 REFERENCES

A. American Society for Testing and Materials International (ASTM)

1. ASTM C 518: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
2. ASTM C 1338: Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings
3. ASTM E 84: Test Method for Surface Burning Characteristics of Building Materials
4. ASTM E 96: Standard Test Methods for Water Vapor Transmission of Materials
5. ASTM E 2178: Standard Test Method for Air Permeance of Building Materials
6. ASTM E 283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

1.4 SUBMITTALS

A. Product Data for each type of insulation product specified.

B. Product test reports performed by a qualified independent testing agency evidencing compliance of insulation products with specified requirements including those for thermal resistance, fire-test-response characteristics, water-vapor transmission, water absorption, and other properties, based on comprehensive testing of current products.

C. Evaluation Report: Evidence of compliance of foam-plastic insulations with International Building Code (IBC), International Residential Code (IRC), International Energy Conservation Code (IECC), International Association of Plumbing and Mechanical Officials (IAPMO)

D. Manufacturer's certificate certifying insulation provided meets or exceeds specified requirements.

E. Installer's certificate showing the Icynene installation certification.

F. LEED NC (v3) Submittals:

*Edit the following for actual credits being achieved:*

1. MR Credit 5, Regional Materials: Product Data indicating location of material manufacturer for regionally manufactured materials. Include statement indicating cost and distance from manufacturer to Project. Also include the percentage (by weight) of material that is extracted, harvested, or recovered and manufactured locally.

G. LEED for Homes Rating System Submittals:

*Edit the following for actual credits being achieved:*

1. EA Credit 2, Basic Insulation: Product data showing R-value for sprayed insulation.

2. MR Credit 2.2, Environmentally Preferable Products: Product Data substantiating sprayed insulation complies with CA practice for testing of VOC's from building materials using small chambers.

H. LEED for Schools Rating System Submittals:

*Edit the following for actual credits being achieved:*

1. MR Credit 5, Regional Materials: Product Data indicating location of material manufacturer for regionally manufactured materials. Include statement indicating cost and distance from manufacturer to Project. Also include the percentage (by weight) of material that is extracted, harvested, or recovered and manufactured locally.
2. IEQ Credit 4: Low Emitting Materials: Product data showing compliance with California DHS/EHLB/R174.

I. NAHB National Green Building Standard (ANSI ICC-700-08) Submittals:

*Edit the following for actual credits being achieved:*

1. Credit 608.1, Indigenous Materials: Product Data indicating location of material manufacturer for regionally manufactured materials.
2. Credit 703 Prescriptive Path: Product Data confirming the sprayed insulation is Grade 1.
3. Credit 901.11: Insulation – Emissions: Product Data confirming sprayed insulation contains formaldehyde emission levels that comply with the requirements of CA/DHS 01350.

J. Collaborative for High Performance Schools (CHPS-06) Submittals:

*Edit the following for actual credits being achieved:*

1. Credit EQ 2.2, Low Emitting Materials: Product Data confirming sprayed meets the CHPS Low Emitting Materials criteria Section 01350 - for use in a typical classroom as described in a CA/DHS Standard Practice.

K. Sample warranty

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Product produced in an ISO9001 registered factory.

B. Single Source Responsibility: Single source product from one manufacturer.

C. Installer Qualifications: Engage an Icynene Licensed Dealer (applicator) who has been trained and certified by Icynene.

D. Fire-Test-Response Characteristics: Provide materials specified as determined by testing identical products per test method indicated below by a testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Surface-Burning Characteristics: ASTM E 84

E. Toxicity/Hazardous Materials

1. Provide products that contain no urea-formaldehyde
2. Products and equipment requiring or using CFCs, HCFCs, or HFCs during the manufacturing or application process will not be permitted
3. Provide products that contain no PBDEs

4. Provide products that are “Low-emitting”

1.6 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturers written instructions for handling and protection prior to and during installation.

B. Component A, Base Seal® MDI and Component B, ICYNENE LD-C-50® Resin ideally should be stored between 60°F and 90°F.

C. Component A, Base Seal®, should be protected from freezing

D. Component B, ICYNENE LD-C-50® [Gold Seal®] Resin, can be frozen but must be protected from overheating 120°F and prolonged storage above 100°F. It may separate during storage and should be mixed thoroughly prior to use.

E. Use only those components that are supplied by the Manufacturer.

1.7 PROJECT CONDITIONS

A. Do not expose to sunlight, except to extent necessary for period of installation and concealment.

1.8 WARRANTY

A. Manufacturer’s standard limited lifetime warranty.

B. Refer to www.Icynene.com for full warranty terms.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Polyurethane Spray Foam Insulation: ICYNENE LD-C-50® by Icynene Inc.

2.2 MATERIALS

A. General: Provide insulating materials that comply with requirements and with referenced standards.

B. ICYNENE LD-C-50® Spray Foam Insulation: Light-density, open-celled, flexible, 100% water-blown, conforming to the following:

1. Thermal Resistance (R-Value/inch @75 deg F): ASTM C 518; 3.7 hr/sq ft/degree F/BTU

a. Heat Flow Reduction:

| | | |
|---|---|---|
| 1) | Through 1 inch: | 75 percent |
| 2) | Through 3.5 inches | 93 percent |
| 3) | Through 5.5 inches | 96 percent |
| 4) | Through 10.5 inches | 98 percent |

2. Air Permeance (for 3.5 inches of material): ASTM E 283; 0.009 L/S.m$^2$ @75 Pa

3. Air Permeance (for 5.5 inches of material): ASTM E 2178; 0.01 L/s.m$^2$ @ 75 Pa

4. Water Vapor Transmission (for 5.5 inches of material): ASTM E 96; 11 perms [627 ng /(Pa.s.m$^2$)]

5. Flame Spread and Smoke Developed Rating: ASTM E 84

a. Flame Spread: Less than 25
b. Smoke Development: Less than 450

6. Bacterial and Fungal Growth and Food Value: ASTM C 1338; not a source of food for mold (no growth)

C. Product Description:
1. ICC/ES Evaluation Report No. ESR 1826
2. IAPMO-ES Report No. 0165
3. Collaborative for High-Performance Schools (CHPS) “Low-emitting material” per CA 01350 Criteria
4. Effective vapor permeable air barrier material that can move with the building to maintain the air barrier characteristic against energy-robbing air leakage for the life of the building.

2.3 SOURCE QUALITY CONTROL

A. Product produced in an ISO 9001 registered factory.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected.

1. Review placement area to determine final location will not be within 3 inches of any heat source where the temperature will exceed 200 deg F per ASTM C 411 or in accordance with authorities having jurisdiction.

3.2 PREPARATION

A. Clean substrates and cavities of loose materials capable of interfering with insulation placement.

3.3 APPLICATION

A. Site mix liquid components manufactured by Icynene and supplied by Independent Icynene Licensed Dealer.

B. Apply insulation to substrates in compliance with manufacturer's written instructions.

C. Apply insulation to produce thickness required for indicated R Value.

1. R-13 is achieved at 3 1/2 inches
2. R-20 is achieved at 5 1/2 inches

D. Extend insulation in thickness indicated to envelop entire area to be insulated.

E. Water-Piping Coordination: If water piping is located within insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.

3.4 REPAIRS

A. Any repairs must be effected by an Icynene Licensed Dealer.

3.5 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where insulation is subject to abuse.

END OF SECTION 07.21.19

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*The specification writer/design professional is responsible for product selection, including use and application of this information and this specification should be adopted for each project where applicable. Icynene shall be held harmless for any damages resulting from the use of this specification guide.*

# ICC-ES Evaluation Report

**ESR-3199**

*Reissued April 1, 2012*

*This report is subject to renewal in one year.*

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**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**
**Section: 07 21 00—Thermal Insulation**

**REPORT HOLDER:**

**ICYNENE, INC.**
**6747 CAMPOBELLO ROAD**
**MISSISSAUGA, ONTARIO L5N 2L7**
**CANADA**
**(905) 363-4040**
**www.icynene.com**
**jevans@icynene.com**

**EVALUATION SUBJECT:**

**ICYNENE MD-C-200™**

## 1.0 EVALUATION SCOPE

**Compliance with the following codes:**

- 2009 *International Building Code®* (IBC)
- 2009 *International Residential Code®* (IRC)
- 2009 *International Energy Conservation Code®* (IECC)
- Other Codes (see Section 8.0)

**Properties evaluated:**

- Surface-burning characteristics
- Physical properties
- Thermal resistance (*R*-values)
- Attic and crawl space installation
- Air permeability
- Vapor permeability
- Fire resistance
- Exterior walls of Types I–IV construction

## 2.0 USES

Icynene MD-C-200 spray foam is used as a nonstructural thermal insulating material in Types I, II, III, IV and V construction under the IBC and dwellings under the IRC. The insulation is for use in wall cavities, floor assemblies, ceiling assemblies, or attics and crawl spaces when installed in accordance with Section 4.4. Under the IRC, the insulation may be used as air-impermeable insulation when installed in accordance with Section 3.4, and as a vapor retarder when installed in accordance with Section 3.5. Icynene MD-C-200 spray foam may be used in fire-resistance-rated construction when installed in accordance with Section 4.5, and in Types I through IV construction when installed in accordance with Section 4.6.

## 3.0 DESCRIPTION

### 3.1 MD-C-200 Insulation:

Icynene MD-C-200 foam plastic insulation is a two-component, closed-cell, spray-applied foam plastic with a nominal density of 2.0 pcf (32 kg/m$^3$). The polyurethane foam is produced by combining Icynene Platinum Seal isocyanate (the A component) and Icynene MD-C-200 resin (the B component). The products have a shelf life of six months when stored in factory-sealed containers at temperatures between 60°F and 85°F (16°C and 29°C). The MD-C-200 is supplied in four grades designated as S, W, AS and AW.

### 3.2 Surface Burning Characteristics:

The Icynene MD-C-200 insulation, at a maximum thickness of 4 inches (102 mm) and a nominal density of 2.0 pounds per cubic foot (32.0 kg/m³), has a flame-spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84. Thicknesses of up to 11$^1/_4$ inches (286 mm) for wall and ceiling cavities are recognized based on room corner fire testing in accordance with NFPA 286, when covered with a minimum $^1/_2$-inch-thick (12.7 mm) gypsum board or an equivalent thermal barrier complying with the applicable code.

### 3.3 Thermal Resistance:

Icynene MD-C-200 insulation has a thermal resistance, *R*-value, at a mean temperature of 75°F (24°C) as shown in Table 1.

### 3.4 Air Permeability:

Icynene MD-C-200 insulation, at a minimum 1-inch (25.4 mm) thickness, is considered air-impermeable insulation in accordance with IRC Section R806.4, based on testing in accordance with ASTM E 283.

### 3.5 Vapor Permeability:

Icynene MD-C-200 insulation has a vapor permeance of less than 1 perm (5.7x10$^{-11}$ kg/Pa-s-m$^2$) at a minimum thickness of 1.5 inches (38.1 mm) and may be used where a Class II vapor retarder is required by the applicable code.

### 3.6 Intumescent Coatings:

**3.6.1 DC 315:** DC 315 intumescent coating, manufactured by International Fireproof Technology, Inc., is a water-based coating supplied in 5-gallon (19L) pails and 55 gallon (208L) drums. The coating material has a shelf life of 24 months when stored in factory-sealed containers at temperatures between 41°F (5°C) and 95°F (35°).

**3.6.2 No Burn Plus:** No Burn Plus, manufactured by No Burn, Inc., is an intumescent coating supplied in 1-gallon (4 L) and 5-gallon (19 L) pails and 55-gallon (208 L) drums. The coating material has a shelf life of 36 months when stored in factory-sealed containers at temperatures between 40°F (4.4°C) and 90°F (32.2°C).

## 4.0 DESIGN AND INSTALLATION

### 4.1 General:

The manufacturer's published installation instructions and this report must be strictly adhered to and a copy of these instructions and this evaluation report must be available on the jobsite at all times during installation.

### 4.2 Application:

Icynene MD-C-200 must be applied using spray equipment specified by Icynene, Inc. The insulation must not be used in areas having a maximum service temperature greater than 180°F (82°C), must not be used in electrical outlet or junction boxes or in contact with rain or water, and must be protected from the weather during and after application. Where Icynene MD-C-200 is used as an air-impermeable barrier, such as in unventilated attic spaces regulated by IRC Section R806, the insulation must be installed at a minimum thickness of 1 inch (25.4 mm). The insulation is applied to the intended thickness, with each pass being a maximum of 2 inches (51 mm). Where multiple passes are required, the cure time between passes is negligible. Icynene MD-C-200 must be installed only by factory-certified applicators.

### 4.3 Thermal Barrier:

**4.3.1 Application with a Prescriptive Thermal Barrier:** Icynene MD-C-200 spray foam insulation must be separated from the interior of the building by an approved thermal barrier of $^1/_2$-inch-thick (12.7 mm) gypsum board or an equivalent 15-minute thermal barrier complying with, and installed in accordance with, IBC Section 2603.4 or IRC Section R316.4, as applicable. When installation is within an attic or crawl space as described in Section 4.4, a thermal barrier is not required between the foam plastic and the attic or crawl space, but is required between the insulation and the interior of the building. Thicknesses of up to $11^1/_4$ inches (286 mm) for wall and ceiling cavities are recognized based on room corner fire testing in accordance with NFPA 286, when covered with minimum $^1/_2$-inch-thick (12.7 mm) gypsum board or an equivalent thermal barrier complying with the applicable code.

**4.3.2 Application without a Prescriptive Thermal Barrier:** The prescriptive 15-minute thermal barrier or ignition barrier may be omitted when installation is in accordance with this section. The insulation and coating may be spray-applied to the interior facing of walls, the underside or roof sheathing or roof rafters, and in crawl spaces, and may be left exposed as an interior finish without a 15-minute thermal barrier or ignition barrier. The thickness of the insulation applied to the underside of the roof sheathing must not exceed 10 inches (254 mm). The thickness of the insulation applied to vertical wall surfaces must not exceed 6 inches (152 mm). The insulation must be covered on all surfaces with DC 315 coating at a minimum wet film thickness of 22 mils. The coating must be applied over the Icynene MD-C-200 insulation in accordance with the coating manufacturer's instructions and this report. Surfaces to be coated must be dry, clean, and free of dirt, loose debris and other substances that could interfere with adhesion of the coating. The coating is applied in one coat with low-pressure airless spray equipment.

### 4.4 Attics and Crawl Spaces:

**4.4.1 Application with a Prescriptive Ignition Barrier:** When Icynene MD-C-200 insulation is installed within attics or crawl spaces where entry is made only for service of utilities, an ignition barrier must be installed in accordance with IBC Section 2603.4.1.6 or IRC Sections R316.5.3 and R316.5.4, as applicable. The ignition barrier must be consistent with the requirements for the type of construction required by the applicable code, and must be installed in a manner so the foam plastic insulation is not exposed. Icynene MD-C-200 insulation may be installed in unvented attics in accordance with IRC Section R806.4.

**4.4.2 Application without a Prescriptive Ignition Barrier:** Where Icynene MD-C-200 spray foam is installed in an attic or crawl space without a prescriptive ignition barrier, in accordance with Sections 4.4.2.1 and 4.4.2.2, the following conditions apply:

1. Entry to the attic or crawl space is only for the service of utilities and no storage is permitted.
2. There are no interconnected attic, crawl space or basement areas.
3. Air in the attic or crawl space is not circulated to other parts of the building.
4. Combustion air is provided in accordance with the IMC (*International Mechanical Code*®) Section 701.
5. Attic ventilation is provided when required by IBC Section 1203.2 or IRC Section R806, except when air-impermeable insulation is permitted in unvented attics in accordance with Section R806.4 of IRC.
6. Under-floor (crawl space) ventilation is provided when required by IBC Section 1203.3 or IRC Section R408.1, as applicable.

**4.4.2.1 Attics and Crawl Spaces:** In attics and crawl spaces, Icynene MD-C-200 insulation may be spray-applied to the underside of the roof sheathing and/or rafters, and to the vertical walls and the underside of floors as described in this section. The thickness of the foam plastic applied to the underside of the roof sheathing must not exceed $11^1/_4$ inches (285.7 mm). The thickness of the spray foam insulation applied to vertical wall surfaces must not exceed $11^1/_4$ inches (285.7 mm). The insulation does not require an ignition barrier or a coating.

**Optional:** It is permitted to cover all surfaces of the foam plastic with the coating, as described below and in Section 3.6. The coating must be applied over the Icynene MD-C-200 insulation in accordance with the coating manufacturer's instructions and this report. Surfaces to be coated must be dry, clean, and free of dirt, loose debris and other substances that could interfere with adhesion of the coating. The coating is applied in one coat with low-pressure airless spray equipment, and must be applied to a minimum wet film thickness of 16 mils.

Icynene MD-C-200 insulation may be installed in unvented attics or crawl spaces as described in this section in accordance with IRC Section R806.4.

**4.4.2.2 Use on Attic Floors:** Icynene MD-C-200 insulation may be installed exposed at a maximum thickness of $11^1/_4$ inches (286 mm) between and over the joist in attic floors. The insulation must be separated

from the interior of the building by an approved thermal barrier. The ignition barrier in accordance with the IBC Section 2603.4 and IRC Section R316.5.3 may be omitted.

**4.5 One-hour Non-load-bearing Fire-resistance-rated Wall Assembly:**

**4.5.1 Exterior Face:** Nominally 6-inch-deep (152 mm), No. 18 gage galvanized steel studs, spaced 16 inches (406 mm) on center, are fastened to No. 18 gage galvanized steel floor and ceiling tracks. One layer of $^1/_2$-inch-thick (12.7 mm) Georgia Pacific DensGlass® Gold Exterior Sheathing is installed parallel to steel studs with vertical joints offset a minimum of 16 inches (406 mm) from the vertical joints of the interior Type X gypsum board, and the horizontal joints offset a minimum of 24 inches (610 mm) from the horizontal joints of the gypsum board. The sheathing is attached using $1^1/_4$-inch long (31.7 mm), self-drilling drywall screws spaced 8 inches (203 mm) on center around the perimeter and in the field. Hohmann & Barnard DW-10 brick ties, 6 inches (152 mm) long by $1^1/_2$ inches (38 mm) wide, are spaced 16 inches (406.4 mm) on center vertically on each steel stud, and secured using two $1^5/_8$-inch-long (41.3) self-drilling screws, through 4-inch (102 mm) red clay brick [$3^1/_2$ inches (88.9 mm) by $2^1/_4$ inches (57.1 mm) by $7^3/_4$ inch (197 mm)], laid in a running bond pattern with Type S mortar, leaving a nominally 1-inch (25.4 mm) air gap between the brick and the exterior sheathing. The stud cavity is filled with Icynene MD-C-200 insulation to a maximum nominal thickness of 6 inches (152 mm).

**4.5.2 Interior Face:** Type X gypsum board, $^5/_8$ inch (15.9 mm) thick and complying with ASTM C 1396 is applied to the interior side with the long edge parallel to steel studs, and is secured using $1^1/_4$-inch-long (31.7 mm), self-drilling drywall screws spaced 8 inches (203 mm) on center around the perimeter and 12 inches (305 mm) on center in the field. The gypsum board joints must be treated with vinyl or casein, dry or premixed joint compound applied in two coats to cover all exposed screw heads and gypsum board butt joints. A minimum 2-inch-wide (51 mm) paper, plastic, or fiberglass tape is embedded in the first layer of compound over butt joints of the gypsum board.

**4.6 Exterior Walls in Type I, II, III and IV Construction:**

**4.6.1 General:** When used on exterior walls of Types I, II, III or IV construction, the assembly must comply with IBC Section 2603.5 and this section, and the Icynene MD-C-200 insulation must be installed at a maximum thickness of 6 inches (152 mm). The potential heat of Icynene MD-C-200 insulation is 1918 B/ft$^2$ per inch of thickness, when tested in accordance with NFPA 259.

**4.6.2 Exterior Face:** Nominally 6-inch-deep (152 mm), No. 18 gage, galvanized steel studs, spaced 16 inches (406 mm) on center, are fastened to No. 18 gage galvanized steel floor and ceiling track using No. 8, $^7/_8$-inch-long (22.2 mm), self-tapping, pan head framing screws. Georgia Pacific DensGlass® Gold Exterior Sheathing, $^1/_2$ inch (12.7 mm) thick, is installed over the exterior side of steel studs with the long end perpendicular to the steel studs, using No. 6, Type S, $1^1/_4$-inch (31.7 mm), self-tapping bugle head screws spaced 8 inches (203.2 mm) on center around the perimeter and in the field. The stud cavity is filled with Icynene MD-C-200 insulation to a maximum nominal thickness of 6 inches (152 mm).

**4.6.3 Interior Face:** Type X gypsum board, $^5/_8$ inches (15.9 mm) thick and complying with ASTM C 1396, is installed, with the long dimension perpendicular to steel studs, with No. 6, Type S, $1^1/_4$-inch-long (31.7 mm), self-tapping bugle head screws spaced 8 inches (203 mm) on center around the perimeter and 12 inches (305 mm) in the field. The gypsum board joints must be treated with vinyl or casein, dry or premixed joint compound applied in two coats to cover all exposed screw heads and gypsum board butt joints. A minimum 2-inch-wide (51 mm) paper, plastic, or fiberglass tape is embedded in the first layer of compound over butt joints of the gypsum board.

**4.6.4 Exterior Wall Covering:** Details of the exterior wall covering must be provided to the code official by the report holder, designer or specifier, with an engineering analysis demonstrating that (1) the exterior wall covering conforms to ASTM E 136 and (2) the addition of the wall covering to the assembly described in this section does not negatively affect conformance of the assembly with the requirements of IBC Section 2603.5.

## 5.0 CONDITIONS OF USE

The Icynene MD-C-200 spray foam insulation described in this report complies with, or is a suitable alternative to what is specified in those codes listed in Section 1.0 of this report, subject to the following conditions:

**5.1** The product must be installed in accordance with the manufacturer's published installation instructions, this evaluation report and the applicable code. The instructions within this report govern if there are any conflicts between the manufacturer's published installation instructions and this report.

**5.2** The insulation must be separated from the interior of the building by an approved 15-minute thermal barrier in accordance with IBC Section 2603.4, except when installation is as described in Section 4.3.2 or in attics and crawl spaces as described in Section 4.4.2.

**5.3** The insulation must not exceed the thickness and density noted in Sections 3.2, 4.3, 4.4, 4.5 and 4.6 of this report.

**5.4** The insulation must be protected from the weather during and after application.

**5.5** The insulation must be applied by installers certified by Icynene, Inc.

**5.6** Use of the insulation in areas where the probability of termite infestation is "very heavy" must be in accordance with IRC Section R318.4 or IBC Section 2603.8, as applicable.

**5.7** Jobsite certification and labeling of the insulation must comply with IRC Sections N1101.4 and N1101.4.1 and IECC Sections 303.1.1 and 303.1.2, as applicable.

**5.8** The A and B components of the insulation are produced under a quality control program with inspections by Intertek Testing Services NA, Ltd. (AA-690).

## 6.0 EVIDENCE SUBMITTED

**6.1** Data in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation, (AC377), dated October 2010, including reports of tests in accordance with Appendix X of AC377.

**6.2** Report of air permeance tests in accordance with ASTM E 283.

**6.3** Report of vapor permeance tests in accordance with ASTM E 96.

**6.4** Report of fire-resistance tests in accordance with ASTM E 119.

**6.5** Report of fire tests in accordance with NFPA 285, and related engineering analysis.

**6.6** Reports of room corner fire tests in accordance with NFPA 286.

**6.7** Report of potential heat tests in accordance with NFPA 259.

## 7.0 IDENTIFICATION

Containers of Icynene MD-C-200 components are identified with a label bearing the Icynene Inc. name and address; the product trade name (Icynene MD-C-200, Grade S, W, AS or AW); the lot number; the flame spread and smoke developed indices; mixing instructions; density; the shelf life and the expiration date;
the evaluation report number (ESR-3199); and the name of the inspection agency (Intertek Testing Services NA Ltd.)

Intumescent coatings are identified with the manufacturer's name and address, the product trade name and use instructions.

## 8.0 OTHER CODES

In addition to the codes referenced in Section 1.0, the products recognized in this report have also been evaluated for compliance with the following codes:

- 2006 *International Building Code*® (2006 IBC)
- 2006 *International Residential Code*® (2006 IRC)
- 2006 *International Energy Conservation Code*® (2006 IECC)

The products comply with the above-mentioned codes as described in Sections 2.0 through 7.0 of this report, except as noted below:

- **Application with a Prescriptive Thermal Barrier:** See Section 4.3.2, except the approved thermal barrier must be installed in accordance with 2006 IRC Section R314.4.
- **Application with a Prescriptive Ignition Barrier:** See Section 4.4.1, except attics must be vented in accordance with 2006 IBC Section 1203.2; and crawl space ventilation must be in accordance with 2006 IBC Section 1203.3 or 2006 IRC Section R408, as applicable. Additionally, an ignition barrier must be installed in accordance with 2006 IRC Section R314.5.3 or R314.5.4.
- **Application without a Prescriptive Ignition Barrier:** See Section 4.4.2, except attics must be vented in accordance with 2006 IBC Section 1203.2; and crawl space ventilation must be in accordance with 2006 IBC Section 1203.3 or 2006 IRC Section R408, as applicable. Combustion air must be provided in accordance with Sections 701 and 703 of the 2006 *International Mechanical Code*®.
- **Protection against Termites:** Replace Section 5.7 with the following: Use of the insulation in areas where the probability of termite infestation is "very heavy" must be in accordance with 2006 IRC Section R320.5 or 2006 IBC Section 2603.8.
- **Jobsite Certification and Labeling:** See Section 5.8, except jobsite certification and labeling must comply with 2006 IECC Sections 102.1.1 and 102.11, as applicable.

**TABLE 1—THERMAL RESISTANCE (*R*-VALUES)**

| THICKNESS (inch) | *R*-VALUE (°F.ft².h/Btu) |
|---|---|
| 1.0 | 6.5 |
| 3.5 | 21 |
| 4.0 | 24 |
| 5.5 | 33 |
| 6.0 | 36 |
| 7.5 | 45 |
| 8.5 | 51 |
| 9.5 | 57 |
| 10.0 | 60 |
| 11.25 | 68 |

For **SI:** 1 inch= 25.4 mm; 1°F.ft².h/Btu = 0.176110°K.m².h/W.

[1] *R*-values are calculated based on tested K-values at 1- and 4-inch thicknesses.

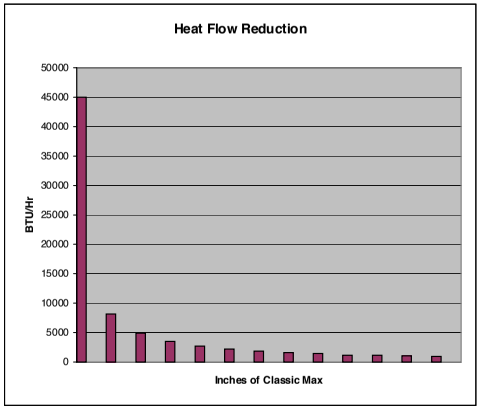
# Heat Flow Reduction Using Icynene Spray Foam

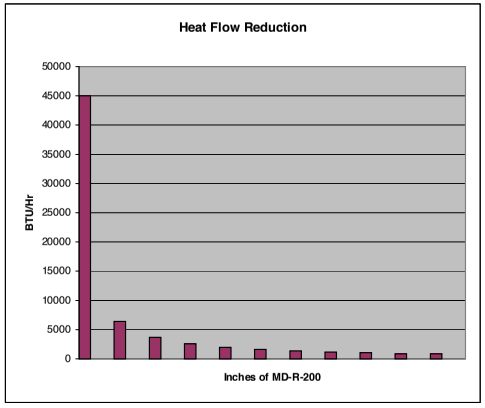
| Icynene Classic Max = R 3.7 per inch | | | | |
|---|---|---|---|---|
| Inches | BTU/Hr | Cavity R-Value | % Heat Flow | %Reduction |
| 0 | 45000 | 0 | 100 | 0 |
| 1 | 8167 | 5.5 | 18% | 82% |
| 2 | 4886 | 9.2 | 11% | 89% |
| 3 | 3486 | 12.9 | 8% | 92% |
| 4 | 2709 | 16.6 | 6% | 94% |
| 5 | 2216 | 20.3 | 5% | 95% |
| 6 | 1874 | 24.0 | 4% | 96% |
| 7 | 1624 | 27.7 | 4% | 96% |
| 8 | 1433 | 31.4 | 3% | 97% |
| 9 | 1159 | 35.1 | 3% | 97% |
| 10 | 1159 | 38.8 | 3% | 97% |
| 11 | 1059 | 42.5 | 2% | 98% |
| 12 | 974 | 46.2 | 2% | 98% |
| 13 | 902 | 49.9 | 2% | 98% |
| 14 | 839 | 53.6 | 2% | 98% |
| 15 | 785 | 57.3 | 2% | 98% |

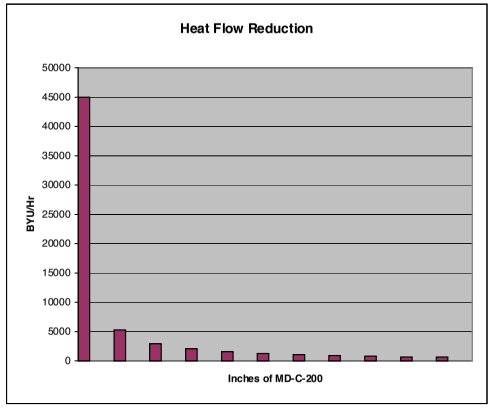
| Icynene MD-R-200 = R 5.2 per inch | | | | |
|---|---|---|---|---|
| Inches | BTU/Hr | Cavity R-Value | % Heat Flow | %Reduction |
| 0 | 45000 | 0 | 100 | 0 |
| 1 | 6419 | 7.0 | 14% | 86% |
| 2 | 3686 | 12.2 | 8% | 92% |
| 3 | 2585 | 17.4 | 6% | 94% |
| 4 | 1990 | 22.6 | 4% | 96% |
| 5 | 1618 | 27.8 | 4% | 96% |
| 6 | 1363 | 33.0 | 3% | 97% |
| 7 | 1178 | 38.2 | 3% | 97% |
| 8 | 1037 | 43.4 | 2% | 98% |
| 9 | 836 | 48.6 | 2% | 98% |
| 10 | 836 | 53.8 | 2% | 98% |
| 11 | 763 | 59.0 | 2% | 98% |
| 12 | 701 | 64.2 | 2% | 98% |
| 13 | 648 | 69.4 | 1% | 99% |
| 14 | 603 | 74.6 | 1% | 99% |
| 15 | 564 | 79.8 | 1% | 99% |

| Icynene MD-C-200 = R 6.75 per inch | | | | |
|---|---|---|---|---|
| Inches | BTU/Hr | Cavity R-Value | % Heat Flow | %Reduction |
| 0 | 45000 | 0 | 100 | 0 |
| 1 | 5257 | 8.6 | 12% | 88% |
| 2 | 2939 | 15.3 | 7% | 93% |
| 3 | 2040 | 22.1 | 5% | 95% |
| 4 | 1562 | 28.8 | 3% | 97% |
| 5 | 1265 | 35.6 | 3% | 97% |
| 6 | 1064 | 42.3 | 2% | 98% |
| 7 | 917 | 49.1 | 2% | 98% |
| 8 | 806 | 55.8 | 2% | 98% |
| 9 | 649 | 62.6 | 1% | 99% |
| 10 | 649 | 69.3 | 1% | 99% |
| 11 | 592 | 76.1 | 1% | 99% |
| 12 | 543 | 82.8 | 1% | 99% |
| 13 | 502 | 89.6 | 1% | 99% |
| 14 | 467 | 96.3 | 1% | 99% |
| 15 | 437 | 103.1 | 1% | 99% |

*R-Value Calculation includes: Outside Air Film = 0.17 OSB Sheathing = 0.51 1/2" Gypsum Board = 0.45 Inside Air Film = 0.68




ICYNENE®
HEALTHIER, QUIETER, MORE ENERGY EFFICIENT®

PILKINGTON

NSG GROUP


# Anti-reflective Glass
# Pilkington **OptiView**™

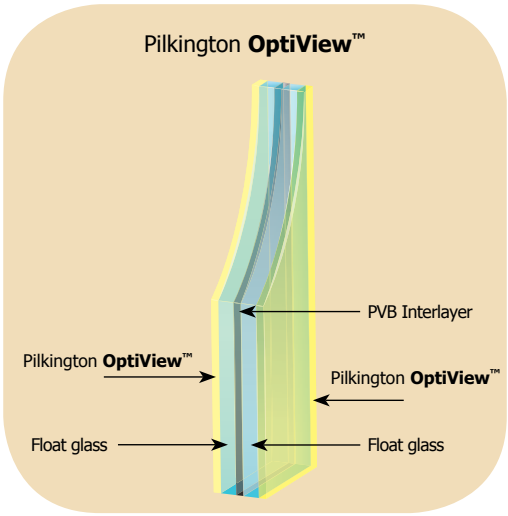
# Pilkington **OptiView**™

## Color neutral, anti-reflective glass

Pilkington **OptiView**™ is a laminated glass with anti-reflective coatings on surfaces #1 and #4 (both outer surfaces of the laminated glass), which reduces interior and exterior visible light reflectance to under 2%. As a consequence, views from both inside and out are clear, un-obscured and virtually reflection-free.

Pilkington **OptiView**™ offers all the traditional benefits of laminated glass, such as improved safety, enhanced security, durability, acoustic properties, and solar energy control. It also offers durability, design flexibility, easy installation and low visual distortion. Furthermore, it provides protection from UV radiation (UVA and UVB) by blocking over 99% of UV transmittance, helping to reduce fading of the contents and interiors of a building.

A single lite of Pilkington **OptiView**™ can be used in a monolithic application, with the anti-reflective coating on one surface, which reduces visible light reflectance and allows more visible light to pass through, when compared to clear float glass with 8% light reflectance as standard.




**Available Laminated Glass Thicknesses**

- 1/4" (6mm) Based on 3mm (1/8") + clear pvb + 3mm (1/8")
- 5/16" (8mm) Based on 4mm (5/32") + clear pvb + 4mm (5/32")
- 1/2" (12mm) Based on 6mm (1/4") + clear pvb + 6mm (1/4")

**Available Stock Sizes**

- 96" x 130"
- 102" x 130"
- 130" x 180"
- 130" x 204"

Pilkington **OptiView**™
Shanghai Museum, China

## Applications

With its large size capability and ability to be processed like ordinary glass, Pilkington **OptiView**™ is ideal for a wide range of traditional and new anti-reflective applications in which clarity of view is of paramount importance.

- Display cases
- Retail shop fronts
- Showrooms
- Panoramic restaurants
- High rise condominiums or apartments
- Glass atriums
- Sports stadiums

Pilkington **OptiView**™ can be used to enhance any view, either looking inwards or outwards. At night, occupants in high rise condominiums or apartments can enjoy spectacular views from their residence, reducing reflected images in the glass as seen with standard glass.

Adding to its unique properties, it is available in larger sizes and achieves a more neutral color than any other anti-reflective glasses, providing architects with greater freedom to innovate than before. Pilkington **OptiView**™ is easily fabricated due to the durable coating and when incorporated into insulating glass units, it can be combined with other products from the Pilkington range to provide additional benefits such as solar control or thermal insulation.

## Benefits

**Safety**

Pilkington **OptiView**™ is a laminated safety glass that performs under impact. Ordinary glass shatters into large pieces when impacted, while the laminated lites of Pilkington **OptiView**™ resist penetration and are shatter-resistant. Even though the glass may break, the glass fragments will remain firmly bonded to the interlayer, minimizing the risk of injury.

**Security**

Pilkington **OptiView**™ can help protect against break-ins and theft. Standard glass can be easily broken, allowing burglars easy access. The interlayers provide a safeguard against intrusion by remaining intact even when glass is broken.

Pilkington **OptiView**™
Falcon Warf, UK

Pilkington **OptiView**™ can be bulletproof and even protect against bomb blasts by using certain glazing combinations.

Pilkington **OptiView**™ can be used in place of metal bars in applications such as banks, prisons and convenient stores requiring high security.

**Audio Performance**

Pilkington **OptiView**™ provides an excellent barrier to noise. The laminated lites provide insulation against audio disturbances by dampening the sound.

Pilkington **OptiView**™
J Foster Jewelers, Ohio.

Pilkington **OptiView**™
Beijing Museum, China

**Solar Energy Control**
Pilkington **OptiView**™ reduces solar heat gain and heat transfer when compared to ordinary clear glass.

**UV Control**
Its anti-reflective properties allow it to absorb UV wavelengths and reduce damage and fading caused by UV radiation.

**Thermal Performance**
The Pilkington **OptiView**™ coating contains emissivity properties that provide a U-factor comparable to that of a laminated insulated glass unit with our thermal performance low-e, Pilkington **Energy Advantage**™.


Pilkington **OptiView**™
Flagstar Bank, Michigan

Pilkington **OptiView**™
Beijing Museum, China

**Durability**
Pilkington **OptiView**™ is durable and maintains its strength and is easy to clean like ordinary glass.

**Design Flexibility**
Pilkington **OptiView**™ can be bent, tempered, heat-strengthened, painted for spandrel and a ceramic frit can be applied.

Custom designs, images, logos, text, patterns, or tinted interlayers can be laminated into the lites to create a truly personalized application. The design can be easily cleaned and free of fingerprints and other abrasions.

**Easy Installation**
Pilkington **OptiView**™ is easily installed. Most laminated combinations can be easily cut to size and fabricated.

**No Visual Distortion**
Distortion can occur with heat-strengthened and tempered glass, known as roller wave distortion. Pilkington **OptiView**™ provides crisp, clean views, free of distortion.

**Severe Weather and Natural Disaster Protection**
Extra protection should be taken in areas where severe weather is expected, such as severe storms, high winds, hurricanes or cyclones. Air born debris can easily shatter windows, causing interior damage and personal injury. Combinations of laminated Pilkington **OptiView**™ can be designed to withstand impact to prevent devastating damage. It can even prevent damage caused from glass breakage during earthquakes. Laminated glass can keep the glass intact and in its frame.

## Features

- Exterior and interior light reflection reduced to less than 2%;
- Light transmittance greater than 90%;
- High clarity;
- UV transmittance reduced by over 99%;
- Superior safety, security and acoustic performance;
- Highly durable, on-line pyrolytic coating;
- Large size capability.

Pilkington **OptiView**™
President's House,
Philadelphia, Pennsylvania

## Laminated Single Glass Performance Data[1, 10]

| | Nominal Glass Thickness | | Visible Light[2] | | | Solar Energy[2] | | | U-Factor[5] | | | Solar Heat Gain Coefficient[7] | Shading Coefficient[8] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in. | mm | Transmittance[3] % | Reflectance[4] % Outside | Reflectance[4] % Inside | Transmittance[3] % | Reflectance[4] % | UV Transmittance[2] % | U.S. Summer* | U.S. Winter* | European** | | |
| Pilkington **OptiView**™ | 1/4 | 6 | 92 | 1.7 | 1.7 | 70 | 4 | <1 | 0.68 | 0.80 | 4.6 | 0.77 | 0.88 |
| Clear Glass (non-laminated) | 1/4 | 6 | 88 | 8 | 8 | 77 | 7 | 63 | 0.93 | 1.03 | 5.7 | 0.82 | 0.94 |
| Pilkington **OptiView**™ | 5/16 | 8 | 90 | 1.7 | 1.7 | 67 | 4 | <1 | 0.67 | 0.79 | 4.5 | 0.75 | 0.86 |
| Clear Glass (non-laminated) | 5/16 | 8 | 87 | 8 | 8 | 73 | 7 | 57 | 0.92 | 1.01 | 5.6 | 0.79 | 0.91 |
| Pilkington **OptiView**™ | 1/2 | 12 | 88 | 1.7 | 1.7 | 62 | 3 | <1 | 0.66 | 0.77 | 4.4 | 0.71 | 0.82 |
| Clear Glass (non-laminated) | 1/2 | 12 | 84 | 8 | 8 | 64 | 6 | 49 | 0.89 | 0.98 | 5.5 | 0.73 | 0.84 |

Clear float glass performance based on non-laminated glass.

Thickness of Laminated Single Glass = thickness of glass layer + thickness of pvb + thickness of glass layer

- 6.8mm Pilkington **OptiView**™ Laminated Single Glass = 3mm Pilkington **OptiView**™ (#1) + 0.8 clear pvb layer + 3mm Pilkington **OptiView**™ (#4)
- 8.8mm Pilkington **OptiView**™ Laminated Single Glass = 4mm Pilkington **OptiView**™ (#1) + 0.8 clear pvb layer + 4mm Pilkington **OptiView**™ (#4)
- 12.8mm Pilkington **OptiView**™ Laminated Single Glass = 6mm Pilkington **OptiView**™ (#1) + 0.8 clear pvb layer + 6mm Pilkington **OptiView**™ (#4)

(Note - all thicknesses are nominal)

## Double Laminated Insulating Glass Performance Data[1, 10]

| Nominal Glass Thickness | | Visible Light[2] | | | Solar Energy[2] | | | U-Factor[5] | | | | | | Solar Heat Gain Coefficient[7] | Shading Coefficient[8] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | mm | Transmittance[3]% | Reflectance[4] % Outside | Reflectance[4] % Inside | Transmittance[3] % | Reflectance[4] % | UV Transmittance[2] % | U.S. Summer* Air | U.S. Summer* Argon | U.S. Winter* Air | U.S. Winter* Argon | European** Air | European** Argon | | |
| Pilkington **OptiView**™ Outer Lite (Coating on #1 and #2 Surface) and Pilkington **OptiView**™ Inner Lite (Coating on #3 and #4 Surface) | | | | | | | | | | | | | | | |
| 1/4 | 6 | 84 | 3 | 3 | 54 | 5 | <1 | 0.33 | 0.30 | 0.33 | 0.30 | 1.9 | 1.7 | 0.66 | 0.76 |
| 5/16 | 8 | 81 | 3 | 3 | 50 | 5 | <1 | 0.32 | 0.30 | 0.32 | 0.29 | 1.9 | 1.7 | 0.64 | 0.73 |
| 1/2 | 12 | 77 | 3 | 3 | 43 | 4 | <1 | 0.32 | 0.29 | 0.32 | 0.29 | 1.9 | 1.7 | 0.59 | 0.68 |

An insulating unit consists of two lites of equal glass thickness.

Thickness of Double Laminated Insulating Glass = thickness of Laminated Single Glass layer + air space thickness + thickness of Laminated Single Glass layer

- 26.3mm Pilkington **OptiView**™ Double Laminated Insulating Glass =
  6.8mm Pilkington **OptiView**™ Laminated Single Glass + 12.7 airspace + 6.8mm Pilkington **OptiView**™ Laminated Single Glass
- 30.3mm Pilkington **OptiView**™ Double Laminated Insulating Glass =
  8.8mm Pilkington **OptiView**™ Laminated Single Glass + 12.7 airspace + 8.8mm Pilkington **OptiView**™ Laminated Single Glass
- 38.3mm Pilkington **OptiView**™ Double Laminated Insulating Glass =
  12.8mm Pilkington **OptiView**™ Laminated Single Glass + 12.7 airspace + 12.8mm Pilkington **OptiView**™ Laminated Single Glass

Notes: Contact Pilkington for other Pilkington **OptiView**™ thickness and laminated glass combinations.

*U.S. U-factor (Btu/hr.sq ft. ºF) is based on NFRC/ASTM standards
**European U-factor (W/sq m K) is based on EN 410/673 (CEN) standard
All performance values are center-of-glass values calculated by the LBNL Window 6.3 program.
See Pilkington Architectural Product Guide for explanation of superscript references-[1, 10].
Mock-ups recommended to understand possible slight off angle color shift.

**Pilkington North America**
811 Madison Ave Toledo, Ohio 43604-5684
buildingproducts.pna@nsg.com
Tel 800 221 0444 Fax 419 247 4573
**www.pilkington.com/na**

# MFDS Michael Fuller
# New Project 1

Quote #: V8REKK1

A Proposal for Window and Door Products prepared for:
**Shipping Address:**
JILCO WINDOW CORP
135 MAHOPAC AVE
GRANITE SPRINGS, NY 10527-1127

MIKE FREIMAN
JILCO WINDOW CORP
PO BOX 1
GRANITE SPRINGS, NY 10527-0153
Phone: (914) 248-6100

Email: mfreiman@jilcowindow.com

This report was generated on 5/20/2015 2:12:33 PM using the Marvin Order Management System, version 0002.02.01 (Current). Price in USD. Unit availability and price are subject to change. Dealer terms and conditions may apply.

**Featuring products from:**

MARVIN Windows and Doors
Built around you.

# UNIT SUMMARY

The following is a schedule of the windows and doors for this project. For additional unit details, please see Line Item Quotes.
Additional charges, tax or Terms and Conditions may apply. Detail pricing is per unit.

NUMBER OF LINES: 7 TOTAL UNIT QTY: 9 EXT NET PRICE: USD 12,862.62

| LINE | MARK UNIT | BRAND | ITEM | NET PRICE | QTY | EXTENDED NET PRICE |
|---|---|---|---|---|---|---|
| 1 | | Marvin | Clad Ultimate Casement<br>CN 2456<br>RO 25" X 55 5/8"<br>Entered as CN 24 X 56 | 766.92 | 1 | 766.92 |
| 2 | | Marvin | Clad Ultimate Casement<br>CN 2456<br>RO 25" X 55 5/8"<br>Entered as CN 24 X 56 | 766.92 | 1 | 766.92 |
| 3 | | Marvin | Clad Ultimate Casement Picture<br>CN 7264<br>RO 73" X 63 5/8"<br>Entered as CN 72 X 64 | 1,145.60 | 1 | 1,145.60 |
| 4 | | Marvin | Clad Ultimate Casement Picture<br>RO 76" X 72"<br>Entered as RO 76" X 72" | 1,527.95 | 1 | 1,527.95 |
| 5 | | Marvin | Clad Ultimate Outswing French Door<br>CN 4068<br>RO 49 5/8" X 82 1/2"<br>Entered as CN 40 X 68 | 3,653.71 | 1 | 3,653.71 |
| 6 | | Marvin | Clad Ultimate Outswing French Door<br>CN 1668<br>RO 20 7/8" X 82 1/2"<br>Entered as CN 16 X 68 | 1,361.04 | 2 | 2,722.08 |
| 7 | | Marvin | Clad Marvin Assembly<br>RO 33" X 35 5/8"<br>Entered as Size by Units | 1,139.72 | 2 | 2,279.44 |

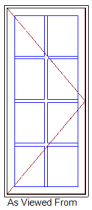
**MFDS Michael Fuller**
**New Project 1**
Quote Number: **V8REKK1**
Architectural Profile Number:

# LINE ITEM QUOTES

The following is a schedule of the windows and doors for this project. For additional unit details, please see Line Item Quotes. Additional charges, tax or Terms and Conditions may apply. Detail pricing is per unit.

| Line #1 | Mark Unit: | Net Price: | | 766.92 |
|---|---|---|---|---|
| Qty: 1 | | Ext. Net Price: | USD | 766.92 |

MARVIN Windows and Doors
Built around you.

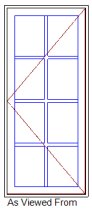



**Entered As:** CN
**CN** 2456
**RO** 25" X 55 5/8"

| | |
|---|---|
| Stone White Clad Exterior | |
| Painted Interior Finish - White - Pine Interior | 86.03 |
| Clad Ultimate Casement - Right Hand | 536.77 |
| CN 2456 | |
| Rough Opening 25" X 55 5/8" | |
| Frame Size 24" X 55 1/8" | |
| Stone White Clad Sash Exterior | |
| Painted Interior Finish - White - Pine Sash Interior | |
| IG - 3/4 in | |
| Low E2 w/Argon | |
| Stainless Perimeter and Spacer Bar | |
| 7/8" SDL - With Spacer Bar - Stainless | 144.12 |
| Rectangular - Standard Cut 2W4H | |
| Stone White Clad Ext - Painted Interior Finish - White Pine Int | |
| Ogee Interior Glazing Profile | |
| Standard Bottom Rail | |
| White Weather Strip | |
| White Folding Handle | |
| White Multi - Point Lock | |
| Aluminum Screen | |
| Charcoal Fiberglass Mesh | |
| White Surround | |
| 4 9/16" Jambs | |
| Nailing Fin | |

| Line #2 | Mark Unit: | Net Price: | | 766.92 |
|---|---|---|---|---|
| Qty: 1 | | Ext. Net Price: | USD | 766.92 |

MARVIN Windows and Doors
Built around you.



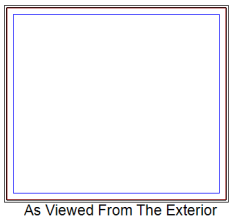

**Entered As:** CN
**CN** 2456
**RO** 25" X 55 5/8"

| | |
|---|---|
| Stone White Clad Exterior | |
| Painted Interior Finish - White - Pine Interior | 86.03 |
| Clad Ultimate Casement - Left Hand | 536.77 |
| CN 2456 | |
| Rough Opening 25" X 55 5/8" | |
| Frame Size 24" X 55 1/8" | |
| Stone White Clad Sash Exterior | |
| Painted Interior Finish - White - Pine Sash Interior | |
| IG - 3/4 in | |
| Low E2 w/Argon | |
| Stainless Perimeter and Spacer Bar | |
| 7/8" SDL - With Spacer Bar - Stainless | 144.12 |
| Rectangular - Standard Cut 2W4H | |
| Stone White Clad Ext - Painted Interior Finish - White Pine Int | |
| Ogee Interior Glazing Profile | |
| Standard Bottom Rail | |
| White Weather Strip | |
| White Folding Handle | |
| White Multi - Point Lock | |
| Aluminum Screen | |
| Charcoal Fiberglass Mesh | |
| White Surround | |
| 4 9/16" Jambs | |
| Nailing Fin | |

| Line #3 | Mark Unit: | Net Price: | | 1,145.60 |
|---|---|---|---|---|
| Qty: 1 | | Ext. Net Price: | USD | 1,145.60 |

MARVIN Windows and Doors
Built around you.

| | |
|---|---|
| Stone White Clad Exterior | |
| Painted Interior Finish - White - Pine Interior | 86.03 |
| Clad Ultimate Casement Picture | 1,059.57 |
| CN 7264 | |

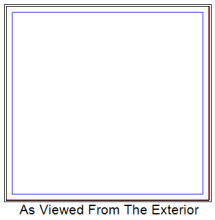

As Viewed From The Exterior

**Entered As:** CN
**CN** 7264
**RO** 73" X 63 5/8"

Rough Opening 73" X 63 5/8"
Frame Size 72" X 63 1/8"
Stone White Clad Sash Exterior
Painted Interior Finish - White - Pine Sash Interior
IG - 3/4 in - 1 Lite
Low E2 w/Argon
Stainless Perimeter Bar
Ogee Interior Glazing Profile
Standard Bottom Rail
White Weather Strip
Solid Wood Covers
4 9/16" Jambs
Nailing Fin

| Line #4 | Mark Unit: | Net Price: | | 1,527.95 |
|---|---|---|---|---|
| Qty: 1 | | Ext. Net Price: | USD | 1,527.95 |

MARVIN Windows and Doors
Built around you.

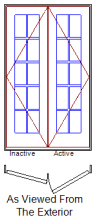

As Viewed From The Exterior

**Entered As:** RO
**RO** 76" X 72"

Stone White Clad Exterior
Painted Interior Finish - White - Pine Interior 86.03
Clad Ultimate Casement Picture 1,441.92
Rough Opening 76" X 72"
Frame Size 75" X 71 1/2"
Stone White Clad Sash Exterior
Painted Interior Finish - White - Pine Sash Interior
IG - 1 in - 1 Lite
Low E2 w/Argon
Stainless Perimeter Bar
Ogee Interior Glazing Profile
Standard Bottom Rail
White Weather Strip
Solid Wood Covers
4 9/16" Jambs
Nailing Fin

| Line #5 | Mark Unit: | Net Price: | | 3,653.71 |
|---|---|---|---|---|
| Qty: 1 | | Ext. Net Price: | USD | 3,653.71 |

MARVIN Windows and Doors
Built around you.



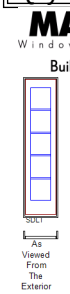
As Viewed From The Exterior

**Entered As:** CN
**CN** 4068
**RO** 49 5/8" X 82 1/2"

Stone White Clad Exterior
Painted Interior Finish - White - Pine Interior 294.12
Clad Ultimate Outswing French Door - XX Left Hand 2,476.49
CN 4068
Rough Opening 49 5/8" X 82 1/2"
Traditional Panels
Left Panel
Stone White Clad Sash Exterior
Painted Interior Finish - White - Pine Sash Interior
IG
Tempered Low E2 w/Argon
Stainless Perimeter and Spacer Bar
7/8" SDL - With Spacer Bar - Stainless 250.00
Rectangular - Standard Cut 2W5H
Stone White Clad Ext - Painted Interior Finish - White Pine Int
Ogee Interior Glazing Profile
Right Panel
Stone White Clad Sash Exterior
Painted Interior Finish - White - Pine Sash Interior
IG
Tempered Low E2 w/Argon
Stainless Perimeter and Spacer Bar
7/8" SDL - With Spacer Bar - Stainless 250.00
Rectangular - Standard Cut 2W5H
Stone White Clad Ext - Painted Interior Finish - White Pine Int
Ogee Interior Glazing Profile
Traditional Lever(s)
Mixed Handle Set Color 161.77
Multi-Point Lock on Active Panel
Satin Taupe Active Exterior Handle Set on Active Panel Keyed 80.88
White Active Interior Handle Set on Active Panel
Satin Taupe Dummy Exterior Handle Set on Inactive Panel 69.85
White Dummy Interior Handle Set on Inactive Panel
White Adjustable Hinges 48.53

Beige Ultrex Sill
Beige Weather Strip
Oak Sill Liner 22.06
4 9/16" Jambs
Nailing Fin

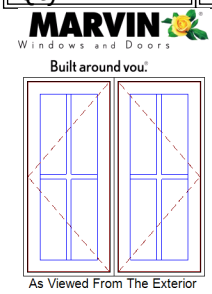
| Line #6 | Mark Unit: | Net Price: | | 1,361.04 |
|---|---|---|---|---|
| Qty: 2 | | Ext. Net Price: | USD | 2,722.08 |




**Entered As:** CN
**CN** 1668
**RO** 20 7/8" X 82 1/2"

Stone White Clad Exterior
Painted Interior Finish - White - Pine Interior 147.06
Clad Ultimate Outswing French Door - Sidelite 1,077.95
CN 1668
Rough Opening 20 7/8" X 82 1/2"
Traditional Panels
Stone White Clad Sash Exterior
Painted Interior Finish - White - Pine Sash Interior
IG
Tempered Low E2 w/Argon
Stainless Perimeter and Spacer Bar
7/8" SDL - With Spacer Bar - Stainless 125.00
Rectangular - Standard Cut 1W5H
Stone White Clad Ext - Painted Interior Finish - White Pine Int
Ogee Interior Glazing Profile
Beige Ultrex Sill
Beige Weather Strip
Oak Sill Liner 11.03
4 9/16" Jambs
Nailing Fin

| Line #7 | Mark Unit: | Net Price: | | 1,139.72 |
|---|---|---|---|---|
| Qty: 2 | | Ext. Net Price: | USD | 2,279.44 |




**Entered As:** Size by Units
**RO** 33" X 35 5/8"

Stone White Clad Exterior
Painted Interior Finish - White - Pine Interior 172.06
2W1H - Rectangle Assembly
Assembly Rough Opening
33" X 35 5/8"

Unit: A1 385.30
Clad Ultimate Casement - Left Hand
CN 1636
Rough Opening 17" X 35 5/8"
Frame Size 16" X 35 1/8"
Stone White Clad Sash Exterior
Painted Interior Finish - White - Pine Sash Interior
IG - 3/4 in
Low E2 w/Argon
Stainless Perimeter and Spacer Bar
7/8" SDL - With Spacer Bar - Stainless 93.38
Rectangular - Special Cut 2W2H
Stone White Clad Ext - Painted Interior Finish - White Pine Int
Ogee Interior Glazing Profile
Standard Bottom Rail
White Weather Strip
White Folding Handle
White Multi - Point Lock
Aluminum Screen
Charcoal Fiberglass Mesh
White Surround

Unit: A2 385.30
Clad Ultimate Casement - Right Hand
CN 1636
Rough Opening 17" X 35 5/8"
Frame Size 16" X 35 1/8"
Stone White Clad Sash Exterior
Painted Interior Finish - White - Pine Sash Interior
IG - 3/4 in
Low E2 w/Argon
Stainless Perimeter and Spacer Bar

| | |
|---|---|
| 7/8" SDL - With Spacer Bar - Stainless | 93.38 |
| Rectangular - Special Cut 2W2H | |
| Stone White Clad Ext - Painted Interior Finish - White Pine Int | |
| Ogee Interior Glazing Profile | |
| Standard Bottom Rail | |
| White Weather Strip | |
| White Folding Handle | |
| White Multi - Point Lock | |
| Aluminum Screen | |
| Charcoal Fiberglass Mesh | |
| White Surround | |
| Factory Mull Charge | 10.29 |
| 4 9/16" Jambs | |
| Nailing Fin | |

***Note: Rotating wash mode hardware not available on UCA, URCA, UPCA, and URPCA units with frame width less than 20".
***Note: This configuration is certified to AAMA 450.

| | |
|---|---|
| Project Subtotal Net Price: USD | 12,862.62 |
| 7.375% Sales Tax: USD | 948.62 |
| Project Total Net Price: USD | 13,811.24 |