

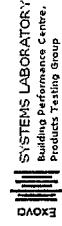


**Simulation Glazing Options Outline:**

- No.1:** 3 mm Cardinal Clear / 14.64 mm Arg 97% / 3 mm Cardinal LOE180 [S3]
- No.2:** 3 mm Cardinal LOE180[S2] / 14.64 mm Arg 97% / 3 mm Cardinal Clear
- No.3:** 4 mm Cardinal Clear / 12.64 mm Arg 97% / 4 mm Cardinal LOE180 [S3]
- No.4:** 4 mm Cardinal LOE180[S2] / 12.64 mm Arg 97% / 4 mm Cardinal !89[S4]
- No.5:** 3 mm Cardinal Clear / 14.64 mm Arg 97% / 3 mm Cardinal LOE272 [S3]
- No.6:** 3 mm Cardinal LOE272[S2] / 14.64 mm Arg 97%/ 3 mm Cardinal Clear
- No.7:** 4 mm Cardinal Clear / 12.64 mm Arg 97% / 4 mm Cardinal LOE272 [S3]
- No.8:** 4 mm Cardinal LOE272[S2] / 12.64 mm Arg 97% / 4 mm Cardinal !89[S4]
- No.9:** 3 mm Cardinal Clear / 14.64 mm Arg 97% / 3 mm Cardinal LOE366 [S3]
- No.10:** 3 mm Cardinal LOE366[S2] / 14.64 mm Arg 97% / 3 mm Cardinal Clear
- No.11:** 4 mm Cardinal Clear / 12.64 mm Arg 97% / 4 mm Cardinal LOE366 [S3]
- No.12:** 4 mm Cardinal LOE366[S2] / 12.64 mm Arg 97% / 4 mm Cardinal !89[S4]
- No.13:** 3 mm Cardinal Clear / 9.79 mm Arg 97% / 3 mm Cardinal LOE180 [S5]
- No.14:** 3 mm Cardinal LOE180[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal Clear
- No.15:** 3 mm Cardinal LOE180[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal LOE180[S5]
- No.16:** 3 mm Cardinal LOE180[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear 9.79 Arg97% / 3 mm Cardinal LOE272[S5]
- No.17:** 3 mm Cardinal LOE180[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 Arg97% / 3 mm Cardinal !89[S6]
- No.18:** 3 mm Cardinal LOE180[S2] / 9.79 mm Arg 97% / 3 mm Cardinal LOE180[S4] / 9.79 mm Arg97% / 3 mm Cardinal !89[S6]
- No.19:** 3 mm Cardinal Clear / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal LOE272 [S5]
- No.20:** 3 mm Cardinal LOE272[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal Clear
- No.21:** 3 mm Cardinal LOE272[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal LOE272[S5]
- No.22:** 3 mm Cardinal LOE272[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal LOE366[S5]
- No.23:** 3 mm Cardinal LOE272[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 Arg97% / 3 mm Cardinal !89[S6]
- No.24:** 3 mm Cardinal LOE272[S2] / 9.79 mm Arg 97% / 3 mm Cardinal LOE272[S4] / 9.79 mm Arg97% / 3 mm Cardinal !89[S6]
- No.25:** 3 mm Cardinal Clear / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% - 3 mm Cardinal LOE366 [S5]
- No.26:** 3 mm Cardinal LOE366[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal Clear
- No.27:** 3 mm Cardinal LOE366[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal LOE366[S5]
- No.28:** 3 mm Cardinal LOE366[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal LOE180[S5]
- No.29:** 3 mm Cardinal LOE366[S2] / 9.79 mm Arg 97% / 3 mm Cardinal Clear / 9.79 mm Arg97% / 3 mm Cardinal !89[S6]
- No.30:** 3 mm Cardinal LOE366[S2] / 9.79 mm Arg 97% / 3 mm Cardinal LOE366[S4] / 9.79 mm Arg97% / 3 mm Cardinal !89[S6]
- No.31:** 3 mm Cardinal LOE180[S2] / 9.79 mm Arg 97% / 3 mm Cardinal LOE366[S4] / 9.79 mm Arg97% / 3 mm Cardinal !89[S6]

Note: Square brackets, [#], denote surface layer of coating

0 DETAILED SIMULATION RESULTS



Operator Type: Horizontal Slider (HSOX)
Simulation Window Size: 1500 Width (mm) x 1200 Height (mm)
Frame Type: VV: Vinyl frame members
Sash Type: VV: Vinyl sash members
Thermal Break Type: None
Simulation Laboratory Code: SEVA (NRC)

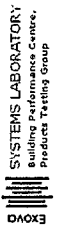
Manufacturer: Vinyl Pro Window Systems Inc.
Exova Report Number: 18-06-00058-S1 RV1
Product Series / Model: Single III Slider
Window 6.3 File Name: 18-06-00058-TS.mdb
Date: 27-Jan-20
Simulation Revision No.:

Physical Air Leakage Value: 0.5 L/m^2
Physical Test Report No.: 18-06-00058-TN
Physical Test Report Issued By: Exova
Physical Test Report Date: 15-Oct-18

Table with columns: Product Code, Grouping ID Number, Total IGU Thickness, Glazing Option Number, Glazing #1 Thickness, Glazing #2 Thickness, Glazing #3 Thickness, Gap Space 1, Gap Space 2, Gas Information, Emissivity, Spacer Type, Tint, C-O-G U-Factor, C-O-G SHGC, C-O-G VT, Grid Type, Grid Size (m), W/m^2.K, U-Factor, SHGC GRID > 1, SHGC GRID < 1, VT NO GRID, VT GRID < 1, VT GRID > 1, ER NO GRID, ER GRID < 1, ER GRID > 1

Glazing Options:
1 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
2 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
3 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
4 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
5 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
6 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
7 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
8 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
9 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
10 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
11 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
12 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
13 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
14 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
15 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
16 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
17 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
18 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
19 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
20 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
21 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
22 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
23 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
24 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
25 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
26 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
27 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
28 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
29 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
30 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear
31 3 mm Cardinal Clear - 0.50\*Arg 97% - 3 mm Cardinal Clear - 0.39\*Arg 97% - 3 mm Cardinal Clear

Snagor Options:
ZF-D Quatrac, Superspacer Premium, Silicore Foam Spacer system Dual Sealed
Frame Options:
(A) VV-Vinyl Frame and Sash members
Divider Options:
(1) 611-PB
(2) 0.33" x 0.205" - Peccol Box, Internal Divider, Painted Aluminum Alloy
(3) The divider option (1) listed above has a gap greater than 3 mm for the following glass options, and meet the center-of-glass grouping rule outlined in NFRC 100-2014: 1,2,5,6,9,10, 0.22" x 0.626" - Mullin Bar, Internal Divider, Painted Aluminum Alloy
(4) The divider option (3) listed above has a gap greater than 3 mm for the following glass options, and meet the center-of-glass grouping rule outlined in NFRC 100-2014: 1-12



Physical Air Leakage Value: 0.5 L/s/m²
Physical Test Report No.: 18-05-B00558-TN
Physical Test Report Issued By: Exova
Physical Test Report Date: 15-Oct-18

Operator Type: Horizontal Slider (HSOX)
Simulation Window Size: 1500 Width (mm) x 1200 Height (mm)
Frame Type: VY-Vinyl frame members
Sash Type: VY-Vinyl sash members

Thermal Break Type: None
Simulation Laboratory Code: SEVA (NFRC)

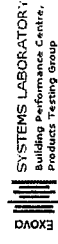
Manufacturer: Vinyl Pro Window Systems Inc.
Exova Report Number: 18-05-B00558-S1 RV1
Product Series / Model: Simple TI Sash
Window 6.3 File Name: 18-05-B00558-18.mdb
Date: 27-Jan-20

Simulation Revision No.:

Table with columns: Product Code, Grouping ID Number, Total IGU Thickness, Glazing Option Number, Glazing #1 Thickness, Glazing #2 Thickness, Glazing #3 Thickness, Gap Space 1, Gap Space 2, Gas Information, Emissivity, Spacer Type, Tint, C-O-G-U-Factor, C-O-G-SHGC, C-O-G-VT, Gnd Type, Gnd Size (in), Total Product, SHGC GRID > 1", VT NO GRID, VT GRID < 1", ER NO GRID, ER GRID < 1", ER GRID > 1"

- Glazing Options: 1 3 mm Cardinal Clear - 0.56" Arg 97% - 3 mm Cardinal LOE 180 (S3)
2 3 mm Cardinal LOE180(S2) - 0.56" Arg 97% - 3 mm Cardinal Clear
3 3 mm Cardinal Clear - 0.50" Arg 97% - 4 mm Cardinal LOE180 (S3)
4 3 mm Cardinal LOE180(S2) - 0.50" Arg 97% - 4 mm Cardinal LOE180 (S3)
5 3 mm Cardinal Clear - 0.58" Arg 97% - 3 mm Cardinal LOE272 (S3)
6 3 mm Cardinal LOE272(S2) - 0.58" Arg 97% - 3 mm Cardinal Clear
7 3 mm Cardinal LOE272(S2) - 0.57" Arg 97% - 3 mm Cardinal LOE366 (S3)
8 3 mm Cardinal Clear - 0.56" Arg 97% - 3 mm Cardinal Clear
9 3 mm Cardinal LOE366(S2) - 0.56" Arg 97% - 3 mm Cardinal Clear
10 3 mm Cardinal Clear - 0.50" Arg 97% - 4 mm Cardinal LOE366 (S3)
11 4 mm Cardinal LOE366(S2) - 0.50" Arg 97% - 4 mm Cardinal LOE180 (S3)
12 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal Clear
13 3 mm Cardinal LOE180(S2) - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal Clear
14 3 mm Cardinal LOE180(S2) - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal Clear
15 3 mm Cardinal LOE180(S2) - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal LOE180(S2)
16 3 mm Cardinal LOE180(S2) - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal LOE272(S2)
17 3 mm Cardinal LOE180(S2) - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal LOE180(S2)
18 3 mm Cardinal LOE180(S2) - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal LOE180(S2)
19 3 mm Cardinal LOE180(S2) - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal LOE180(S2)
20 3 mm Cardinal LOE272(S2) - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal Clear
21 3 mm Cardinal LOE272(S2) - 0.35" Arg 97% - 3 mm Cardinal Clear - 0.35" Arg 97% - 3 mm Cardinal LOE272(S2)

Spacer Options: ZF-D Quinox Superspacer Premium; Silciono Foam Spacer system Dual Sealed
Frame Options: (A) VY-Vinyl Frame and Sash members
Divider Options: (V) G1-PB
(II) G1-PB
(III) G2A1B
(IV) G2A1B
The divider option (I) stated above has a gap greater than 3 mm for the following glass options.
and meet the center-of-glass grouping rule outlined in NFRC100-2014, 1.2.5.6.9.10
The sash option (I) stated above has a gap greater than 3 mm for the following glass options.
and meet the center-of-glass grouping rule outlined in NFRC100-2014, 1.12



Physical Air Leakage Value: 0.5 L/m<sup>2</sup>
Physical Test Report No.: 18-06-E0058-1N
Physical Test Report Issued By: Ecova
Physical Test Report Date: 15-Oct-18

CSA A440.2-14 Simulation Summary

Operator Type: Horizontal Slider (HSOX)
Simulation Window Size: 1500 Width (mm) x 1200 Height (mm)
Frame Type: VY-Vinyl frame members
Sash Type: VY-Vinyl sash members
Thermal Break Type: None
Simulation Laboratory Code: SEVA (NFRCC)

Manufacturer: Vinyl Pro Window Systems Inc.
Exova Report Number: 18-06-E0058-S1 RV1
Product Series / Model: Single Til Slider
Window 6.3 File Name: 18-06-E0058-18.mdb
Date: 27-Jan-20
Simulation Revision No.:

Table with columns: Product Code, Grouping ID Number, Total IGU Thickness, Glazing Option Number, Glazing #1 Thickness, Glazing #2 Thickness, Glazing #3 Thickness, Gap Space 1 (mm), Gap Space 2 (mm), Gas Information (% of Gas Fill 1, 2, 3), Spacer Type, Tint, C-O-G U-Factor, C-O-G SHGC, C-O-G VT, Grid Type, Grid Size (in), Total Product U-Factor, SHGC NO GRID, SHGC GRID<1, SHGC GRID>1, VT NO GRID, VT GRID<1, VT GRID>1, ER NO GRID, ER GRID<1, ER GRID>1

Glazing Options:

- 1 3 mm Cardinal Clear - 0.58" Arg 97% - 3 mm Cardinal LoE180 (S3)
2 3 mm Cardinal LoE180(S2) - 0.58" Arg 97% - 3 mm Cardinal Clear
3 3 mm Cardinal Clear - 0.50" Arg 97% - 4 mm Cardinal LoE180 (S3)
4 4 mm Cardinal LoE180(S2) - 0.50" Arg 97% - 4 mm Cardinal LoE180(S4)
5 3 mm Cardinal Clear - 0.58" Arg 97% - 3 mm Cardinal LoE272 (S3)
6 3 mm Cardinal LoE272(S2) - 0.58" Arg 97% - 3 mm Cardinal Clear
7 4 mm Cardinal Clear - 0.50" Arg 97% - 4 mm Cardinal LoE272 (S3)
8 4 mm Cardinal LoE272(S2) - 0.50" Arg 97% - 4 mm Cardinal LoE272 (S4)
9 3 mm Cardinal Clear - 0.58" Arg 97% - 3 mm Cardinal LoE366 (S3)
10 3 mm Cardinal LoE366(S2) - 0.58" Arg 97% - 3 mm Cardinal Clear
11 4 mm Cardinal Clear - 0.50" Arg 97% - 4 mm Cardinal LoE366 (S3)
12 4 mm Cardinal LoE366(S2) - 0.50" Arg 97% - 4 mm Cardinal LoE366 (S4)
13 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal Clear
14 3 mm Cardinal LoE180(S2) - 0.39" Arg 97% - 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal Clear
15 3 mm Cardinal LoE180(S3) - 0.39" Arg 97% - 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal LoE180(S5)
16 3 mm Cardinal LoE180(S2) - 0.39" Arg 97% - 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal LoE272(S5)
17 3 mm Cardinal LoE180(S2) - 0.39" Arg 97% - 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal LoE366(S5)
18 3 mm Cardinal LoE180(S2) - 0.39" Arg 97% - 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal LoE272 (S5)
19 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal Clear
20 3 mm Cardinal LoE272(S2) - 0.39" Arg 97% - 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal Clear
21 3 mm Cardinal LoE272(S2) - 0.39" Arg 97% - 3 mm Cardinal Clear - 0.39" Arg 97% - 3 mm Cardinal LoE272(S5)

Spacer Options:

- ZF-D Qualex, Superspacer Premium; Silicone Foam Spacer system Dual Sealed

Frame Options:

- (A) VY-Vinyl Frame and Sash members

Divider Options:

- W1 611-PB
P1 616-MB
I1 616-MB
I1 616-MB

0.330" x 0.285" - Pencil Bar, Internal Divider, Painted Aluminum Alloy
The divider option (1) stated above has a gap greater than 3 mm for the following glass options, and meet the center-of-glass grouping rule outlined in NFRC100-2014: 1, 2, 5, 6, 8, 10
0.232" x 0.628" - Muntz Bar, Internal Divider, Painted Aluminum Alloy
The divider option (2) stated above has a gap greater than 3 mm for the following glass options, and meet the center-of-glass grouping rule outlined in NFRC100-2014: 1-12