

**Standard/Specification for
windows, doors, and
unit skylights**

EXCERPT EDITION

**Product Designations (Product Types,
Performance Classes & Grades), and
Gateway Performance Requirements**



4 General Requirements

4.1 General - This voluntary Standard/Specification covers requirements for single and dual windows, single and dual side-hinged door systems, sliding doors, and unit skylights for new construction and replacement applications. All products rated in accordance with this Standard/Specification shall conform to all the requirements of this Standard/Specification. All products covered by this Standard/Specification shall be installed in full accordance with the manufacturer's instructions.

4.2 Markings/Identifications - When required by local code or project specification, windows, doors, and unit skylights shall include a permanent identification of the product manufacturer.

4.3 Gateway Performance Requirements - Each product type has a defined "gateway" set of primary requirements for the applicable product type before entry into the performance class is permitted (see Table 1). Gateway performance requirements are the minimum allowable performance levels that a gateway test specimen shall achieve in order for a product to be rated with a particular classification (R, LC, C, HC, or AW). The gateway test specimen size shall be equal to or larger than the specified gateway size, in both height and width. Typically, the minimum allowable performance levels and the gateway size change as the classification changes. All gateway test specimens shall achieve certain minimum performance levels for air leakage resistance, water penetration resistance, uniform load, and, where required, forced-entry resistance and operating force. Also, all gateway test specimens shall achieve certain additional minimum performance levels for auxiliary (durability) and material tests specific to the product operator type. See Clause 5 for additional details.

Product Performance Class	Minimum Performance Grade	Minimum Design Pressure, Pa (psf)	Minimum Structural Test Pressure, Pa (psf)	Minimum Water Resistance Test Pressure, Pa (psf)
Windows and doors				
R	15	720 (15.0)	1080 (22.5)	140 (2.90)
LC	25	1200 (25.0)	1800 (37.5)	180 (3.75)
C	30	1440 (30.0)	2160 (45.0)	220 (4.50)
HC	40	1920 (40.0)	2880 (60.0)	290 (6.00)
AW	40	1920 (40.0)	2880 (60.0)	390 (8.00)
Unit skylights and roof windows				
R	15	720 (15.0)	1440 (30.0)	140 (2.90)
C	30	1440 (30.0)	2880 (60.0)	220 (4.50)
HC	40	1920 (40.0)	3840 (80.0)	290 (6.00)

TABLE 1 GATEWAY REQUIREMENTS

4.4 Product Designations

4.4.1 General - A primary designator shall be used to designate products included in this Standard/Specification. An optional secondary designator shall be permitted to be used if desired.

4.4.2 Primary Designator

4.4.2.1 General - The primary designator in this Standard/Specification is a four-part code, which includes product type, performance class, performance grade (design pressure), and maximum size tested to achieve this rating. For reporting purposes, the product type shall be typed in full or represented by abbreviations as shown in Figures 2 to 4. Abbreviations shall be as per Table 2.

An asterisk (*) added to the size designation indicates that the size tested was an additional test unit that was smaller than the gateway test size for the original product type and performance class, for the purpose of meeting optional performance grade (design pressure) requirements. An example is shown in Figure 3. See Clause 4.4.2.6 for further details regarding optional performance grades (design pressures).

Hung Window R30 800 x 1800* (32 x 71*) or Hung Window RM1440 800 x 1800*	H – R30 800 x 1800* (32 x 71*) or H – RM 1440 800 x 1800*
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Legend:

Hung Window or H	- product type (see Clause 4.4.2.1)
R	- performance class (inch-pound) (see Clauses 0.2.1 and 4.4.2.3)
RM	- performance class (SI) (see Clauses 0.2.1 and 4.4.2.3)
30	- performance grade (design pressure) (inch-pound) (see Clauses 0.2.3, 4.4.2.4, and 4.4.2.6)
1440	- performance grade (design pressure) (SI) (see Clauses 0.1.2.3, 4.4.2.4, and 4.4.2.6)
800 x 1800	- maximum size tested (SI) (see Clause 4.4.2.5)
(32 x 71)	- maximum size tested (inch-pound) (optional) (see Clause 4.4.2.5)

FIGURE 3 PRIMARY DESIGNATOR (EXAMPLE 2)

The characters “LW” shown in the product type in Figure 4 indicate limited water penetration resistance. LW ratings shall only be permitted for side-hinged door systems, and shall not be permitted for any other product types. Also, LW ratings shall only be permitted where the representative test specimen has successfully passed a water penetration resistance test at a pressure differential of 0 Pa (0.0 psf) or higher, but less than the minimum test pressure required for the indicated performance class and performance grade (design pressure). If the test specimen is not successfully tested to a water penetration resistance test pressure equal to or greater than 0 Pa (0.0 psf), then that side-hinged door system shall not be considered in compliance with this Standard/Specification. An example is shown in Figure 4.

Limited Water Side-Hinged Door R40 900 x 2000 (36 x 79)	LW SHD – R40 900 x 2000 (36 x 79)
or	or
Limited Water Side-Hinged Door RM1920 900 x 2000	LW SHD – RM1920 900 x 2000

Legend:

LW	- limited water
Side-Hinged Door or SHD	- product type (see Clause 4.4.2.1)
R	- performance class (inch-pound) (see Clauses 0.2.1 and 4.4.2.3)
RM	- performance class (SI) (see Clauses 0.2.1 and 4.4.2.3)
40	- performance grade (design pressure) (inch-pound) (see Clauses 0.2.3, 4.4.2.4, and 4.4.2.6)
1920	- performance grade (design pressure) (SI) (see Clauses 0.2.3, 4.4.2.4, and 4.4.2.6)
900 x 2000	- maximum size tested (SI) (see Clause 4.4.2.5)
(36 x 79)	- maximum size tested (inch-pound) (optional) (see Clause 4.4.2.5)

FIGURE 4 PRIMARY DESIGNATOR (EXAMPLE 3)

Products that have been tested as dual windows as specified in Clause 4.5 shall have the code “DW” added to their product designation after the product type. An example of a product designation for a dual window would be “HS–DW LC25 1800 x 1400”. Products that have been tested as dual doors as specified in Clause 4.5 shall have the code DD added to their product designation after the product type. An example of a product designation for a dual door would be “SHD–DD–LC25 900 x 2100”.

4.4.2.2 Product Type - When used, product designations shall be as per Table 2 for the window, door, and unit skylight product types covered in this Standard/Specification. The depictions in Figure 5 are general in nature and are not all-inclusive.

AP = Awning, hopper, projected window	LW DASHD = Limited water dual-action side-hinged door
ATD = Architectural terrace door	LW SHD = Limited water side-hinged door
BW = Basement window	RW = Roof window
C = Casement window	SD = Sliding door
DASHD = Dual-action side-hinged door	SHD = Side-hinged door
DAW = Dual-action window	SHW = Side-hinged (inswinging) window
FD = Fixed door	SKG = Unit skylight — glass glazed
FW = Fixed window	SKP = Unit skylight — plastic glazed
GH = Greenhouse window	SLT = Side lite
H = Hung window	SP = Specialty product
HE = Hinged rescue window	TA = Tropical awning window
HP = Horizontally pivoted window	TH = Top-hinged window
HS = Horizontal sliding window	TR = Transom
J = Jalousie window	VP = Vertically pivoted window
JA = Jal-awning window	VS = Vertical sliding window

TABLE 2 PRODUCT TYPES

4.4.2.3 Performance Class

Products included in this Standard/Specification shall be classified according to any of the five performance classes (R, LC, C, HC, and AW) as described in Clause 0.2.1 and Table 1.

Product Type	Product Designation	Minimum Test Size, mm (in)	Minimum Design Pressure, Pa (lbf/ft ²)	Deflection at Design Pressure, mm (in)	Minimum Structural Pressure, Pa (lbf/ft ²)	Minimum Water Pressure, Pa (lbf/ft ²)	Air Leakage Resistance	
							Pa (lbf/ft ²)	L/s•m ² (cfm/ft ²)
Architectural terrace door	ATD-HC40	1060 × 2280 (42 × 90)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	ATD-AW40	1200 × 2430 (48 × 96)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Awning, hopper, projected window	AP-R15	1200 × 400 (48 × 16)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	AP-LC25	1200 × 800 (48 × 32)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	AP-C30	1200 × 800 (48 × 32)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	AP-HC40	1500 × 800 (60 × 32)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	AP-AW40	1500 × 900 (60 × 36)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Basement window	BW-R15	800 × 360 (32 × 14)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
Casement window	C-R15	600 × 1500 (24 × 60)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	C-LC25	800 × 1500 (32 × 60)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	C-C30	800 × 1500 (32 × 60)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	C-HC40	900 × 1500 (36 × 60)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	C-AW40	900 × 1500 (36 × 60)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Dual-action side- hinged door	DASHD-R15	900 × 2000 (36 × 79)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	DASHD-LC25	900 × 2100 (36 × 83)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	DASHD-C30	1000 × 2100 (40 × 83)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	DASHD-HC40	1200 × 2400 (48 × 95)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
Dual-action window	DAW-R15	1100 × 1500 (44 × 60)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	DAW-LC25	1200 × 1500 (48 × 60)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	DAW-C30	1200 × 1800 (48 × 71)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	DAW-HC40	1500 × 2500 (60 × 99)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	DAW-AW40	1500 × 2500 (60 × 99)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Fixed door	FD-R15	900 × 2000 (36 × 79)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	FD-LC25	900 × 2100 (36 × 83)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	FD-C30	1000 × 2100 (40 × 83)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	FD-HC40	1200 × 2400 (48 × 95)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	FD-AW40	1500 × 2500 (60 × 99)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Fixed window	FW-R15	1200 × 1200 (48 × 48)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	FW-LC25	1400 × 1400 (56 × 56)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	FW-C30	1500 × 1500 (60 × 60)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	FW-HC40	1500 × 1800 (60 × 71)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	75 (1.6)	1.5 (0.3)
	FW-AW40	1500 × 2500 (60 × 99)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Greenhouse window	GH-R15	900 × 900 × 300 (36 × 36 × 12)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
Hinged rescue window	HE-R15	Varies	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
Horizontally or vertically pivoted window	HP/VP-R15	1100 × 1500 (44 × 60)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	HP/VP-LC25	1200 × 1500 (48 × 60)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	HP/VP-C05	1200 × 2200 (48 × 87)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	HP/VP-HC40	1500 × 2500 (60 × 99)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	HP/VP-AW40	1500 × 2500 (60 × 99)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Horizontal sliding window	HS-R15	1600 × 1100 (63 × 44)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	HS-LC25	1800 × 1400 (71 × 56)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	HS-C30	1800 × 1500 (71 × 60)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	HS-HC40	2500 × 2000 (99 × 79)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	HS-AW40	2500 × 2000 (99 × 79)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	1.5 (0.3)

TABLE 25 GATEWAY PERFORMANCE REQUIREMENTS

Product Type	Product Designation	Minimum Test Size, mm (in)	Minimum Design Pressure, Pa (lbf/ft ²)	Deflection at Design Pressure, mm (in)	Minimum Structural Pressure, Pa (lbf/ft ²)	Minimum Water Pressure, Pa (lbf/ft ²)	Air Leakage Resistance	
							Pa (lbf/ft ²)	L/s•m ² (cfm/ft ²)
Hung window — vertical sliding	H-R15	1000 × 1600 (40 × 63)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	H-LC25	1100 × 1900 (44 × 75)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	H-C30	1400 × 2300 (56 × 91)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	H-HC40	1500 × 2500 (60 × 99)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	H-AW40	1500 × 2500 (60 × 99)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	1.5 (0.3)
Jal-awning window	JA-R15	1400 × 1600 (56 × 63)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
Jalousie window	J-R15	900 × 1200 (36 × 48)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
Non-hung window —vertical sliding	VS-R15	1000 × 1600 (40 × 63)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	VS-LC25	1100 × 1900 (44 × 75)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	VS-C30	1400 × 2300 (56 × 91)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
Side-hinged door	SHD-R15	900 × 2000 (36 × 79)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	SHD-LC25	900 × 2100 (36 × 83)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	SHD-C30	1000 × 2100 (40 × 83)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	SHD-HC40	1000 × 2100 (40 × 83)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	SHD-AW40	1200 × 2400 (48 × 95)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Side-hinged window	SHW-AW40	1200 × 1800 (48 × 71)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Side lite	SLT-R15	400 × 2000 (16 × 79)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	SLT-LC25	400 × 2100 (16 × 83)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	SLT-C30	500 × 2100 (20 × 83)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
Sliding door	SD-R15	1800 × 2000 (71 × 79)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	SD-LC25	2200 × 2100 (87 × 83)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	SD-C30	2400 × 2100 (95 × 83)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	SD-HC40	3100 × 2400 (123 × 95)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	SD-AW40	3100 × 2400 (123 × 95)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	1.5 (0.3)
Top-hinged window	TH-C30	1200 × 1500 (48 × 60)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	TH-HC40	1200 × 1500 (48 × 60)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
	TH-AW40	1500 × 2500 (60 × 99)	1920 (40.0)	L/175	2880 (60.0)	390 (8.0)	300 (6.2)	0.5 (0.1)
Transom	TR-R15	1800 × 300 (71 × 12)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	TR-LC25	1800 × 400 (71 × 16)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	TR-C30	2000 × 500 (79 × 20)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
Tropical awning window (multiple vent)	TA-R15	1200 × 1600 (48 × 63)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	TA-LC25	1400 × 2500 (56 × 99)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	TA-C30	1400 × 2500 (56 × 99)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
Tropical awning window (single vent)	TA-R15	1200 × 600 (48 × 24)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	TA-LC25	1400 × 700 (56 × 28)	1200 (25.0)	Reported	1800 (37.5)	180 (3.8)	75 (1.6)	1.5 (0.3)
	TA-C30	1400 × 700 (56 × 28)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
Unit skylight or roof window (glass glazed)	SKG/RW-R15	500 × 1100 (20 × 44)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	SKG/RW-C30	1100 × 1100 (44 × 44)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	SKG/RW-HC40	1100 × 2400 (44 × 95)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)
Unit skylight or roof window (plastic glazed)	SKP/RW-R15	500 × 1100 (20 × 44)	720 (15.0)	Reported	1080 (22.5)	140 (2.9)	75 (1.6)	1.5 (0.3)
	SKP/RW-C30	1100 × 1100 (44 × 44)	1440 (30.0)	Reported	2160 (45.0)	220 (4.5)	75 (1.6)	1.5 (0.3)
	SKP/RW-HC40	1100 × 2400 (44 × 95)	1920 (40.0)	L/175	2880 (60.0)	290 (6.0)	300 (6.2)	1.5 (0.3)

TABLE 25 GATEWAY PERFORMANCE REQUIREMENTS

CMB-5-05

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Schaumburg, IL 60143-4268 USA
www.aamanet.org

Window & Door Manufacturers Association
1400 East Touhy Avenue, Suite 470
Des Plaines, IL 60018 USA
www.wdma.com

Canadian Standards Association
5060 Spectrum Way, Suite 100
Mississauga, Ontario, L4W 5N6 Canada
www.ShopCSA.ca



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