

SYSTEM 4500

TECHNICAL INFORMATION
SIZE LIMITATIONS

SYSTEM 4500

SIZE LIMITATIONS

Frame Size

Frame profiles can be manufactured in lengths up to 4.00 m (157") in color white and 2.50 m (98") for non-white colors. The length of a fabricated frame, even for fixed picture windows, should not exceed 3.00 m (118"). Installation and mulling of frames close to the maximum recommended length must allow for the linear expansion of the profiles. This can be accomplished by using expansion joint solutions. For non-white frames close to their maximum length, it is recommended to fill the gap between the rough opening and the frame with a wool-type insulation up to 300 mm (12") from the corners and mullions to allow for proper expansion and contraction.

Maximum and minimum size limitations may also be influenced by building codes. Minimum sizes in particular are influenced when egress requirements are specified. Maximum sizes may indirectly be influenced by building codes due to a required performance grade. Please note that in addition to national building codes, local jurisdictions may have their own product requirements and unique installation practices. The information in this guide is for reference only and it is the responsibility of the fabricator / installer to be aware of all applicable laws and to contact a professional engineer when necessary.

Sash Size

Hardware capacity needs to be considered when discussing sash weight restrictions. Regardless of the hardware capacity, the maximum weight for a sash should not exceed 220 lbs (100 kg). This weight includes the weight of the glass, hardware, reinforcement and PVC profiles. For sash weights up to 175 lbs (80 kg), all load bearing hardware components must be fastened through two or three PVC walls. For sash weights between 175 lbs (80 kg) and 220 lbs (100 kg), all load bearing fasteners must be fastened into the reinforcement. All fasteners that secure door hinges to the sash and frame need to go through reinforcement. More detailed instructions are available from the hardware supplier.

All sash profiles need to be reinforced under the following conditions:

- Non-white profiles (with steel of at least 1.5 mm wall thickness)
- Tilt-Slide patio doors
- Awning and hopper windows
- Door sashes
- Sash profiles that exceed a width of 100 cm (39") or a height of 130 cm (51")
- Sash glass weight greater than 30 kg (66 lbs)
- Locking point distances greater than 65 cm (26")
- Required structural performance greater than 1600 Pa (33 psf)

Size Range Diagrams

The following diagrams show recommended size ranges using different sash configurations. These recommendations are based on test standards of Europe, not North American, so they should only be used as a reference. A comparable Design Pressure (DP) to North American standards is listed in the tables below each sash profile. Specific sash configurations that have been tested to the North American standard AAMA/WDMA/CSA 101/I.S.2/A440-05 are shown on the diagram in red or olive green, when the glass was structurally adhered to the sash upstand.

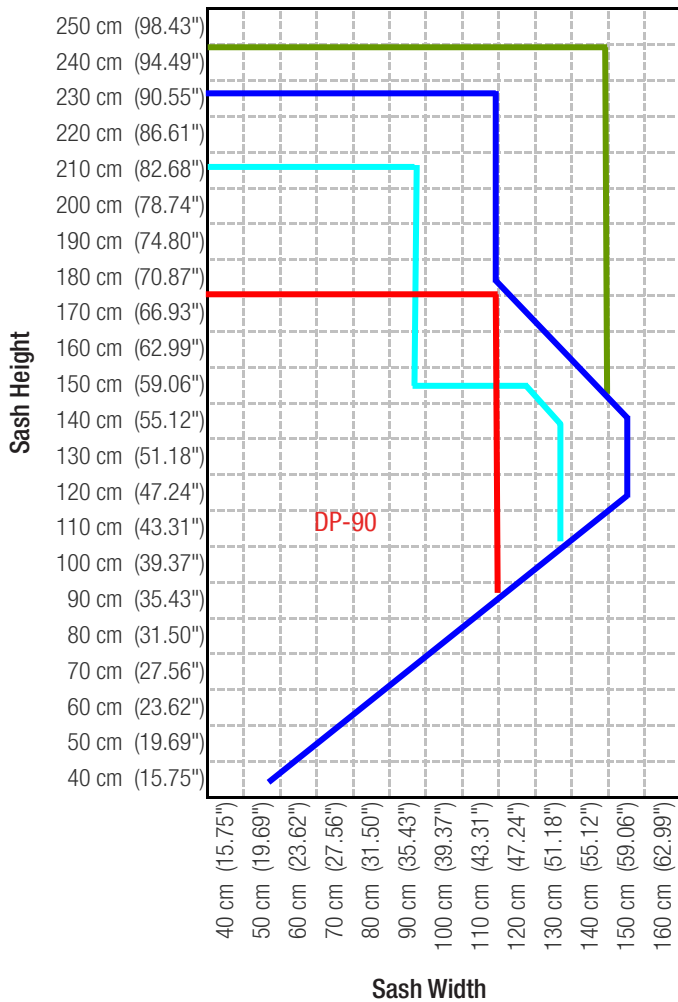
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



SIZE LIMITATIONS

60 mm Z-Sash (554051)

Tilt-Turn

Color: White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	35 x 28 x 1.5 	244506	40 kg 88 lbs	Up to DP-30
	35 x 28 x 2 	244536	75 kg 165 lbs	Up to DP-30
	35 x 28 x 2 	244536	75 kg 165 lbs	Up to DP-90
*	35 x 28 x 2 	244536	75 kg 165 lbs	Up to DP-45

* Glass has to be structurally adhered against Sash Upstand.

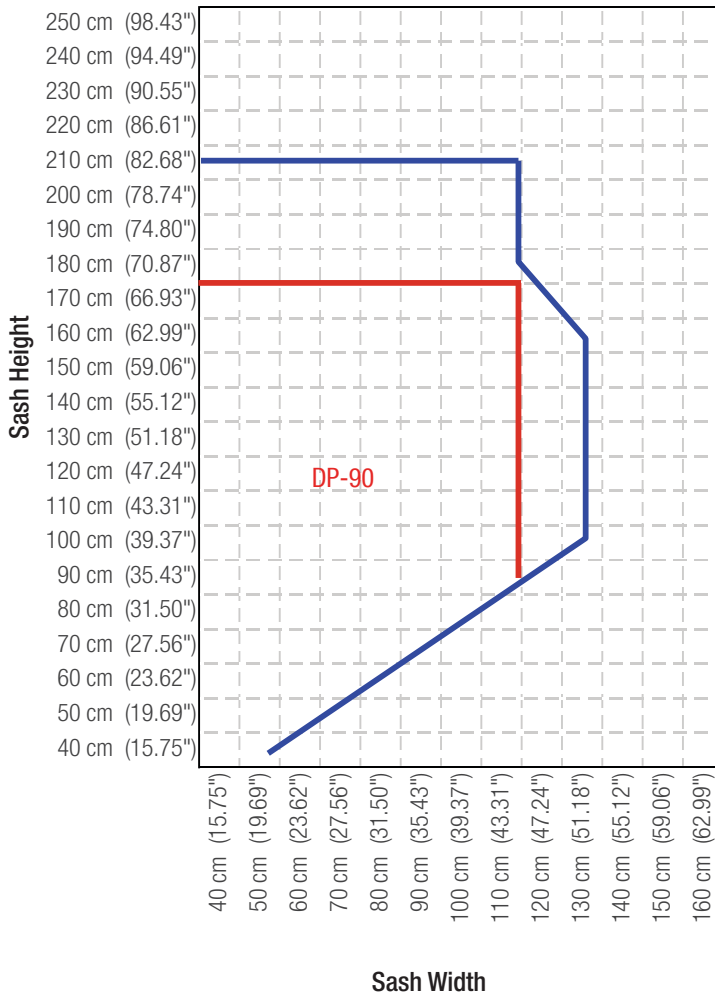
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

SIZE LIMITATIONS

60 mm Z-Sash (554051)

Tilt-Turn

Color: Non-White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	35 x 28 x 2 	244536	75 kg 165 lbs	Up to DP-30
	35 x 28 x 2 	244536	75 kg 165 lbs	Up to DP-90

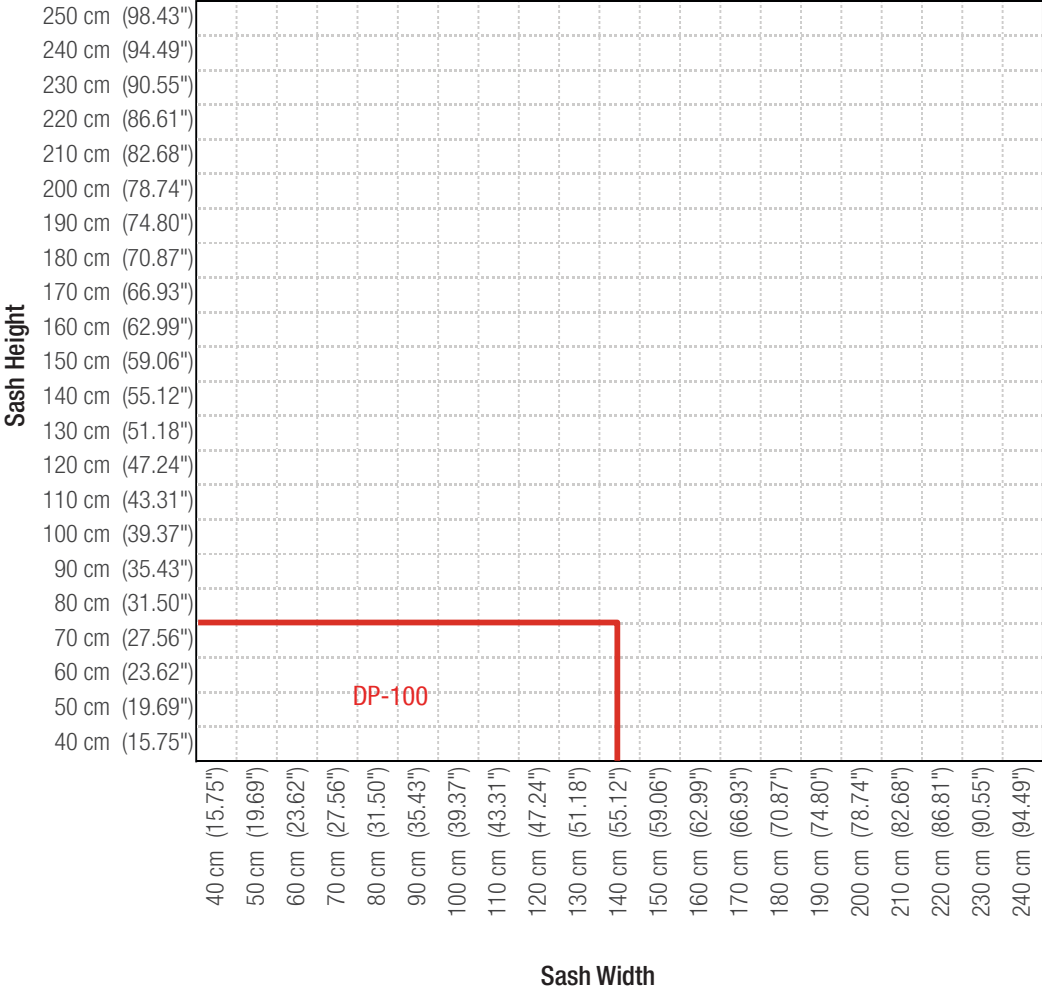
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
SIZE LIMITATIONS

60 mm Z-Sash (554051)

Hopper

Color: White / Non-White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	35 x 28 x 2 	244536	75 kg 165 lbs	DP-100

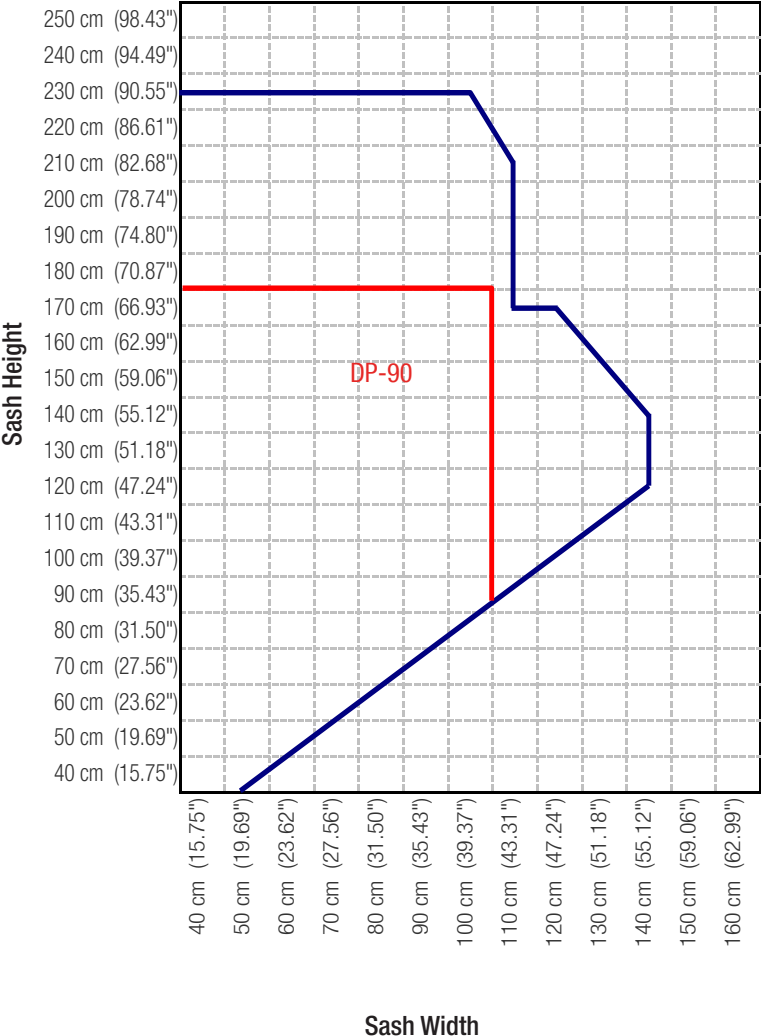
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

SIZE LIMITATIONS

74 mm Z-Sash (554081)

Tilt-Turn

Color: White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	35 x 42 x 2 	244496	75 kg 165 lbs	Up to DP-30
	35 x 42 x 2 	244496	75 kg 165 lbs	Up to DP-90

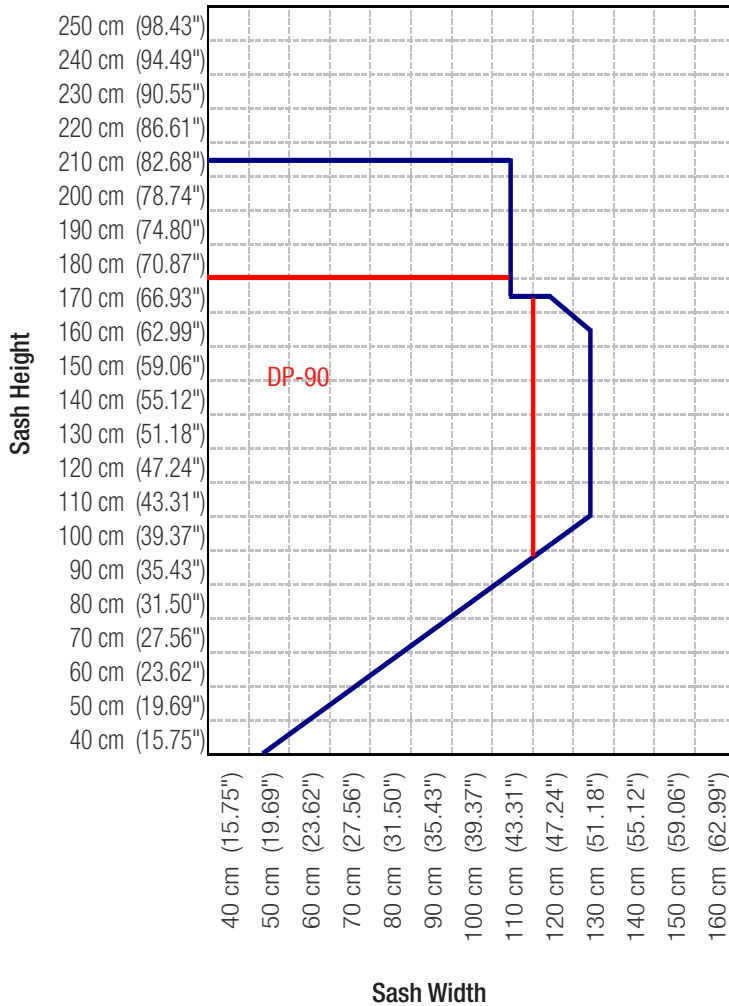
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

SIZE LIMITATIONS

74 mm Z-Sash (554081)

Tilt-Turn

Color: Non-White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	35 x 42 x 2 	244496	75 kg 165 lbs	Up to DP-30
	35 x 42 x 2 	244496	75 kg 165 lbs	Up to DP-90

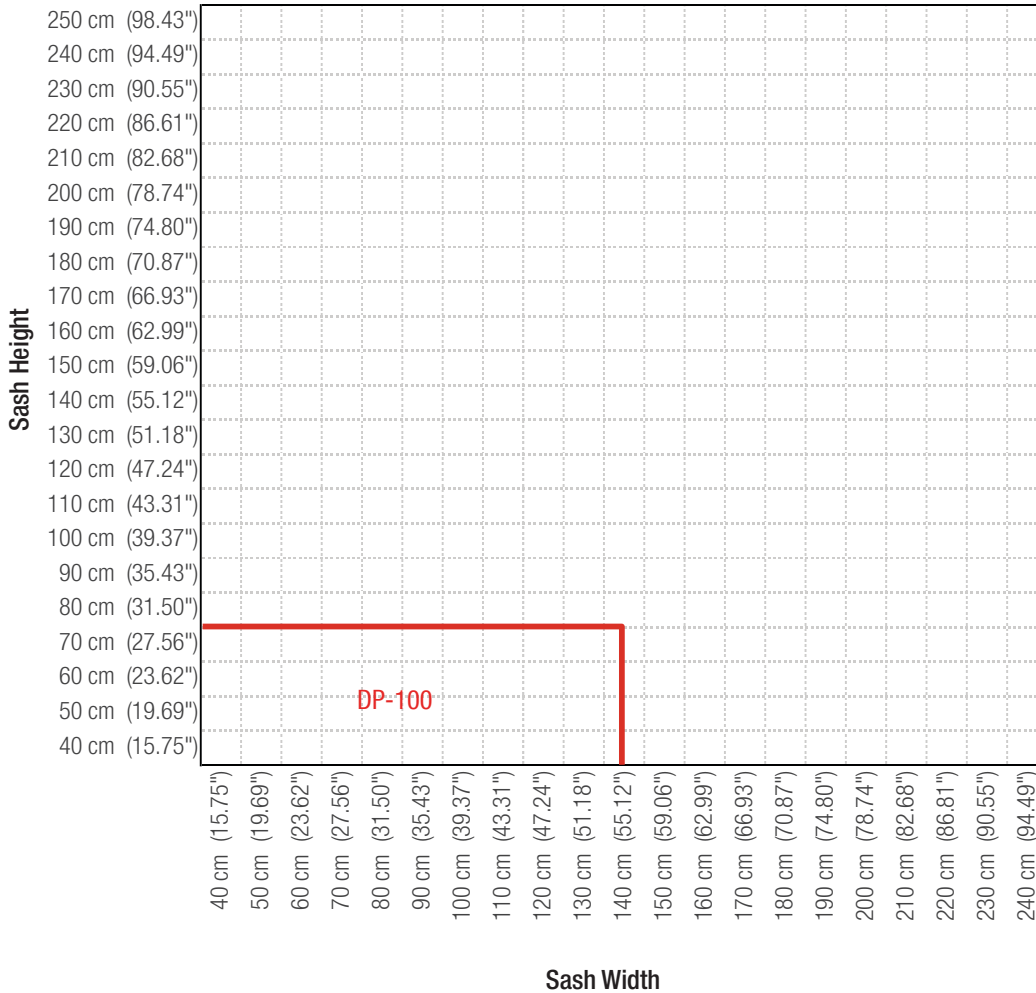
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
SIZE LIMITATIONS

94 mm T-Sash/Outswing (541170)

Awning

Color: White / Non-White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	35 x 42 x 2 	244496	75 kg 165 lbs	DP-100

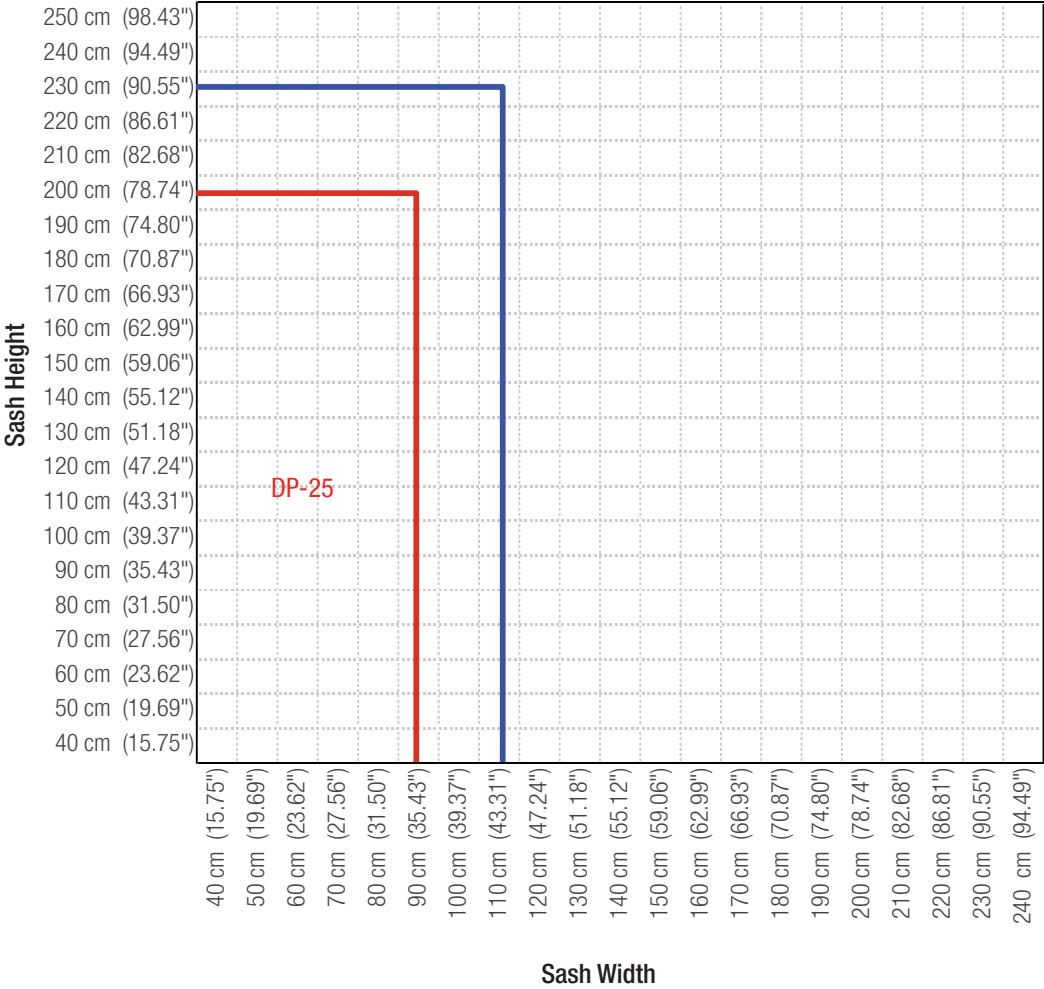
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

SIZE LIMITATIONS

98 mm Door Z-Sash (541130)

Inswing

Color: White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	40 x 50 x 2 	268742	75 kg 165 lbs	DP-25
	40 x 50 x 2 	251886	75 kg	DP-20

Note: Water performance levels depend on sill and hardware configurations used. Please check current test reports for additional details.

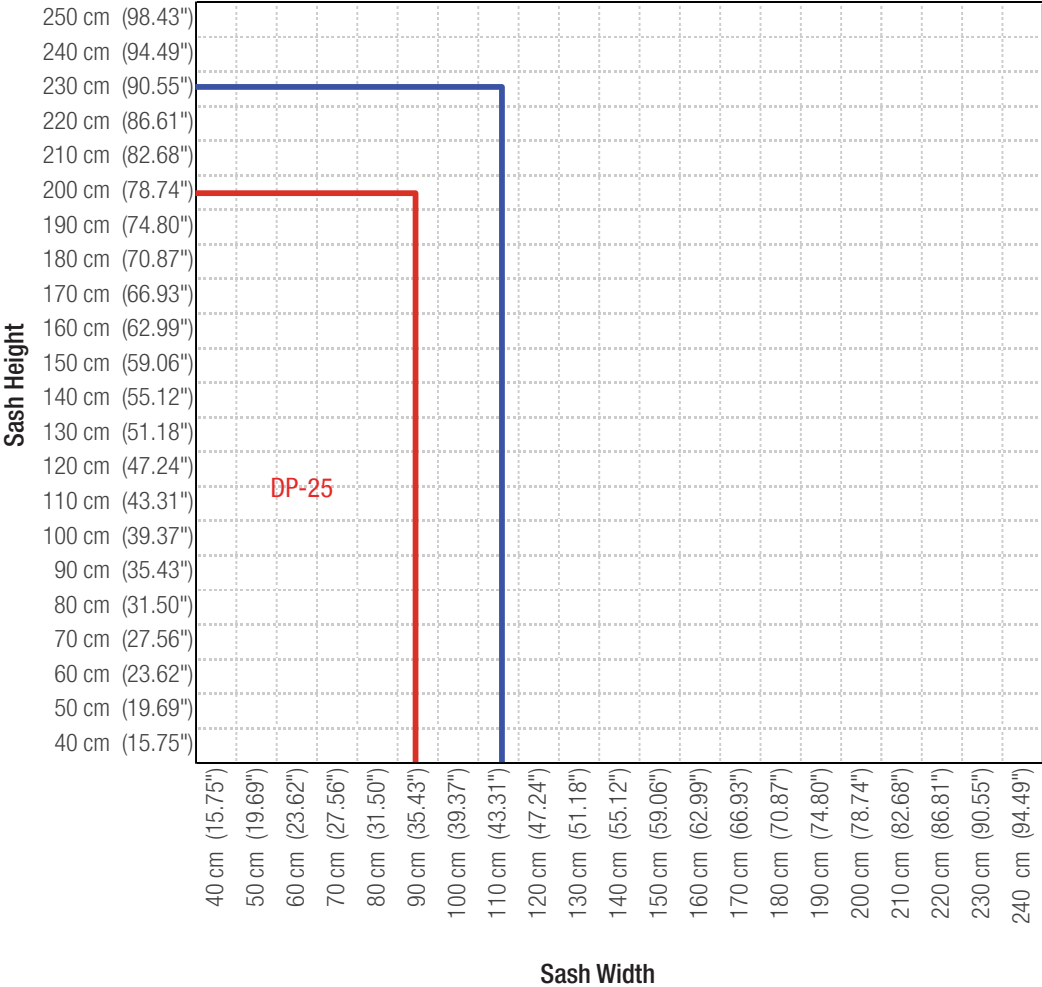
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SIZE LIMITATIONS

98 mm Door Z-Sash (541130)

Inswing

Color: Non-White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	40 x 50 x 2	268742	75 kg 165 lbs	DP-25
	40 x 50 x 2	251886	75 kg 165 lbs	DP-20

Note: Water performance levels depend on sill and hardware configurations used. Please check current test reports for additional details.

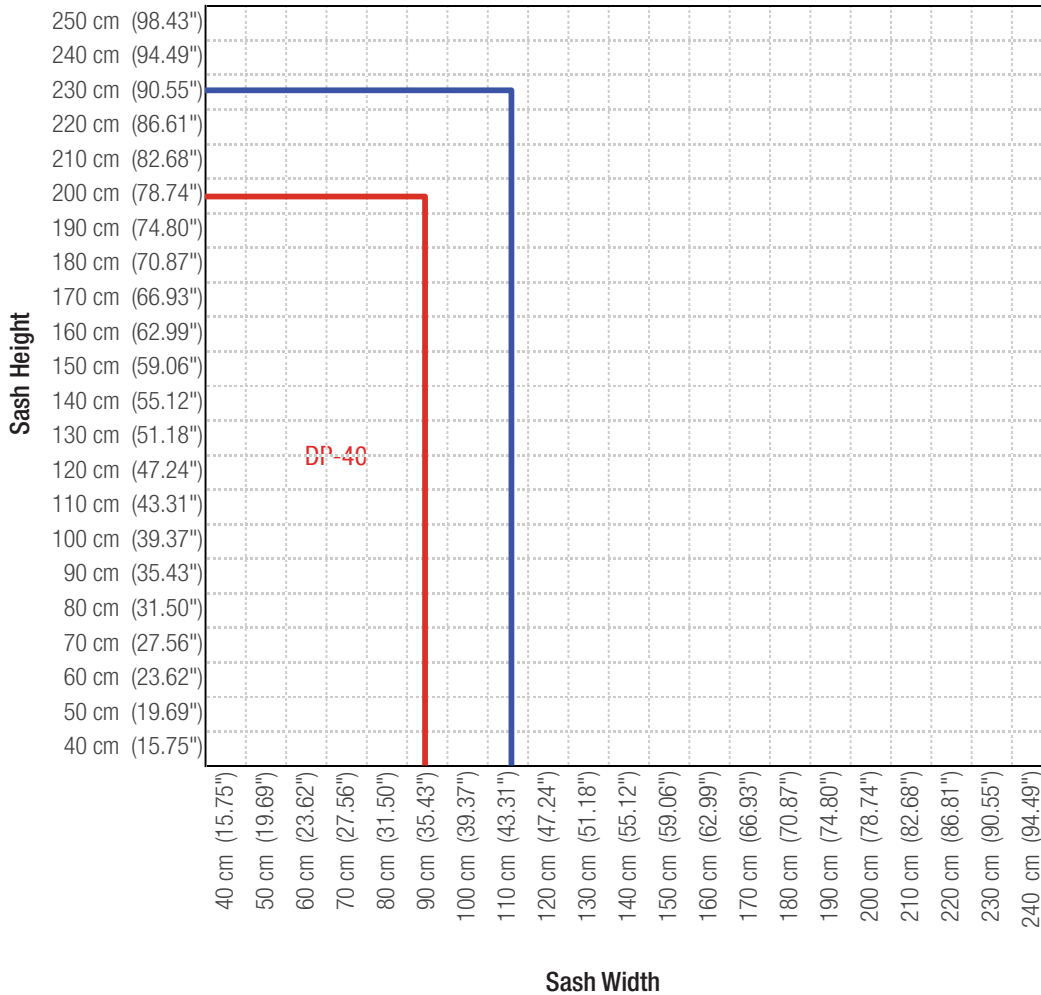
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SIZE LIMITATIONS

118 mm Door T-Sash / Outswing (541150)

Outswing

Color: White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	40 x 50 x 2	268742	75 kg 165 lbs	DP-40
	40 x 50 x 2	251886	75 kg 165 lbs	DP-20

Note: Water performance levels depend on sill and hardware configurations used. Please check current test reports for additional details.

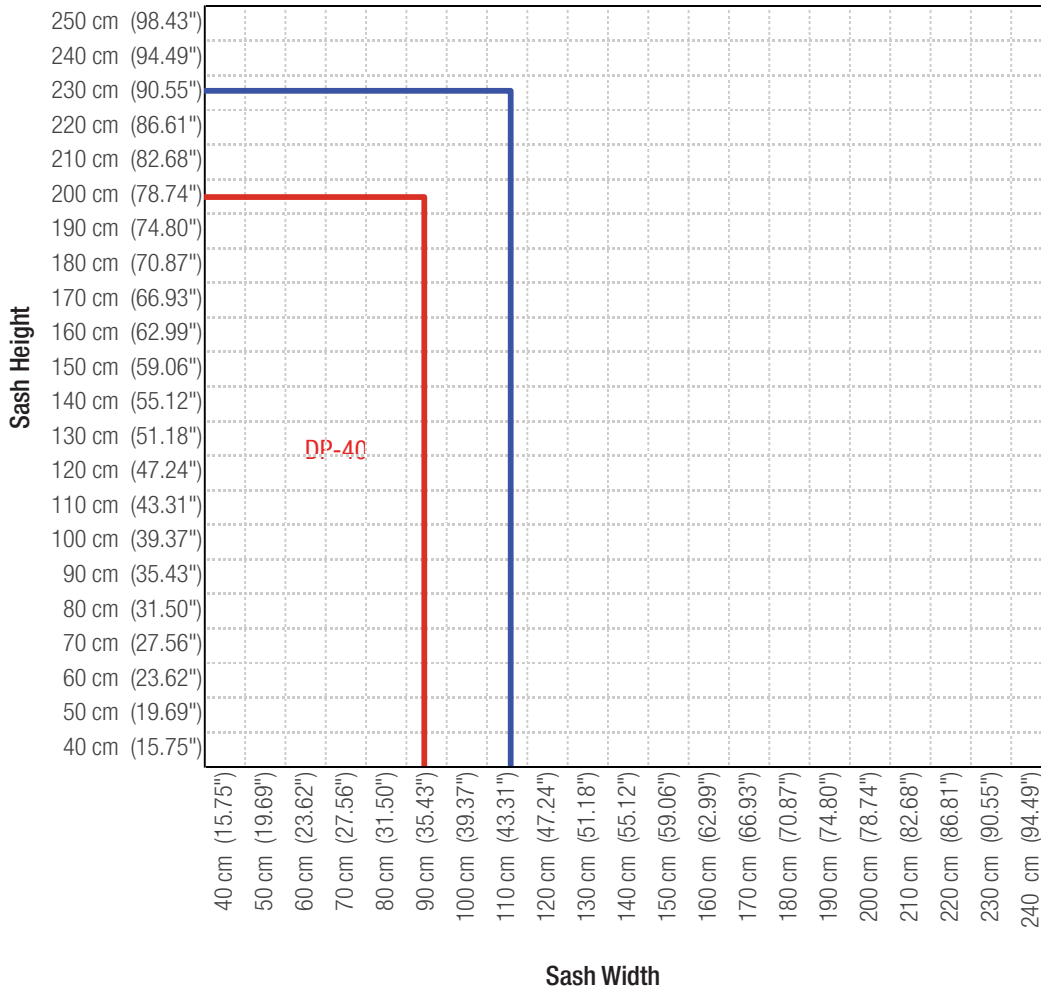
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

SIZE LIMITATIONS

118 mm Door T-Sash / Outswing (541150)

Outswing

Color: Non-White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	40 x 50 x 2 	268742	75 kg 165 lbs	DP-40
	40 x 50 x 2 	251886	75 kg 165 lbs	DP-20

Note: Water performance levels depend on sill and hardware configurations used. Please check current test reports for additional details.

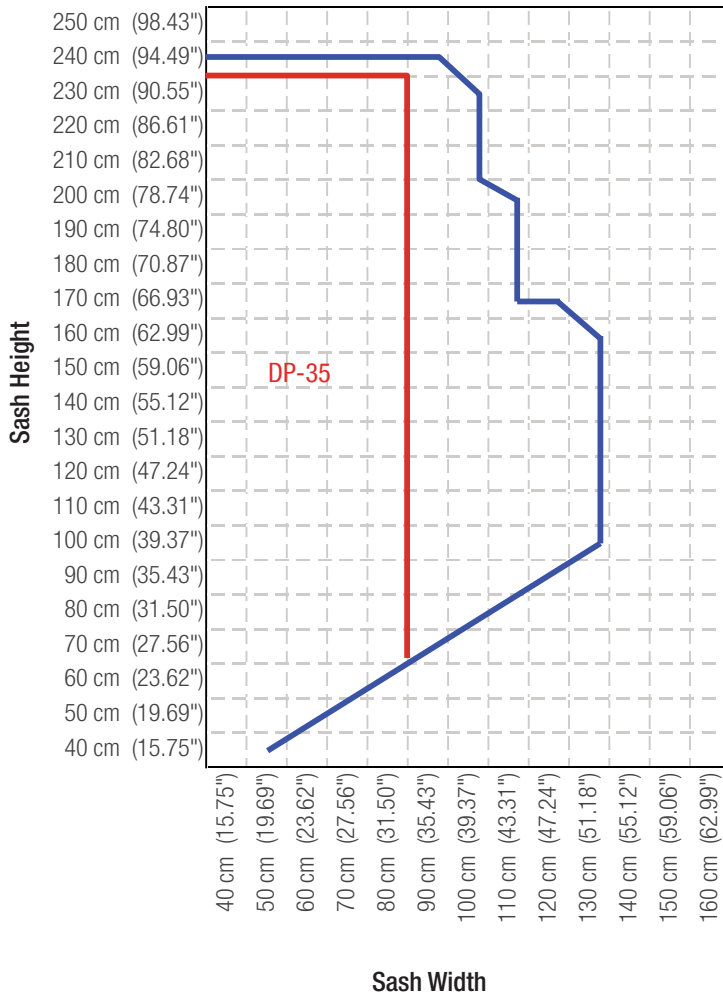
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SIZE LIMITATIONS

118 mm Door T-Sash / Outswing (541150)

French XX

Color: White and Non-White



	Reinforcement	Article Number	Maximum Glass Weight	Design Pressure
	40 x 50 x 2	268742	75 kg 165 lbs	DP-35
	40 x 50 x 2	251886	75 kg 165 lbs	DP-20

Note: Water performance levels depend on sill and hardware configurations used. Please check current test reports for additional details.

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