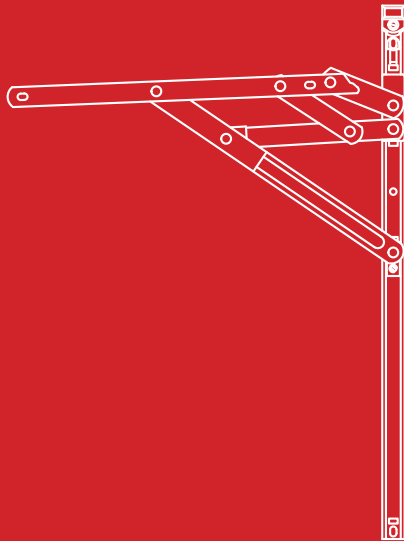


# Friction Hinges





# Choosing Your Friction Hinge

## IDENTIFICATION

### 1. Identify the Required Friction Hinge Stack Height

The friction hinge stack height required will usually be dictated by the profile system being fabricated - consult your profile system manual for details of their recommended stack height. Alternatively contact the Mila Technical department on: 01327 707300.



#### To Measure the Stack Height of an Existing Friction Hinge:

With the friction hinge fully closed so that all of the arms are stacked on top of each other, measure from the bottom arm of the stay to the top arm. This measurement is the stack height. The standard stack heights for friction hinges are 13mm and 17mm.

### 2. Identify the Type of Friction Hinge Required

Different types of friction hinge are available for different purposes, the main types are:



#### Standard Friction Hinges

Standard hinges for use on side hung and top hung casement windows.



#### Restricted Friction Hinges

Friction hinges with a built-in restrictor to restrict first opening position to a maximum of 100mm for safety.



#### Egress Easy Clean Friction Hinges

As below but also incorporating an easy-clean position for safe cleaning of the glass from inside.



#### Heavy Duty Friction Hinges

Profile specific, these hinges are wider than standard hinges and are designed for use on larger casement windows.



#### Egress Friction Hinges

Friction hinges with a wide opening angle for emergency egress. Allow casement windows to satisfy the emergency egress requirements of Approved Document B of the Building Regulations.

### 3. Do Not Exceed the Recommended Maximum Sash Weight Limit

When selecting friction hinges note their recommended maximum sash sizes and weights – these should not be exceeded. You should also consult your profile system manual for details of their recommended maximum sash sizes and weights.

### 4. Identify the Material Specification Required

Friction hinges are usually manufactured from one of two types of stainless steel:

**Ferritic:** Hinges manufactured from type 430 stainless steel.

**Austenitic:** Suitable for coastal installations or applications subject to any form of chemical contamination.

# Friction Hinge Selection Guide



## AT A GLANCE PRODUCT MATRIX

	Page Number	Accreditation BBA	Accreditation Secured by Design	Guaranteee 5 Year Mechanical	Guaranteee 10 Year Mechanical	Max Sash Weight 38kg+	Max Sash Weight 38kg	Max Sash Weight 24kg	Max Sash Weight 22kg	Max Sash Weight 21kg	Max Sash Weight 20kg	Stackl Height 17mm	Stackl Height 16mm	Stackl Height 14mm	Stackl Height 13mm	Application Heavy Duty	Application Side Hung	Application Top Hung	Window Opening Emergency Exit & Easy-Clean	Window Opening Emergency Exit	Window Opening Restricted	Window Opening Standard
iDeal Standard	63	✓	✓	✓	✓				✓			✓			✓	✓	✓	✓				✓
iDeal Egress	65	✓	✓	✓					✓			✓			✓		✓			✓		
iDeal Egress Easy Clean	67	✓	✓	✓						✓		✓			✓	✓	✓	✓	✓			
iDeal Restricted	69	✓	✓	✓		✓						✓			✓	✓	✓	✓			✓	
Heavy Duty Standard	71	✓	✓	✓	✓							✓		✓	✓	✓	✓	✓				✓
Heavy Duty Egress	73	✓	✓	✓	✓							✓			✓	✓	✓	✓		✓		
Heavy Duty Egress Easy Clean	75	✓	✓	✓	✓							✓			✓	✓	✓	✓	✓			
Yale Defender Standard	77	✓			✓	✓							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Yale Defender Restricted	79	✓			✓	✓						✓	✓		✓	✓	✓	✓			✓	
Yale Defender Egress Easy-Clean	81	✓			✓			✓				✓	✓		✓		✓		✓			
Yale Standard	83	✓			✓			✓				✓			✓	✓	✓	✓				✓



# iDeal Friction Hinge



## PRODUCT INFORMATION



- Manufactured from high grade Ferritic (430) stainless steel
- Available in both top hung and side hung applications
- Stack heights - 13mm, 17mm
- Top hung sizes - 8", 10", 12", 16", 20" and 24"
- Top hung recommended maximum sash weight - 50 kg
- Side hung sizes - 12", 16"
- Side hung recommended maximum sash weight - 22 kg
- Operational reliability - cycle tested to 20,000 cycles
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- Police Preferred Specification - Secured by Design accredited used in conjunction with iDeal casement hinge protector. See page 353.

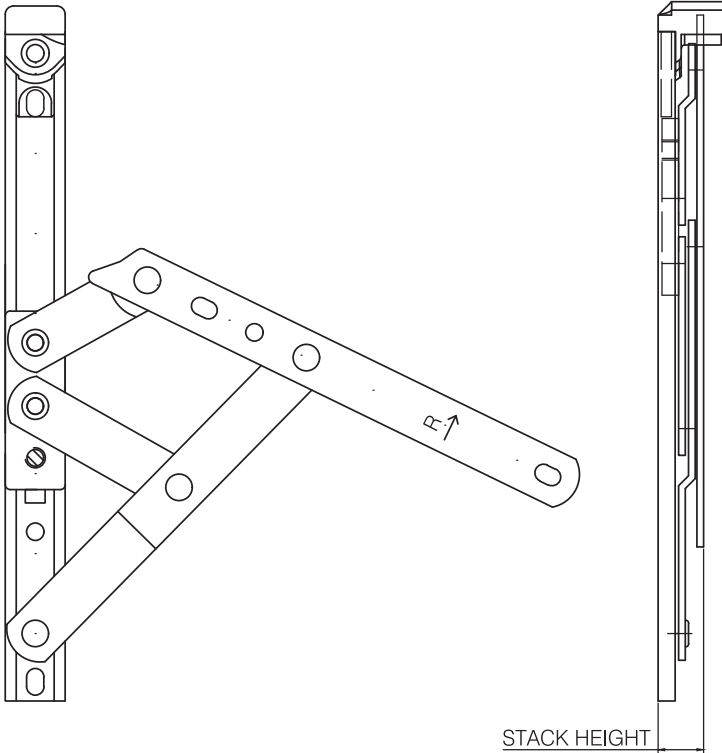
## GUARANTEES



# iDeal Friction Hinge



## TECHNICAL DRAWINGS



## PART NUMBERS

Description	Size (")	Opening (")	Width (mm)	Height (mm)	Weight (kg)	13mm Stack Height	17mm Stack Height
Top Hung	8	64	1300	300	10	022608	022648
Top Hung	10	86	1300	450	16	022610	022650
Top Hung	12	87	1300	600	21	022612	022652
Top Hung	16	84	1300	700	22	022616	022656
Top Hung	20	42	1300	900	24	022620	022660
Top Hung	24	38	1300	1500	50	022624	022664
Side Hung	12	87	600	1300	16	022632	022672
Side Hung	16	84	700	1300	22	022636	022676



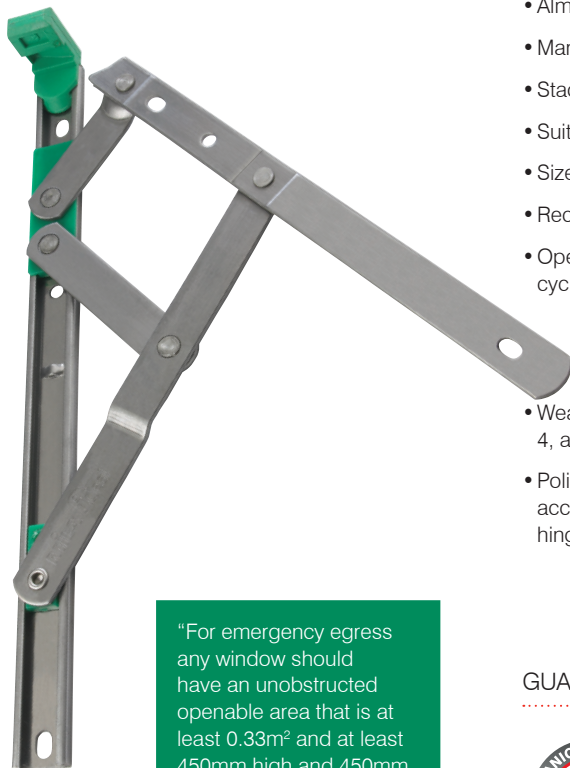
# iDeal Egress Friction Hinge

Emergency exit



## PRODUCT INFORMATION

Green colour-coded end cap for easy 'emergency exit' recognition



"For emergency egress any window should have an unobstructed openable area that is at least 0.33m<sup>2</sup> and at least 450mm high and 450mm wide"

- Approved Document B

- Enables casement windows to satisfy the emergency egress requirements of Approved Document B of the Building Regulations
- Green colour-coded nylon end cap for easy 'emergency exit' recognition, handed
- Almost 90° opening for easy egress
- Manufactured from Ferritic (430) stainless steel
- Stack heights - 13mm, 17mm
- Suitable for side hung applications
- Sizes - 10", 12" or 16"
- Recommended maximum sash weight - 22 kg
- Operational reliability - cycle tested to 20,000 cycles
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- Police Preferred Specification - Secured by Design accredited used in conjunction with iDeal casement hinge protector. See page 353.

## GUARANTEES & COMPLIANCE



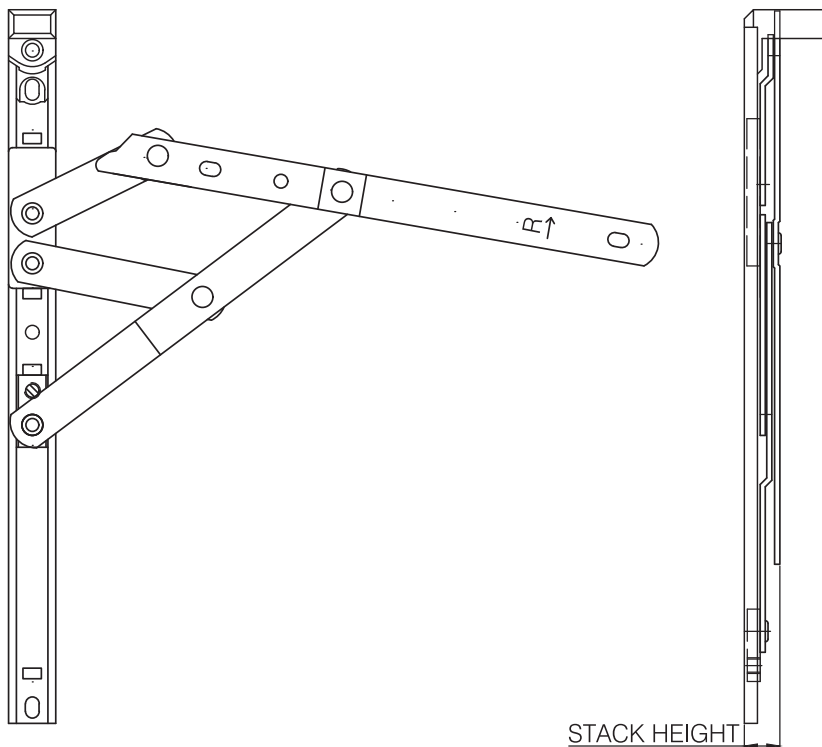
# iDeal Egress Friction Hinge

Emergency exit

Friction  
Hinges



## TECHNICAL DRAWINGS



## PART NUMBERS

Description	Size (")	Opening (°)	Width (mm)	Height (mm)	Weight (kg)	13mm Stack Height	17mm Stack Height
Side Hung	10	80	450	1300	12	022680	022690
Side Hung	12	84	600	1300	16	022682	022692
Side Hung	16	88	700	1300	22	022686	022696

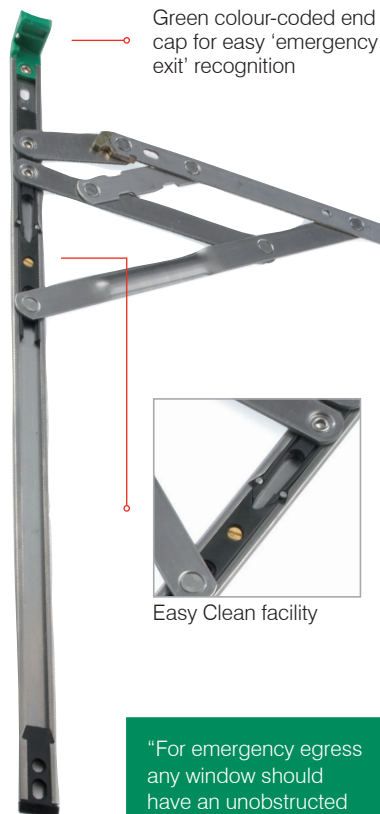


# iDeal Egress Easy-Clean

Emergency exit & easy-clean facility



## PRODUCT INFORMATION



Green colour-coded end cap for easy 'emergency exit' recognition



Easy Clean facility

"For emergency egress any window should have an unobstructed openable area that is at least 0.33m<sup>2</sup> and at least 450mm high and 450mm wide"

- Approved Document B

- Enables casement windows to satisfy the emergency egress requirements of Approved Document B of the Building Regulations
- Easy-clean facility enables sash to be moved to the opposite side of the frame for easy cleaning of external window pane
- Manufactured from Ferritic (430) stainless steel
- Green colour-coded nylon end cap for easy 'emergency exit' recognition, handed
- Almost 90° opening for easy egress
- Suitable for side hung applications
- Stack heights - 13mm, 17mm
- Side hung sizes - 12" or 16"
- Side hung recommended maximum sash weight - 21 kg
- Operational reliability - cycle tested to 20,000 cycles
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- Police Preferred Specification - Secured by Design accredited used in conjunction with iDeal casement hinge protector. See page 353.

## GUARANTEES





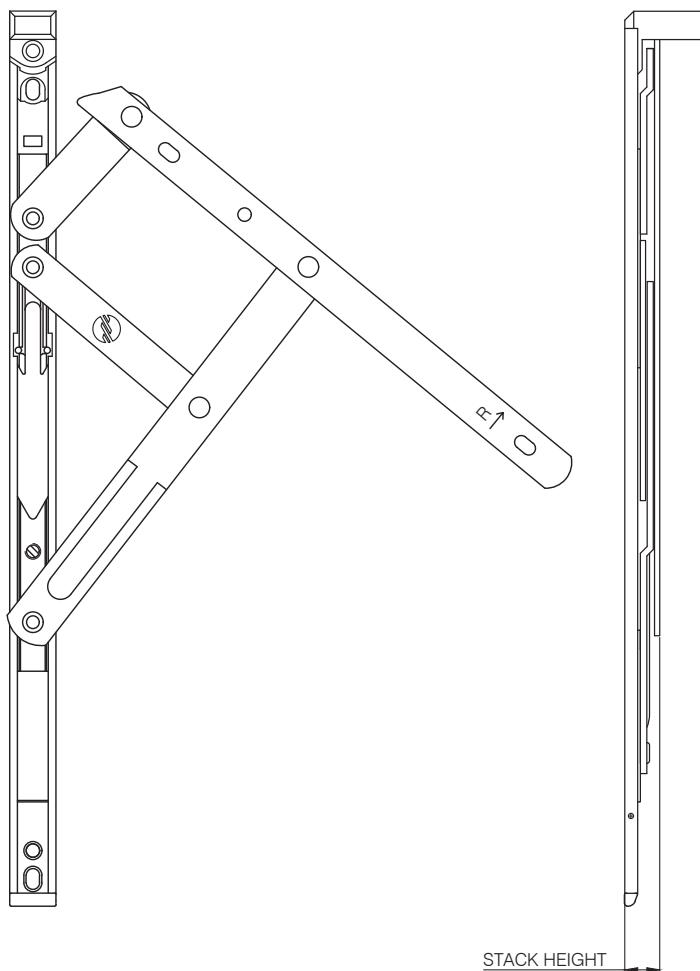
# iDeal Egress Easy-Clean

Emergency exit & easy-clean facility

Friction  
Hinges



## TECHNICAL DRAWINGS



## PART NUMBERS

Description	Size (")	Opening (°)	Width (mm)	Height (mm)	Weight (kg)	13mm Stack Height	17mm Stack Height
Side Hung	12	80	600	1300	15	022712	022732
Side Hung	16	88	700	1300	21	022716	022736



# iDeal Restricted

Integrated restriction feature



## PRODUCT INFORMATION



Quick release button

- Enables casement windows to comply with the safety requirements of BS6375 Part 2 (350 Newtons)
- Integral restrictor limits opening to 100mm
- 'Quick release' button for cleaning and ventilation that relocates automatically
- Suitable for both top hung and side hung casement windows
- Manufactured from Ferritic (430) stainless steel
- Stack heights - 13mm, 17mm
- Top hung sizes - 12", 16", 20", 24"
- Top hung recommended maximum sash weight - 20kg - 38kg
- Side hung sizes - 12", 16"
- Side hung recommended maximum sash weight - 18kg - 24kg
- Operational reliability - tested to 20,000 cycles
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- Police Preferred Specification - Secured by Design accredited used in conjunction with iDeal casement hinge protector. See page 353.

## GUARANTEES



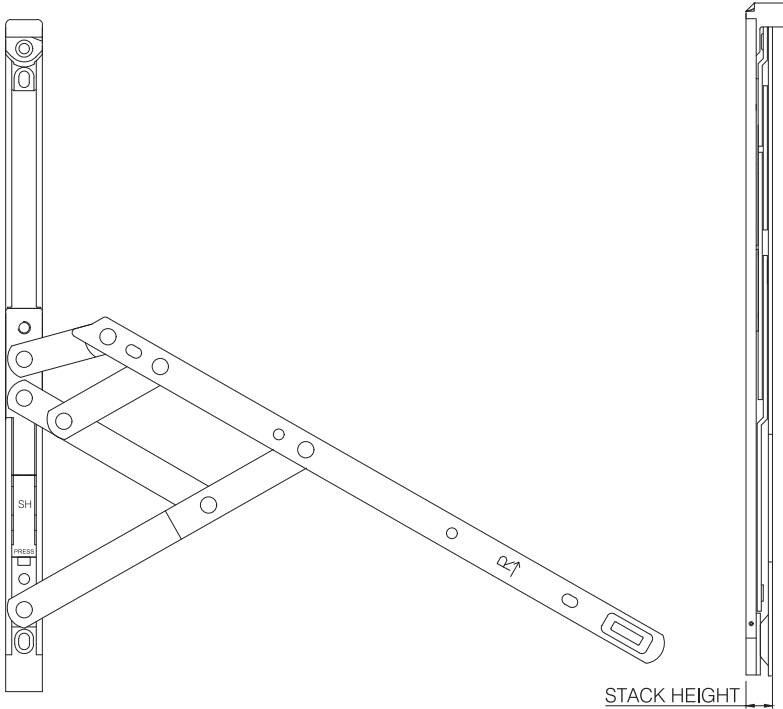
# iDeal Restricted

Integrated restriction feature

Friction  
Hinges



## TECHNICAL DRAWINGS



## PART NUMBERS

Description	Size (")	Opening (°)	Width (mm)	Height (mm)	Weight (kg)	13mm Stack Height	17mm Stack Height
Top Hung Pair	12	10/60	1300	600	20	022752	022772
Top Hung Pair	16	10/46	1300	700	22	022756	022776
Top Hung Pair	20	7/45	1300	900	24	022760	022780
Top Hung Pair	24	7/43	1300	1500	38	022764	022784
Side Hung Right Hand	12	10/60	600	1300	18	022802	022822
Side Hung Left Hand	12	10/60	600	1300	18	022803	022823
Side Hung Right Hand	16	10/46	700	1300	24	022804	022824
Side Hung Left Hand	16	10/46	700	1300	24	022805	022825



# Heavy Duty

For triple glazed & wide side hung windows



## PRODUCT INFORMATION



Stainless steel, standard TripleStay with robust arms, strengthened by 33%

- For use with triple glazing in standard profile systems and wide side hung sashes
- Can be fitted to a standard 16mm track without any modifications to the profile
- 33% stronger than a standard side hung friction stay
- Manufactured from Ferritic (430) stainless steel
- Supports the additional weight of triple glazed units in their frames whilst maintaining smooth operation
- 40kg maximum sash weight
- 900mm maximum rebate width
- Stack heights - 14mm, 17mm
- Size - 16"
- Independently tested to PAS24: 2012
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- Mechanical load tested to BS6375-2
- Police Preferred Specification - Secured by Design accredited used in conjunction with iDeal casement hinge protector. See page 353.
- Also available in egress and egress easy-clean versions

## GUARANTEES



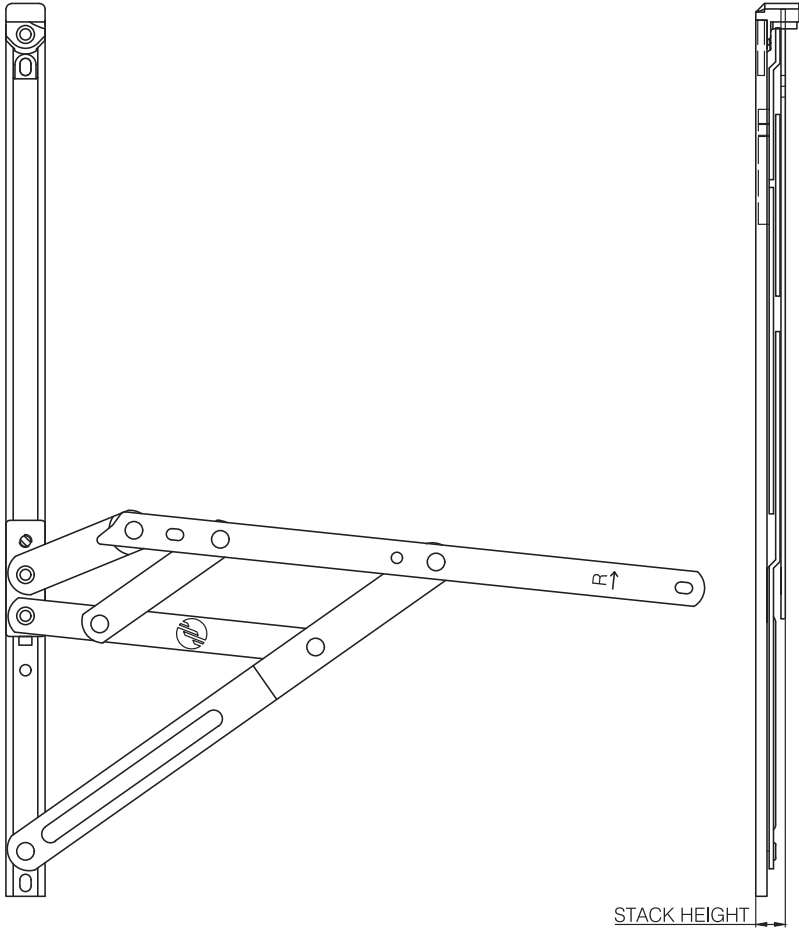
# Heavy Duty

For triple glazed & wide side hung windows

Friction  
Hinges



## TECHNICAL DRAWINGS



## PART NUMBERS

Description	Size (")	Opening (°)	Width (mm)	Height (mm)	Weight (kg)	14mm Stack Height	17mm Stack Height
Heavy Duty Side Hung	16	84 (+/- 2)	900	1300	40	022836	022846

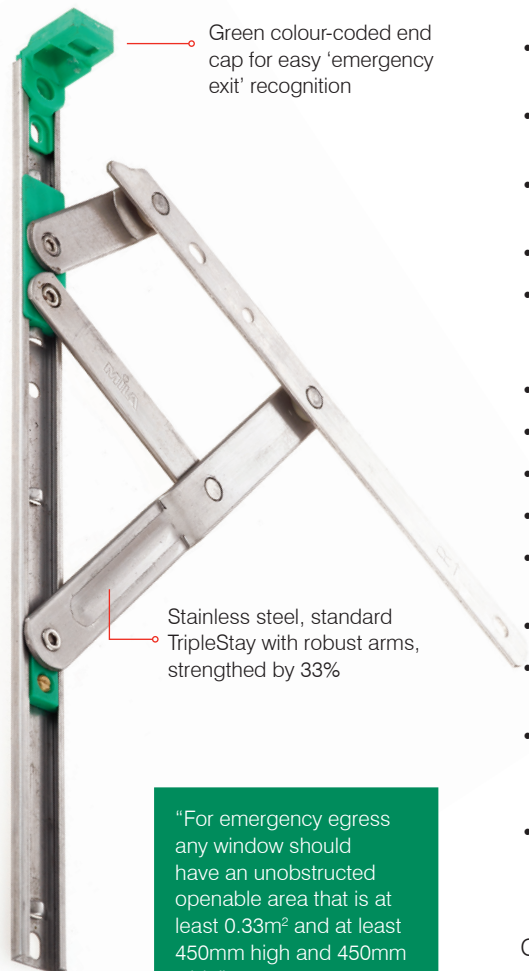


# Heavy Duty Egress

Emergency exit hinge for triple glazed windows  
& wide side hung windows



## PRODUCT INFORMATION



Green colour-coded end cap for easy 'emergency exit' recognition

Stainless steel, standard TripleStay with robust arms, strengthened by 33%

"For emergency egress any window should have an unobstructed openable area that is at least 0.33m<sup>2</sup> and at least 450mm high and 450mm wide"

- Approved Document B

- For use with triple glazing in standard profile systems and wide side hung sashes
- Meets the emergency egress requirements of Approved Document B
- Can be fitted to a standard 16mm track without any modifications to the profile
- 33% stronger than a standard side hung friction stay
- Manufactured from Ferritic (430) stainless steel
- Supports the additional weight of triple glazed units in their frames whilst maintaining smooth operation
- Stack heights - 14mm, 17mm
- Sizes - 10", 12", 16"
- 40kg maximum sash weight
- 900mm maximum rebate width
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- Mechanical load tested to BS6375-2
- Independently tested to PAS24: 2012 with iDeal casement hinge protector
- Police Preferred Specification - Secured by Design accredited used in conjunction with iDeal casement hinge protector. See page 353.
- Also available in standard and egress easy-clean versions

## GUARANTEES

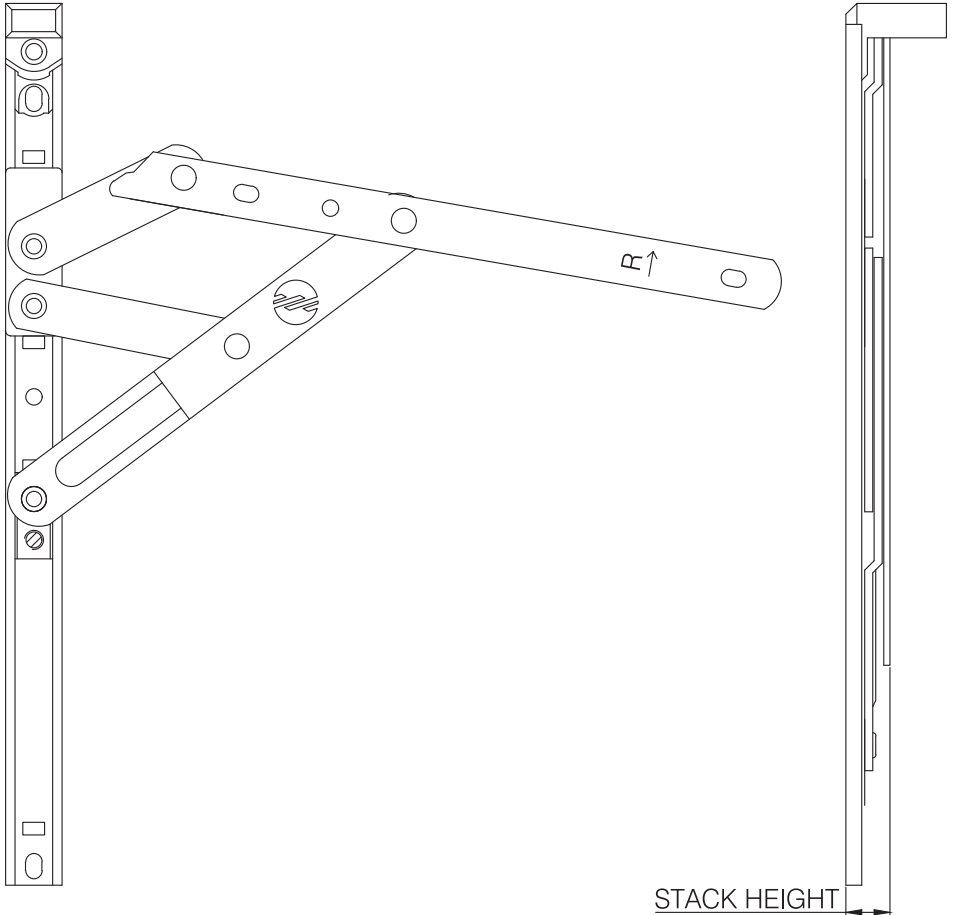


# Heavy Duty Egress

Emergency exit hinge for triple glazed windows  
& wide side hung windows



## TECHNICAL DRAWINGS



## PART NUMBERS

Description	Size (")	Opening (°)	Width (mm)	Height (mm)	Weight (kg)	14mm Stack Heigh	17mm Stack Height
Egress	10	80 (+/- 2)	500	1300	20	022850	022860
Egress	12	84 (+/- 2)	700	1300	30	022852	022862
Egress	16	88 (+/- 2)	900	1300	40	022856	022866



# Heavy Duty Egress Easy-Clean



Emergency exit & easy-clean for triple glazed windows

## PRODUCT INFORMATION



Release mechanism shown in closed and easy-clean positions, re-engages automatically

- Suitable for use with triple glazing in standard profile systems and wide side hung sashes
- Meets the emergency egress requirements of Approved Document B
- Easy-clean facility enables sash to be moved to the opposite side of the frame for easy cleaning of external window pane
- Can be fitted to a standard 16mm track without any modifications to the profile
- 33% stronger than a standard side hung friction stay
- Manufactured from stainless steel
- Supports the additional weight of triple glazed units in their frames whilst maintaining smooth operation
- Stack heights - 14mm, 17mm

- Sizes - 12", 16"
- 40kg maximum sash weight
- 900mm maximum rebate width
- Independently tested to PAS24: 2012
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- Mechanical load tested to BS6375-2
- Police Preferred Specification - Secured by Design accredited when used with iDeal casement hinge protector. See page 353.

## GUARANTEES

"For emergency egress any window should have an unobstructed openable area that is at least 0.33m<sup>2</sup> and at least 450mm high and 450mm wide"

- Approved Document B





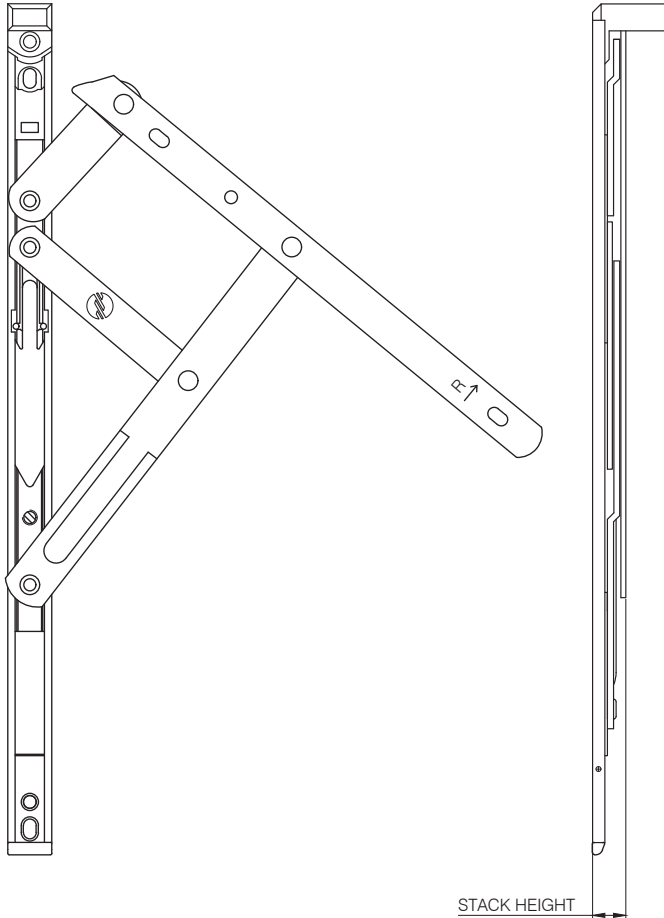
# Heavy Duty Egress Easy-Clean

Emergency exit & easy-clean for triple glazed windows

Friction  
Hinges



## TECHNICAL DRAWINGS



## PART NUMBERS

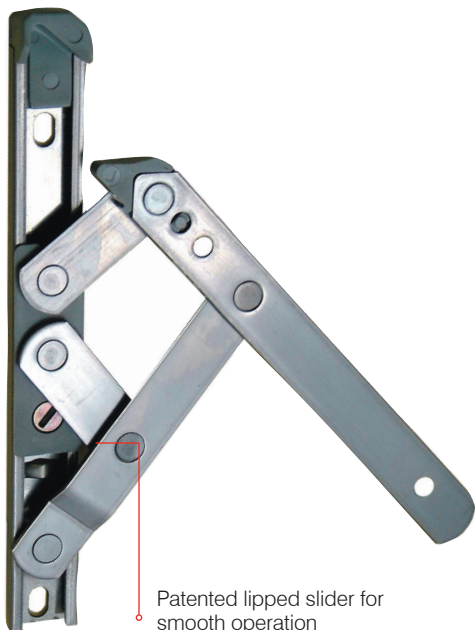
Description	Size (")	Opening (°)	Width (mm)	Height (mm)	Weight (kg)	14mm Stack Height	17mm Stack Height
Side Hung	12	80	700	1300	30	022872	022882
Side Hung	16	88	900	1300	40	022876	022886



# Defender Friction Hinge



## PRODUCT INFORMATION



Patented lipped slider for smooth operation

- Suitable for both top hung and side hung casement windows
- Simple friction adjustment without metal-to-metal contact
- Asymmetric location system for reliable weather-sealing
- Manufactured from high grade Austenitic (304) or Ferritic (430) stainless steel
- Standard Defender in 13mm stack height
- Defender Highline in 16mm and 17mm stack height
- Top hung sizes - 6" 8", 10", 12", 16", 20", 24"
- Top hung recommended maximum sash weight - 10kg - 40 kg
- Side hung sizes - 12", 16"
- Side hung recommended maximum sash weight - 24 kg
- Operational reliability - tested to 30,000 cycles
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- BBA approved

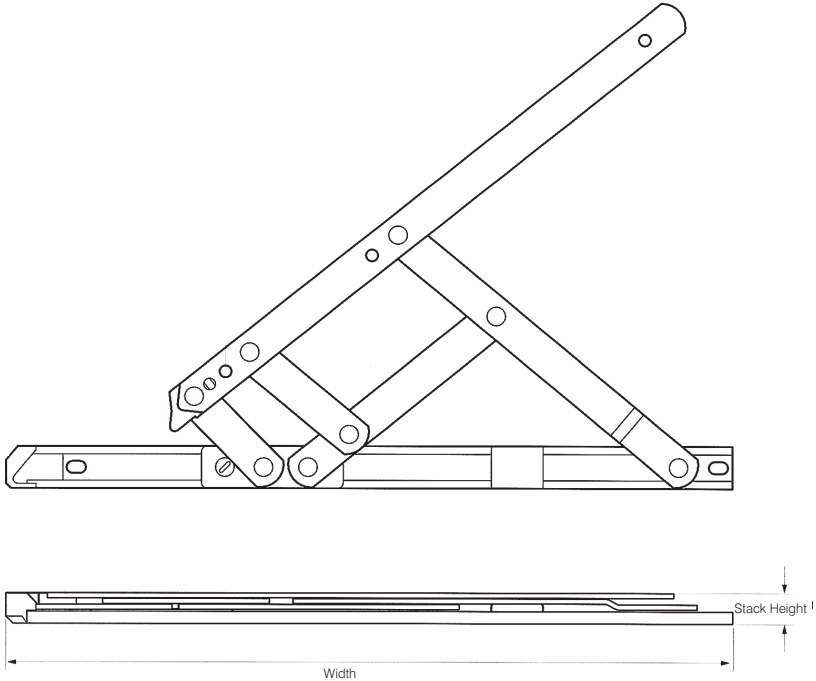
## GUARANTEES



# Defender Friction Hinge



## TECHNICAL DRAWINGS



## RECOMMENDED MAXIMUM SASH & PART NUMBERS

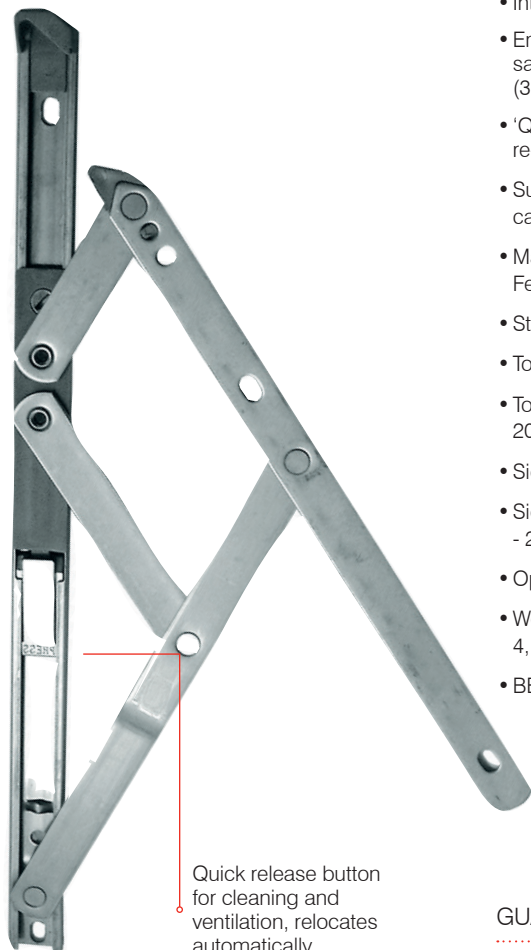
Description	Size (")	Width (mm)	Height (mm)	Weight (kg)	Opening (°)	Standard 13mm Stack Height	Highline 16mm Stack Height	Highline 17mm Stack Height
Top Hung	6	-	300	10	50°	028000	-	-
Top Hung	8	-	350	12	65°	028002T	028022	028042T
Top Hung	10	-	400	16	80°	028004	028024	028044
Top Hung	12	-	550	20	80°	028006	028026	028046
Top Hung	16	-	780	21	80°	028008	028028	028048
Top Hung	20	-	1100	26	50°	028010	028030	028050
Top Hung	24	-	1300	40	37.5°	028012	028032	028052
Side Hung	12	600	-	22	60°	028014	028034	028054
Side Hung	16	700	-	24	60°	028016	028036	028056



# Defender Restricted



## PRODUCT INFORMATION



Quick release button for cleaning and ventilation, relocates automatically

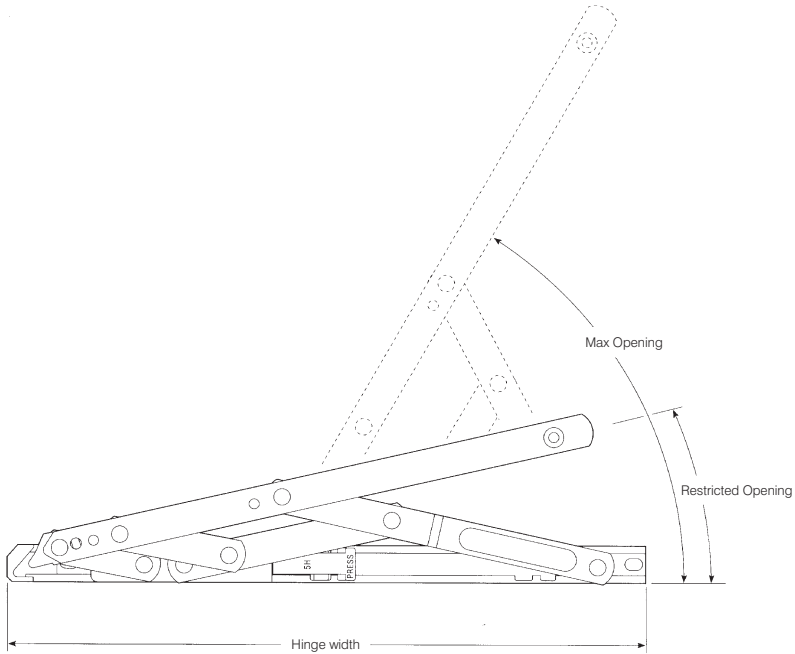
- Integral restrictor limits opening to 100mm
- Enables casement windows to comply with the safety device requirements of BS6375 Part 2 (350 Newtons)
- 'Quick release' button for cleaning and ventilation, re-engages automatically
- Suitable for both top hung and side hung casement windows
- Manufactured from high grade Austenitic (304) or Ferritic (430) stainless steel
- Stack heights - 13mm, 16mm, 17mm
- Top hung sizes - 12", 16", 20", 24"
- Top hung recommended maximum sash weight - 20kg - 40 kg
- Side hung sizes - 12" or 16"
- Side hung recommended maximum sash weight - 22kg - 24kg
- Operational reliability - tested to 30,000 cycles
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- BBA approved

## GUARANTEES





## TECHNICAL DRAWINGS



## PART NUMBERS

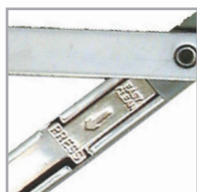
Description	Size (")	Width (mm)	Height (mm)	Weight (kg)	Opening (°)	13mm Stack Height	16mm Stack Height	17mm Stack Height
Top Hung	12	-	550	20	65° (14°)	028160	028180	028200
Top Hung	16	-	780	21	59° (10°)	028162	028182	028202
Top Hung	20	-	1100	26	50° (8°)	028164	-	028204
Top Hung	24	-	1300	40	37.5° (7°)	028166	028186	028206
Side Hung Left Hand	12	600	-	22	58° (13°)	028168	-	028208
Side Hung Right Hand	12	600	-	22	58° (13°)	028169	-	028209
Side Hung Left Hand	16	700	-	24	58° (11°)	028170	-	028210
Side Hung Right Hand	16	700	-	24	58° (11°)	028171	-	028211



# Defender Egress Easy-Clean



## PRODUCT INFORMATION



Release mechanism  
enables easy-cleaning

- Enables casement windows to open fully for emergency exit to comply with Building Regulations Approved Document B for fire escape windows
- 'Quick release' button for cleaning and ventilation, re-engages automatically
- Suitable for side hung casement windows
- Manufactured from high grade austenitic (304) and ferritic (430) stainless steel
- Stack heights - 13mm, 16mm, 17mm
- Sizes - 12", 16"
- Recommended maximum sash weight 22kg - 24 kg
- Operational reliability - tested to 30,000 cycles
- Weather resistance - tested to BSEN 1670 Grade 4, achieving 240 hours salt spray
- BBA approved
- Box quantity x 25

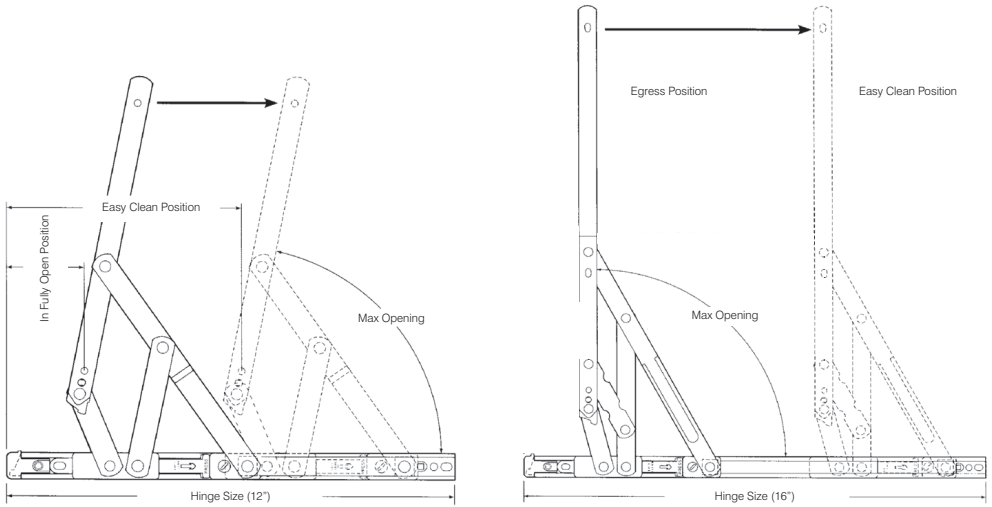
## GUARANTEES



# Defender Egress Easy-Clean



## TECHNICAL DRAWINGS



## PART NUMBERS

Description	Size (")	Width (mm)	Height (mm)	Weight (kg)	Opening (°)	13mm Stack Height	16mm Stack Height	17mm Stack Height
Defender Egress	12	600	-	22	80°	028284	028288	028292
Defender Egress	16	700	-	24	90°	028286	028290	028294



# Standard Friction Hinge



Secured by Design



Police Preferred Specification

## PRODUCT INFORMATION



- Standard and highline stack heights
- Suitable for PVCu, timber and aluminium windows
- Top hung sizes: 8" 10" 12" 16" 20" 24"
- Stack heights - 13mm, 17mm
- Side hung sizes: 12" 16"
- Made from ferritic stainless steel
- Operational reliability - tested to 20,000 cycles
- Police Preferred Specification - Secured by Design accredited when used with iDeal casement hinge protector

## GUARANTEES



Secured by Design



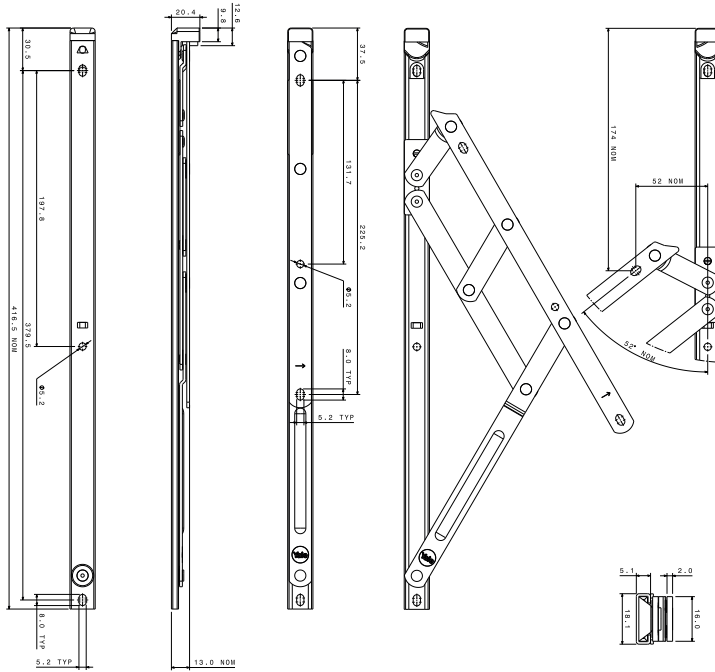
Police Preferred Specification



# Standard Friction Hinge



## TECHNICAL DRAWINGS



## PART NUMBERS

Description	Size (")	Width (mm)	Height (mm)	Weight (kg)	Opening Angle	13mm Stack Height	17mm Stack Height
Top Hung	8	-	350	12	60°	023408	023458
Top Hung	10	-	400	16	58°	023410	023460
Top Hung	12	-	550	20	65°	023412	023462
Top Hung	16	-	780	21	52°	023416	023466
Top Hung	20	-	1000	24	42°	023420	023470
Top Hung	24	-	1200	35	38°	023424	023474
Side Hung	12	600	-	22	60°	023432	023482
Side Hung	16	700	-	24	60°	023436	023486
Side Hung Egress	12	600	-	22	82°	023442	023492
Side Hung Egress	16	700	-	24	85°	023446	023496
Side Hung Egress Easy-Clean	16	700	-	24	84°	-	028751



