

# PRO-RAILING.IS

INNOVATIVE GLASS RAILING SYSTEMS

## Svalalokanir



Svalalokanir veita skjól fyrir veðri og vindum og minnka kostnað við viðhald

# Svalalokanir

ProRailing býður nokkrar gerðir svalalokana á handrið ma. hefðbundnar svalalokanir með felligluggum frá Malmerk Klaasium í Eistlandi.

Einnig framleiðum við eigin kerfi í verksmiðju okkar í Árósum undir merkinu AG bæði felliloknair og rennihurðar sem bæði er notað á svalir og palla.

Munur er á svalalokunum sem festar eru á handrið og þeim sem standa frá gólfi til lofts, sem liggur í þyngd og þykkt glers, brautum og hjólabúnaði.

Í loknunum frá Malmerk Klaasium sem eru traustar og endingagóðar er notað 8, 10 og 12mm hert gler eftir reiknuðu vindálagi og hve hátt kerfið er. Þessar lokanir eru hannaðar fyrir íslenskt veðurfar og eru útbreiddar um alla skandinavíu og með 5 ára ábyrgð á búnaði.

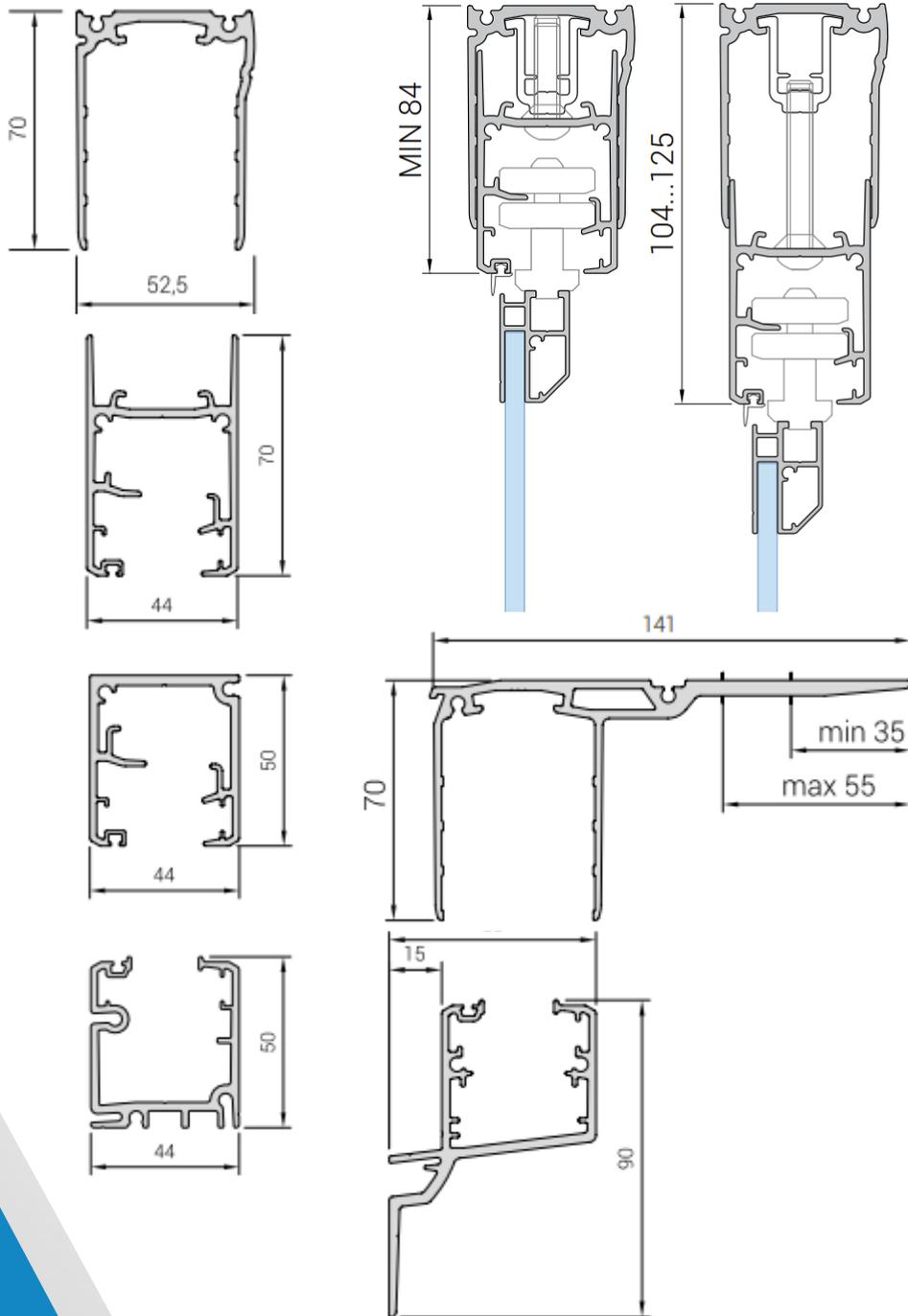
Svalalokanir frá Malmerk veita skjól fyrir veðri, vindi, regni og snjó og vernda því svalirnar, draga úr hljóðmengun og hitatapi og veita því einnig vörn gegn veðrisem minnkar viðhaldskostnað.

Að auki verður notalegra að sitja á svölunum þar sem sem sólin hitar upp rýmið og alltaf er logn. Allt gler er hert **CE** merkt og er glerþykktir, prófílar og festingar útreiknað eftir máli og álagskröfum á hverjum stað.



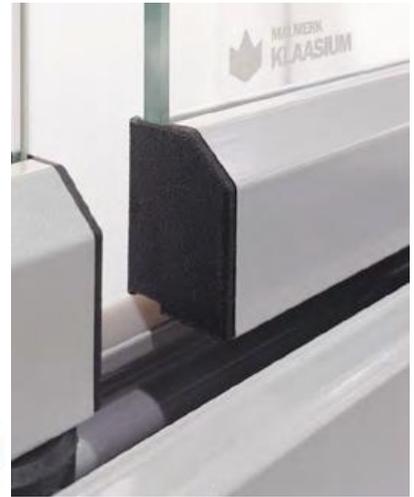
# Prófílar - snið

Allt að 40mm stillimöguleiki í top prófil



# Íhlutir

Allar festingar og skúfur eru úr áli eða ryðfrú stáli  
hjálalegur úr ryðfrú stáli.  
Endatappar í fals og á hornum  
Akryl listar á milli glerja eykur þéttleikann



## Rollers

## Recessed units

### KS10-0001

Upper locking roller



### KS10-0002

Upper opening roller



### KS10-0009

Lower hinge pin  
of the first glass



### KS10-0010

Lower locking roller



### KS10-0003

Lower locking roller



### KS10-0004

Lower hinge roller  
for first  
glass



### KS10-0015

Lower locking pin  
without end caps



### KS10-0016

Lower locking pin  
with end caps



### KS10-0005

Lower opening roller



### KS10-0006

Lower opening latch



### SU10-0007

Securing block for  
the last glass



## Ventilation units

## Hole covers

### KS10-0007

Ventilation  
positioner



### SK10-0038

Ventilation  
position holder



### SK10-0041

Upper opening-hole  
cover

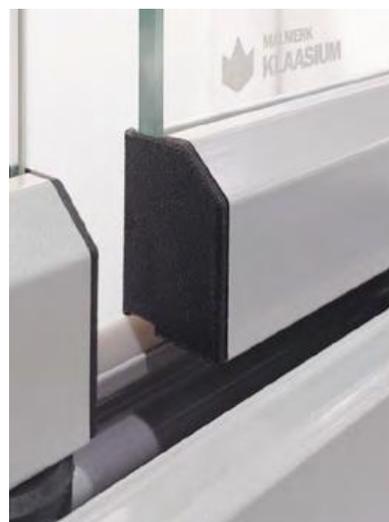


### SK10-0040

Lower opening-hole  
cover



# Íhlutir



## SK10-0013

End cap 90° right side

6 mm



## SK10-0014

End cap 90° left side



## SK10-0011

End cap 45° right side



## SK10-0012

End cap 45° left side



## SK10-0017

End cap 90° right side

8 mm



## SK10-0018

End cap 90° left side



## SK10-0015

End cap 45° right side



## SK10-0016

End cap 45° left side



## SK10-0021

End cap 90° right side

10 mm



## SK10-0022

End cap 90° left side



## SK10-0019

End cap 45° right side



## SK10-0020

End cap 45° left side



## Accessories

## SK10-0030

Glass panel fixing/  
stopping detail



## KS10-0008

Opened glass panels  
securing band



## SK10-0039

Roller support



## SK10-0042

Locker comb



# Tækniupplýsingar



1	Upper steering profile
2	Lower steering profile
3	Upper glass panel profile
4	Lower glass panel profile
5	Glass
6	Upper opening roller
7	Lower opening roller
8	Lower opening latch
9	Ventilation positioner
10	Ventilation position holder
11	Roller support
12	Upper opening-hole cover
13	Lower opening-hole cover
14	Opening handle
15	Glass panel profile end cap
16	Bottom steering profile end-plate/cap
17	Optional weather strip to between glasses
18	Optional weather strip to walls

**PROFILES**  
**Aluminium**

**SURFACE TREATMENT**  
**Powder-coated**

**COLOUR CHART**  
**RAL**

# Tækniupplýsingar

System fully closed



System partly opened



System fully opened



## Glass panels

Glass panels are attached to the glass panel profile with four stainless steel rivets and polyurethane glue. The upper glass panel profile is equipped with four ball-bearing rollers and the lower glass panel profile with two sliding rollers. Every panel is equipped with a small plastic opening handle. The glass panels can be opened like pages of a book inside the balcony.

Glass thickness	6, 8 or 10 mm
System max height	6 mm glass max 2000 mm 8 mm glass max 2500 mm 10 mm glass max 3100 mm
Glass type	Tempered with ground edges
Glass colour	Transparent, bronze, grey or silkscreen printed
Optimum glass panel width	500-700 mm
Minimum glass panel width	220 mm
Opening of the glass panels	Max 7 glasses per opening
Over the corner opening	Over the corner opening is possible depending on the balcony configuration
Gap between the glass panels	2-4 mm (can be closed with PVC weather strips)

## Profiles

Material	Aluminium
Max profile length	6000 mm (Balconies that are more than 6 m long must be continued with a new profile)
Surface treatment and colour chart	Powder-coated RAL
Detailed profile information	Page 6-7

# Tækniupplýsingar

Table 1 **Terrain category**  
(according to Eurocode standards)

Terrain category	Description
0	Sea, coastal area exposed to the open sea.
I	Lake or area with negligible vegetation and without obstacles.
II	Area with low vegetation such as grass and isolated obstacles (trees, buildings) with separations of at least 20 obstacle heights.
III	Area with regular cover of vegetation or buildings or with isolated obstacles with separations of maximum 20 obstacle heights (such as villages, suburban terrain, permanent forest).
IV	Area in which at least 15% of the surface is covered with buildings and their average height exceeds 15.

Table 2 **Wind pressure  $q_k = kN/m^2$**

Table 2 is valid when wind velocity reference  $V_{ref}$  is 21 m/s. If it is higher than 21 m/s, correction factor from table 3 must be used.

Balcony reference height $Z_e$ (m)	Wind pressure $q_k$ , $kN/m^2$ (wind velocity reference $V_{ref}=21$ m/s)				
	Terrain category				
	0	I	II	III	IV
2	0.78	0.52	0.39	0.35	0.32
5	0.96	0.65	0.53	0.35	0.32
8	1.05	0.73	0.61	0.43	0.32
10	1.09	0.76	0.65	0.47	0.32
15	1.18	0.83	0.72	0.55	0.4
20	1.24	0.88	0.77	0.6	0.45
25	1.29	0.92	0.82	0.65	0.5
30	1.33	0.95	0.85	0.68	0.54
35	1.37	0.98	0.88	0.72	0.57
40	1.4	1.01	0.91	0.74	0.6

Table 3 **Wind velocity correction factor**

Wind velocity m/s	21	22	23	24	25	26	27	28	29	30	31	32
Correction factor $k_w$	1.00	1.10	1.20	1.31	1.42	1.53	1.65	1.78	1.91	2.04	2.18	2.32

Table 4 **Wind zones**

Zone	A	B
Wind suction load $C_{pe10}$	-1.2	-0.8

Table 5 **Glass height dimensioning**

Glazing system height, mm	≤ 1500 mm			≤ 1600			≤ 1700			≤ 1800			≤ 1900		
Wind load, $Q_w$ , $kN/m^2$	≤ 1.3	≤ 2.2	≤ 3.3	≤ 1.1	≤ 2.0	≤ 3.1	≤ 0.9	≤ 1.8	≤ 2.8	≤ 0.7	≤ 1.5	≤ 2.4	≤ 0.6	≤ 1.3	≤ 2.1
Thickness of glass, mm	6	8	10	6	8	10	6	8	10	6	8	10	6	8	10

Glazing system height, mm	≤ 2000			≤ 2100			≤ 2200			≤ 2300			≤ 2400		
Wind load, $Q_w$ , $kN/m^2$	≤ 0.4	≤ 1.1	≤ 2.0	-	≤ 1.0	≤ 1.8	-	≤ 0.9	≤ 1.5	-	≤ 0.8	≤ 1.4	-	≤ 0.6	≤ 1.2
Thickness of glass, mm	6	8	10	-	8	10	-	8	10	-	8	10	-	8	10

Glazing system height, mm	≤ 2500			≤ 2600			≤ 2700			≤ 2800			≤ 2900			≤ 3000		
Wind load, $Q_w$ , $kN/m^2$	-	≤ 0.5	≤ 1.1	-	-	≤ 0.9	-	-	≤ 0.8	-	-	≤ 0.7	-	-	≤ 0.6	-	-	≤ 0.5
Thickness of glass, mm	-	8	10	-	-	10	-	-	10	-	-	10	-	-	10	-	-	10

# Vottun



**MALMERK  
KLAASIUM**

## DECLARATION OF PERFORMANCE

(UNDER REGULATION (EU) NO 305/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL)

1. Unique identification code of the product type:  
**MALMERK KLAASIUM BALCONY & TERRACE GLAZING SYSTEM**
2. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:  
**GLAZING SYSTEMS FOR BALCONIES AND TERRACES**
3. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):  
**KLAASIUM, 6MM  
KLAASIUM, 8MM  
KLAASIUM, 10MM**
4. Name, registered trade name or registered trademark and contact address of the manufacturer as required pursuant to Article 11(5):  
**MALMERK KLAASIUM OÜ, VALDEKU 132, 11216 TALLINN, ESTONIA**
5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks:  
**NOT APPLICABLE**
6. System or systems of assessment and verification of constancy of the construction product:  
**AC-CLASS 3 (as set out in Annex V)**
7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:  
**VTT EXPERT SERVICES OY HAS ISSUED ETA 13/0306 AND PERFORMED INITIAL INSPECTION OF THE MANUFACTURING PLANT AND THE FACTORY PRODUCTION CONTROL SYSTEMS.**
8. Declared performance

Essential characteristics	Standard	Performance
1. Hygiene, health and environment	-	No dangerous materials
2. Wind load resistance	EN-12211	6mm h=1880 1200 Pa 8mm h=2380 1200 Pa 10mm h=2960 1200 Pa
3. Impact resistance	EN12600	6mm h=1880 190 mm 8mm h=2380 190 mm 10mm h=2960 450 mm
4. Resistance to fire	EN13501-2	NPD
5. Reaction to fire	EN13501-1	NPD

NPD – no performance determined

9. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 8. This declaration of performance under sole responsibility of the manufacturer identified in point 4.

Signed for and behalf of the manufacturer by:

Henry Ristimägi  
CEO, Malmerk Klaasium OÜ

05.011.2020  
Tallinn



Þú munt ekki sjá eftir þeirri ákvörðun að loka svölunum með gleri því þú færð auka fermetra í eignina sem þú munt njóta um ókomin ár td. fyrir líkamræktartæki, morgunkaffið eða að horfa á norðurljósinn.



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