



**SEEN AG**  
Lerchenfeldstrasse 3  
9014 St. Gallen  
Switzerland

**SEEN ELEMENTS**  
HIGHLY EFFECTIVE BIRD PROTECTION

## TECHNICAL DATA

<b>PRODUCT NAME</b>	SEEN Elements
<b>MATERIAL</b>	multilayer laminated polyester film
<b>MATERIAL THICKNESS</b>	150 to 175my, depending on the product variant
<b>ADHESIVE</b>	acrylic
<b>APPLICATION</b>	subsequent application to transparent surfaces such as glass, Plexiglas, etc.
<b>ORIGIN</b>	EU
<b>TARIFF NUMBER</b>	3921.1990
<b>ROLL WIDTH</b>	32cm (9/90mm grid with four rows of dots throughout) 98cm (9/90mm grid with eleven rows of dots throughout) 98cm (9/70mm grid with 14 rows of dots throughout)
<b>ROLL LENGTH</b>	50, 100 or 200 running meters as stock items, other roll lengths on request
<b>LAYING DIRECTION</b>	vertically or horizontally
<b>GLASS SURFACE</b>	dry or wet
<b>OUTSIDE TEMPERATURE</b>	at least 10°C (50°F)
<b>CLEANING</b>	detailed cleaning instructions available separately





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## PRODUCT VARIANTS BIRD PROTECTION

TYPE	FRONT	BACK	APPLICATION	ADHESIVE
SEEN SHINY 9/90MM	aluminium, highly reflective	black	outside	black side
SEEN MATT 9/90MM	aluminium, semi-reflective	black	outside	black side
SEEN SHINY 9/90MM DUAL	aluminium, highly reflective	aluminium, highly reflective	both sides possible	metallic side
SEEN SHINY 9/90MM INSIDE	aluminium, highly reflective	black	inside	metallic side
SEEN SHINY 9/70MM INSIDE	aluminium, highly reflective	black	inside	metallic side

## TEST METHOD BIRD PROTECTION

The 9/90mm grid was tested in the flight channel of the Hohenau-Ringelsdorf Biological Station from 2019 to 2021 with the following set-ups:

YEAR	TEST METHOD	GLASS STRUCTURE	RESULT
2019	WIN (Reflection)	laminated safety glass	9% approach, highly effective, category A
2020	WIN (Reflection)	insulating glass with low-e coating	6% approach, highly effective, category A
2021	WIN (Reflection)	laminated safety glass with solar control coating	10% approach, highly effective, category A
2021	NPW (Transparency)	laminated safety glass	6% approach, highly effective, category A

The 9/70mm grid was tested in 2022 in the flight channel of the Hohenau-Ringelsdorf Biological Station:

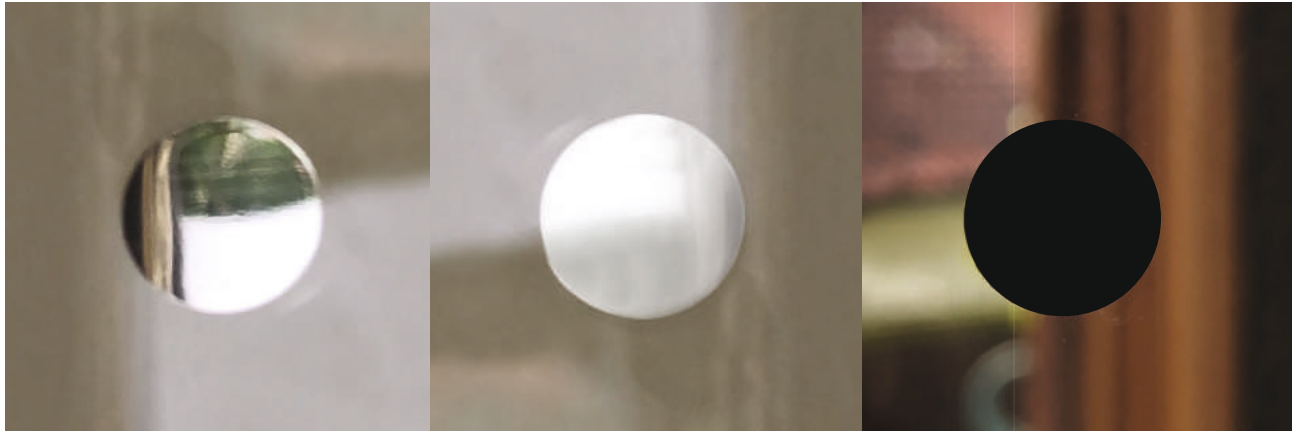
YEAR	TEST METHOD	GLASS STRUCTURE	RESULT
2022	WIN (Reflection)	insulating glass with low-e coating, laminated safety glass on the room side	5% approach, highly effective, category A



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**VARIANTS OF SEEN ELEMENTS**



Outside:  
SEEN shiny

Inside:  
SEEN shiny dual

Outside:  
SEEN matt

Inside:  
light-absorbing rear side

**SPECIFICATIONS**

9/90MM GRID	
ARRANGEMENT	
VARIANTS	SEEN shiny 9/90mm (highly reflective) SEEN matt 9/90mm (semi-reflective)
COVERED GLASS SURFACE	0,80 %
TEST REPORT	2020-2022
EVALUATION	Category A - highly effective

9/70MM GRID	
ARRANGEMENT	
VARIANTS	SEEN shiny 9/70mm inside (highly reflective)
COVERED GLASS SURFACE	1,25 %
TEST REPORT	2023
EVALUATION	Category A - highly effective

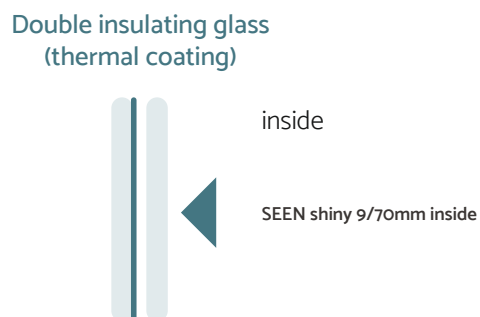
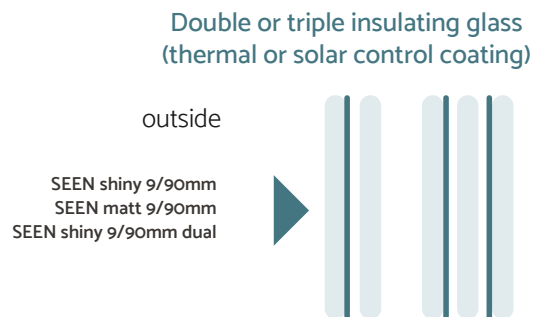
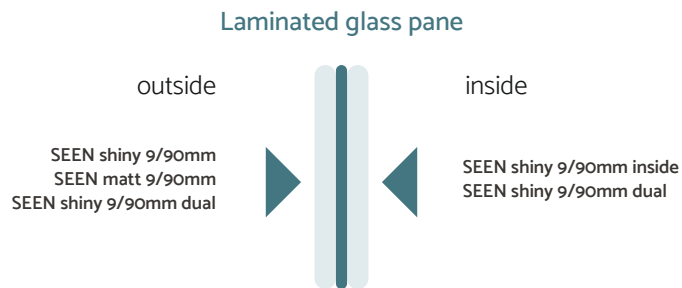
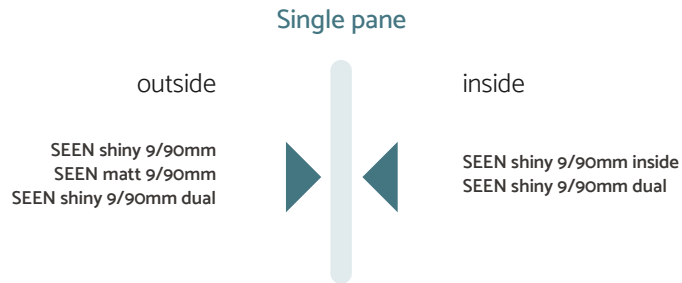
Custom designs with tighter grids are available upon request.



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### APPLICATION AREAS

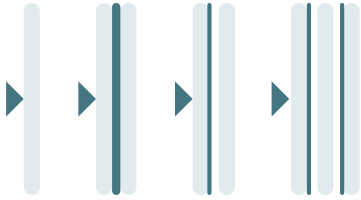




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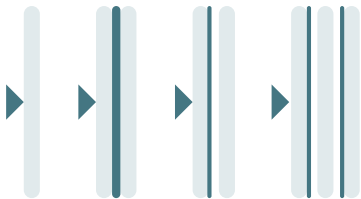
## SEEN ELEMENTS HIGHLY EFFECTIVE BIRD PROTECTION

### SEEN shiny 9/90mm



- scientifically tested, highly effective bird protection for retrofitting windows, façades and transparent glazing
- one-sided approach
- dot grid: 9mm diameter in 90 x 90 mm grid (dot centre to dot centre)
- metallic shiny front side, black rear side
- for application outside, adhesive on the black rear side

### SEEN matt 9/90mm



- scientifically tested, highly effective bird protection for retrofitting windows, façades and transparent glazing
- one-sided approach
- dot grid: 9mm diameter in 90 x 90 mm grid (dot centre to dot centre)
- metallic matte front side, black rear side
- for application outside, adhesive on the black rear side

### SEEN shiny 9/90mm inside



- scientifically tested, highly effective bird protection for retrofitting windows, façades and transparent glazing
- one-sided approach
- dot grid: 9mm diameter in 90 x 90 mm grid (dot centre to dot centre)
- metallic shiny front side, black rear side
- for application inside, adhesive on the metallic shiny front side

### SEEN shiny 9/90mm dual



- scientifically tested, highly effective bird protection for retrofitting windows, façades and transparent glazing
- approach on one or both sides
- dot grid: 9mm diameter in 90 x 90 mm grid (dot centre to dot centre)
- metallic shiny on both sides
- adhesive on one metallic shiny side

### SEEN shiny 9/70mm inside



- scientifically tested, highly effective bird protection for retrofitting windows, façades and transparent glazing
- one-sided approach
- dot grid: 9mm diameter in 70 x 70 mm grid (dot centre to dot centre)
- metallic shiny front side, black rear side
- for application inside, adhesive on the metallic shiny front side