



SEEN AG
Lerchenfeldstrasse 3
9014 St. Gallen
Switzerland

SEEN ELEMENTS
HIGHLY EFFECTIVE BIRD PROTECTION

TECHNICAL DATA

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

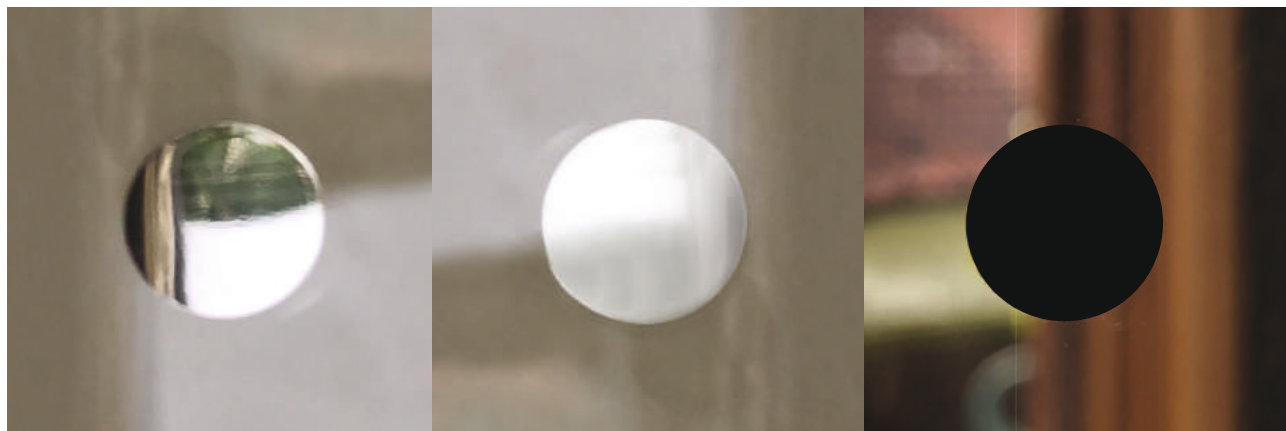
YEAR	TEST METHOD	GLASS STRUCTURE	RESULT
2022	WIN (Reflection)	insulating glass with low-e coating, laminated safety glass on the room side	6% approach, highly effective, category A



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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		9/70MM GRID	
ARRANGEMENT		ARRANGEMENT	
VARIANTS	SEEN shiny 9/90mm (highly reflective) SEEN matt 9/90mm (semi-reflective)	VARIANTS	SEEN shiny 9/70mm inside (highly reflective)
COVERED GLASS SURFACE	0,80 %	COVERED GLASS SURFACE	1,25 %
TEST REPORT	2020-2022	TEST REPORT	2023
EVALUATION	Category A – highly effective	EVALUATION	Category A – highly effective

Custom designs with tighter grids are available upon request.

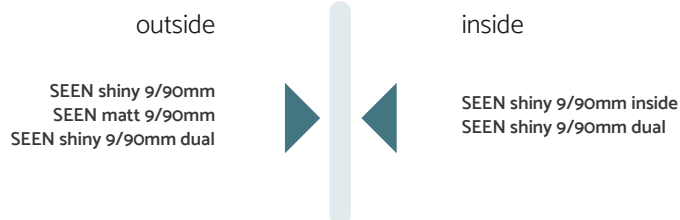


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APPLICATION AREAS

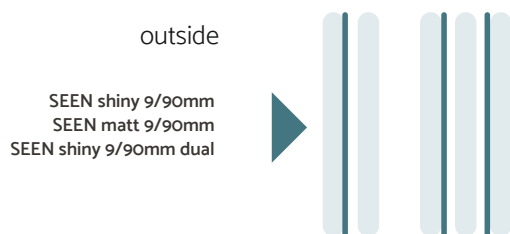
Single pane



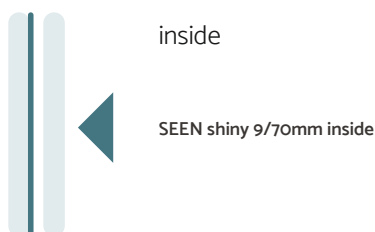
Laminated glass pane



Double or triple insulating glass (thermal or solar control coating)



Double insulating glass (thermal coating)





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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