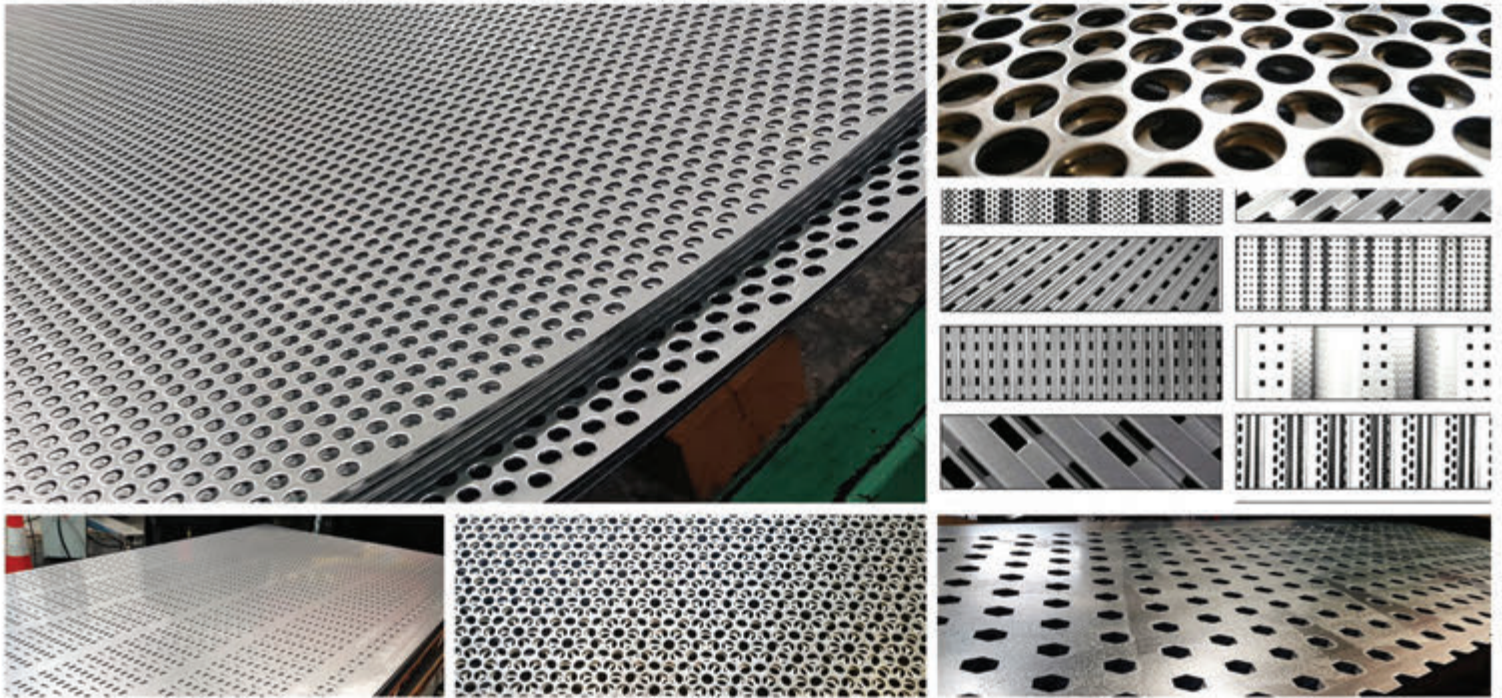


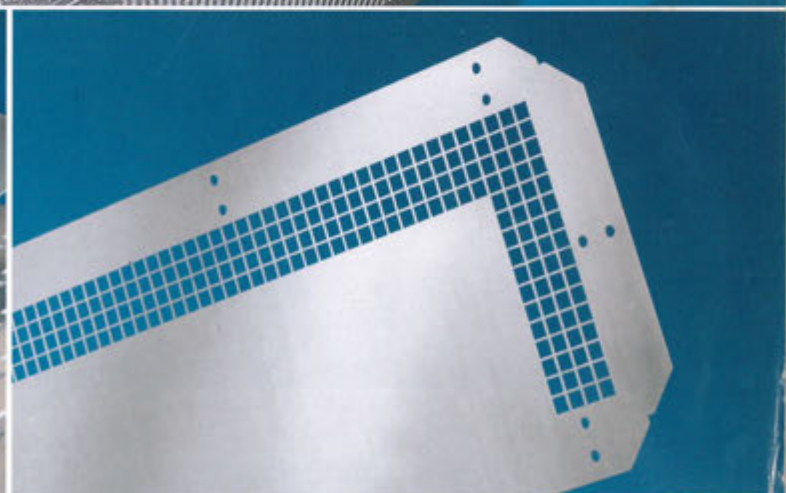
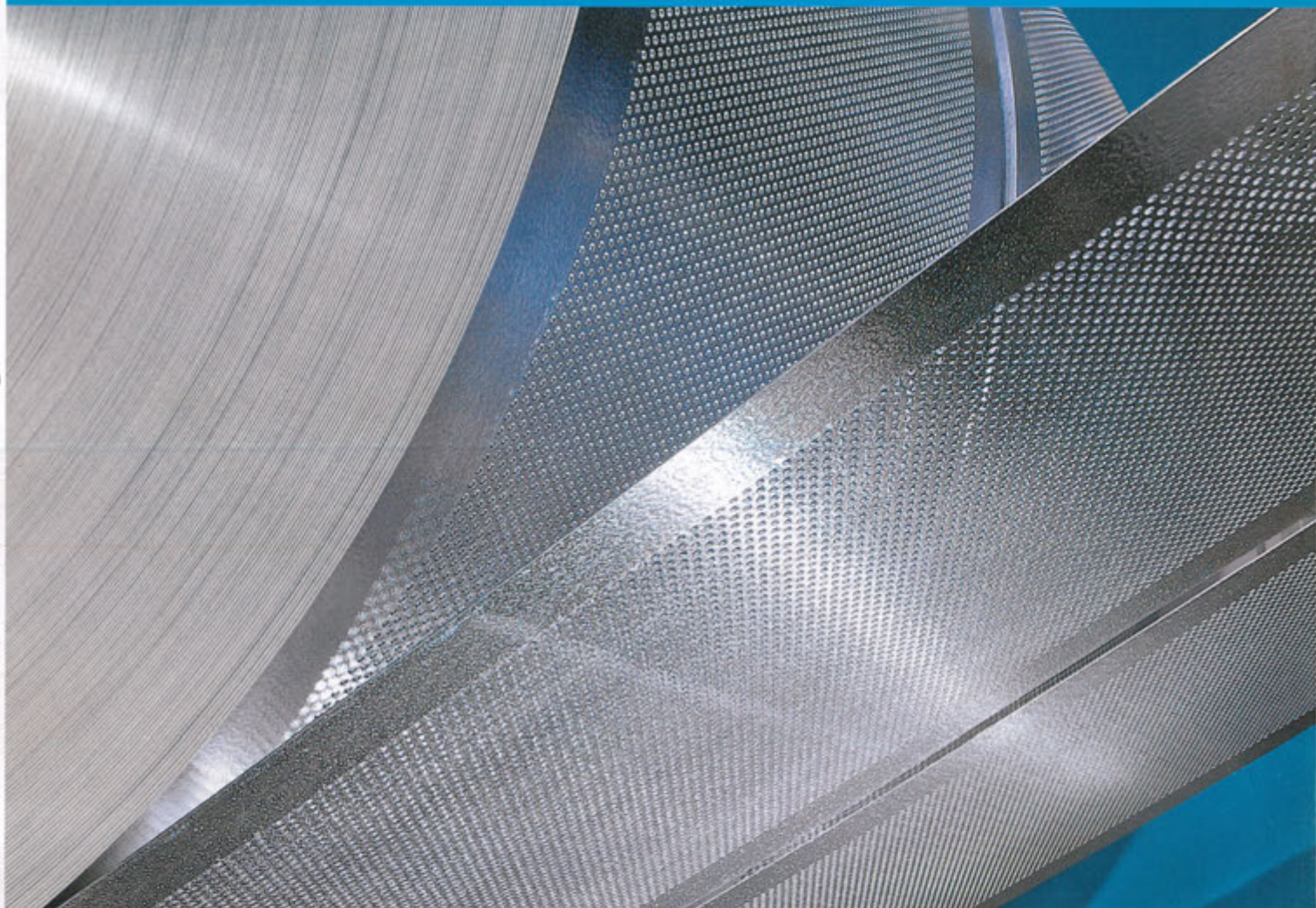
ALFAHD STEEL  
FOR  
IMPORT & EXPORT



# Alfahd Perforated Steel



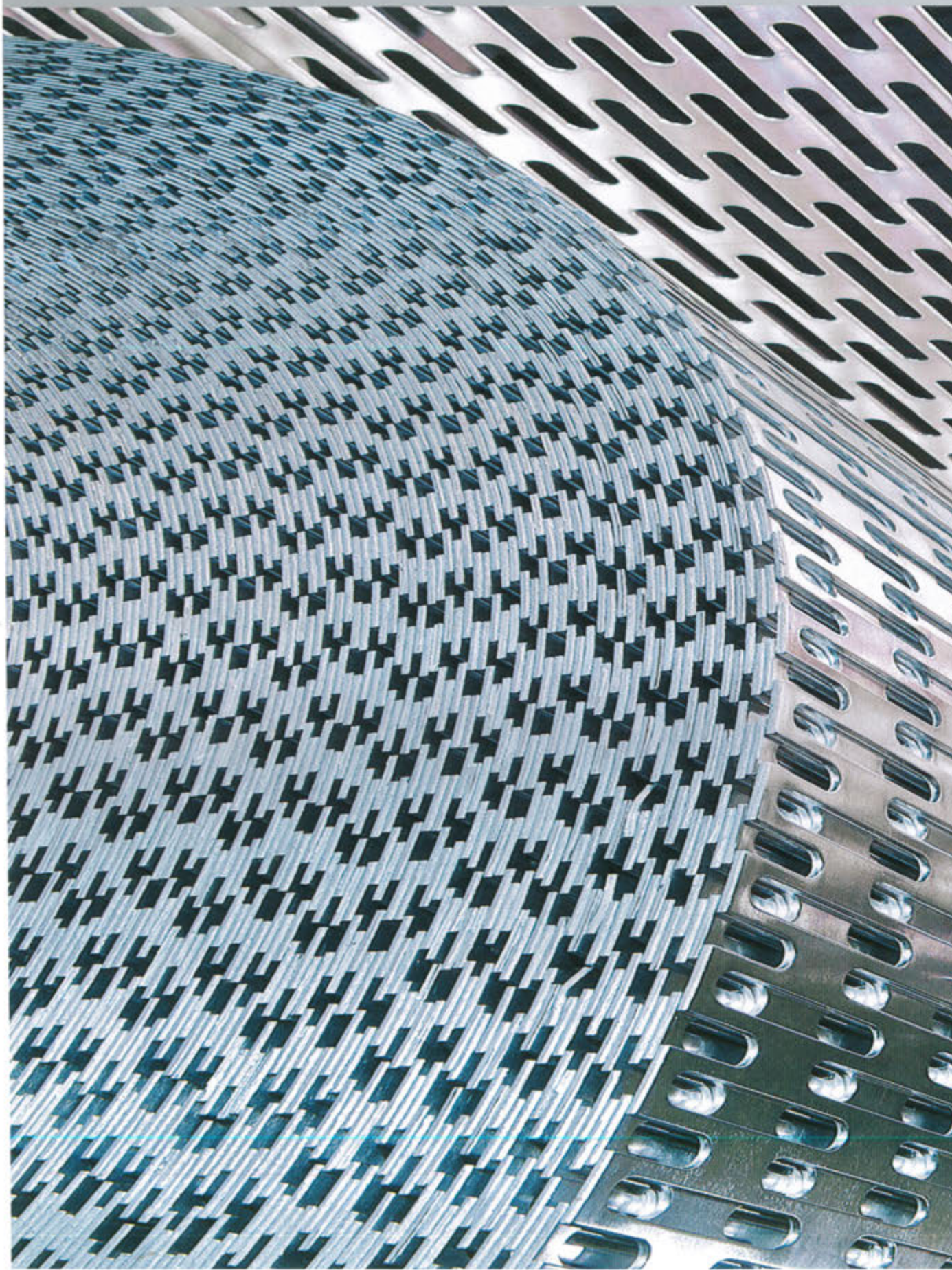
# Perforated metal made to measure – individual and fast





# Alfahd Steel Perforated Metal - solutions for all applications





# Contents

## The choice is yours: Your individual perforated metal sheet

From a wide range of perforation patterns, we can manufacture perforated metal tailored precisely to your individual requirements! Whether round, square, hexagonal, slot or special customised perforations, we can supply whatever meets our customers' demands! Our standard range covers perforated metal sheets of 0.5 – 3.0 mm, but on request we will examine the feasibility of further material thicknesses. The use of state-of-the-art CNC-controlled machines guarantees optimal manufacturing processes.

## Function and design – Alfahd Steel Perforated Metal sheets embody both

For noise and sound presentation, as façade cladding, in filter systems, cooling and heating devices, ventilation and air-conditioning systems, as machine elements or sieves, sunshades, ceiling or wall panellings, screens or public seating, perforated metal sheets are extremely versatile due to their outstanding material properties.

## Alfahd Steel Perforated Metal – individual and fast



Perfect  
quality



Great  
variety



Fast  
delivery

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# The centre of excellence for perforated metal

## Individual perforation patterns

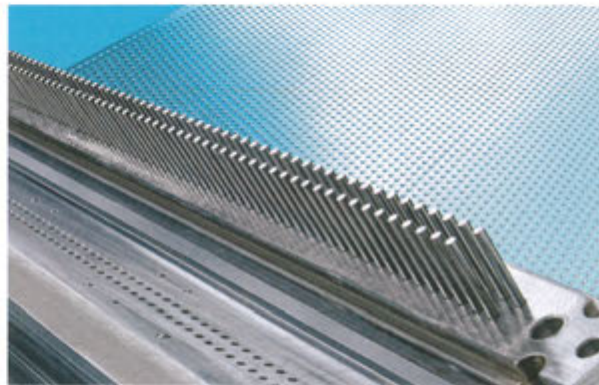
Well over 400 different perforation patterns is the standard range of choice for Alfahd Steel Perforated Metal customers, and on top of this, Alfahd Steel develops perforated sheets to customers' special design specifications.

## Expertise on wide presses

On a total of six full width perforation presses, each equipped with a state-of-the-art straightening machine to guarantee absolute flatness, Alfahd Steel carries out perforation straight from the coil. Besides perforating complete coils and slit strips, cut-to-size blanks and sheets of up to 1,500 mm widths and 6,000 mm lengths (longer on prior agreement) can also be manufactured on customer request with strip perforations, field perforations, a combination of both or with perforation-free edges.

## Flexible production equipment

Alfahd Steel Perforated Metal's highly efficient production equipment allows the machining of the perforated sheets to customer specifications and their fast processing to be provided from a single source. The machined perforated sheet solutions are then integrated precisely into Alfahd Steel customers' workflow.



Flatness



Competent consulting



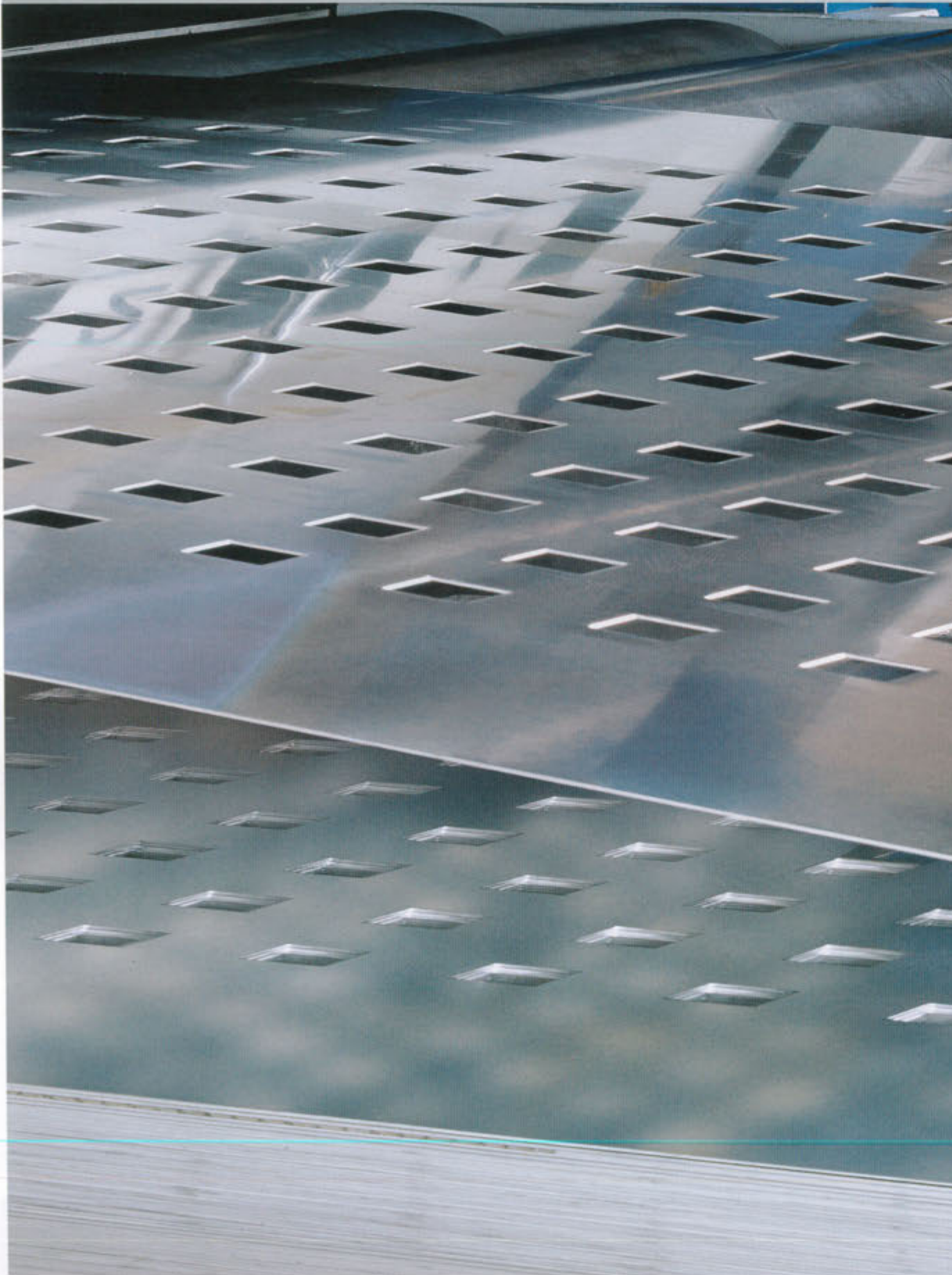
Highly efficient

## Your benefits

- Top quality perforated sheet solutions available at short notice from a single source
- Competent customer advice
- Extensive project experience
- Part of the internationally successful Alfahd Steel group of companies



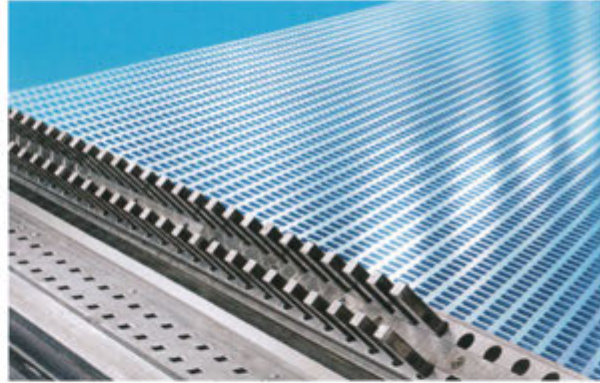
I. Perforated sheets to customer specifications



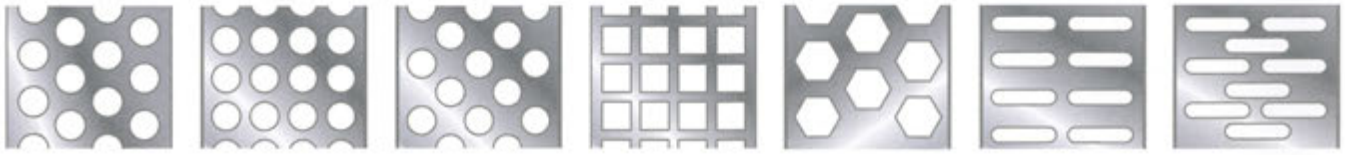
# Perforation fields – from standard ...

As a highly efficient perforated metal specialist, we can supply a convincing range of customised solutions in addition to our numerous standard patterns. We see ourselves as a partner whose tool variety and machining services enable even special dimensions to be supplied individually and fast. This enables you to start series production of your product ideas that stand out on the market and secure your competitive edge.

Based on our expertise and experience, we can provide advice that goes right to the core details and develop convincing ideas that will stand the test of time.

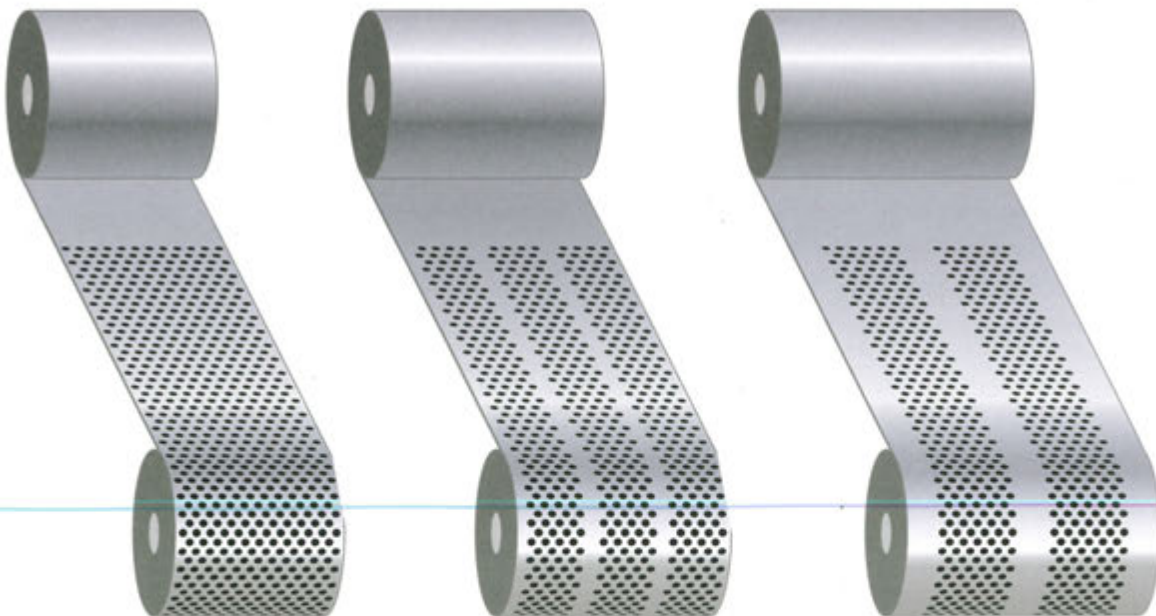


## Perforation patterns



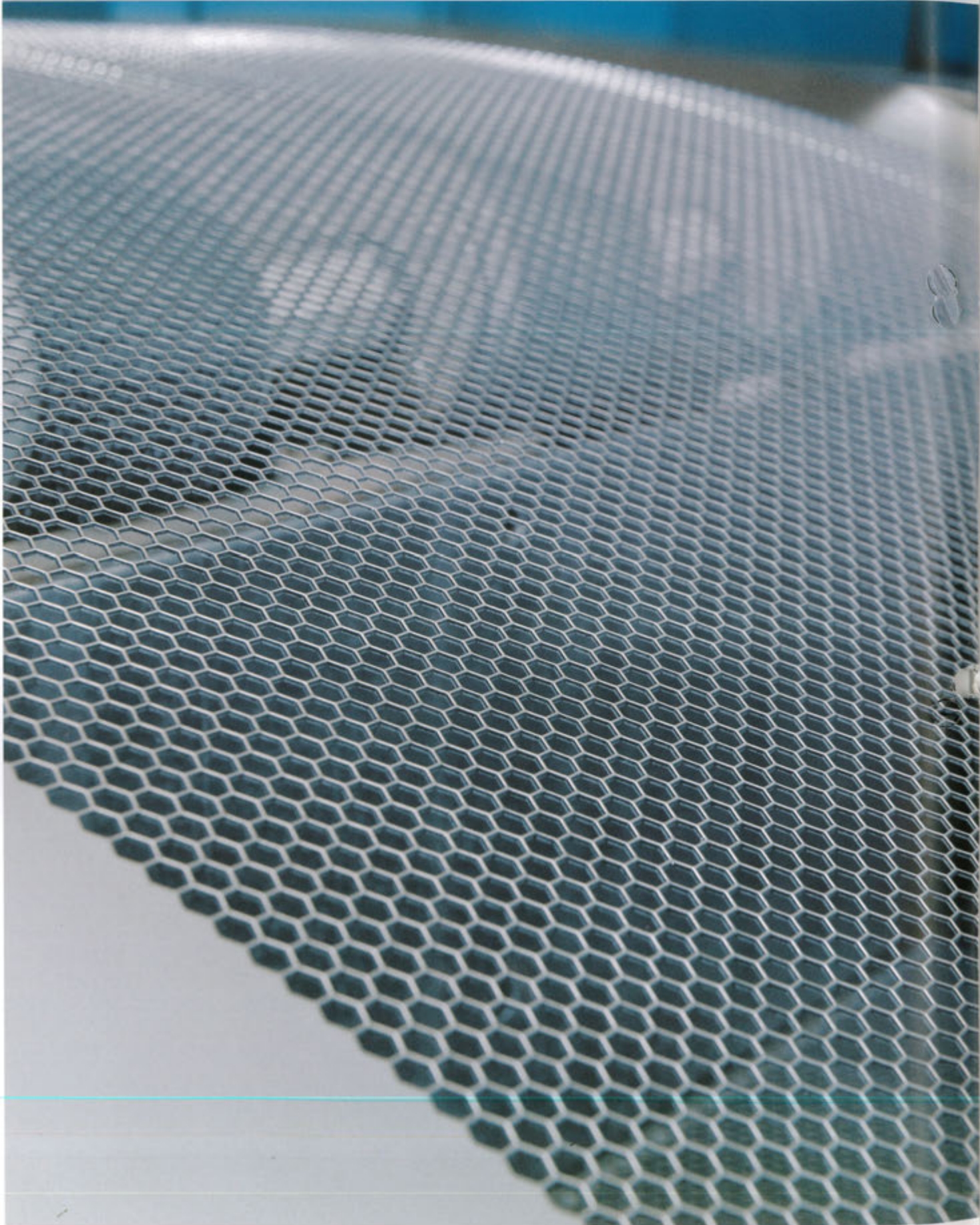
- |  |   |   |  |  |   |  |
|--|---|---|--|--|---|--|
| <b>Rv</b><br>Round holes in staggered rows | <b>Rg</b><br>Round holes in straight rows | <b>Rd</b><br>Round holes in diagonal rows | <b>Qg</b><br>Square holes in straight rows | <b>SW</b><br>Hexagonal holes in staggered rows | <b>Lg</b><br>Slotted holes in straight rows | <b>Lv</b><br>Slotted holes in staggered rows |
|--|---|---|--|--|---|--|

## Perforating from coil to coil in widths of up to 1500 mm



I. Perforated sheets to customer specifications

I. Perforated sheets to customer specifications

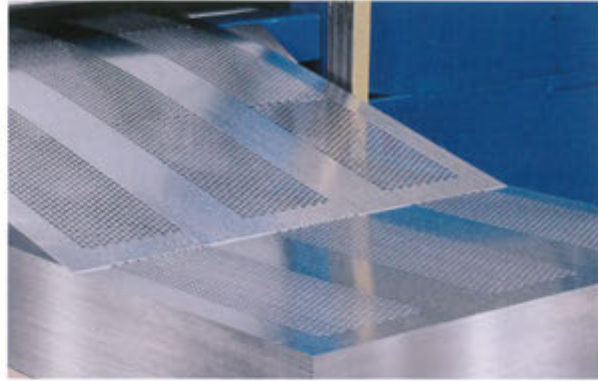


## ... to customized solutions

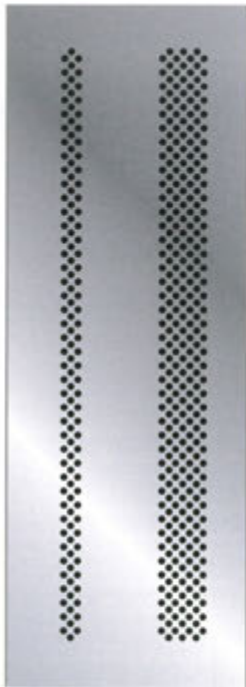
Regardless of whether you need perforated metal sheets in small or large formats (up to 6000 mm in length or longer by arrangement), we will link into your value chain and supply you with exactly what you need, quickly and on schedule.

Customers are often surprised just how much variety, design and functionality we can actually achieve.

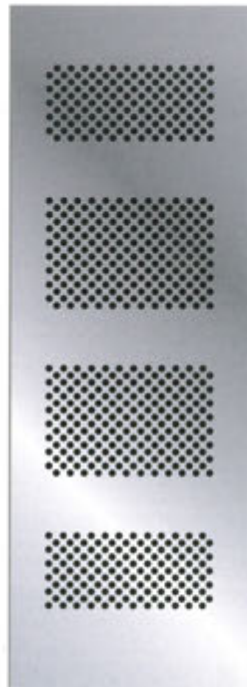
We will gladly go that extra mile for you and realise perforated metal solutions that your products and services will profit from.



### Custom perforating cut-to-size sheets up to 1500 mm in width



Strip perforation



Field perforation



Combination of field and strip perforation



Perforation-free edges on customer request

All perforation patterns shown are diagrams.  
We reserve the right to make technical alterations.



# Rv DIN 24041

Round holes, staggered

Perforation pattern	Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1000 mm							Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1250 mm							Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1500 mm												
	DIN-specification	w	t	A <sub>0</sub> %	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50
Rv 3.50 - 5.00	3.50	5.00	44.4	○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
Rv 3.50 - 6.00	3.50	6.00	30.9	●	●	●	○	○	○			●	●	●	○	○	○			●	●	●	○	○	○		
↔ Rv 3.50 - 8.66	3.50	8.66	14.8	○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
↔ Rv 3.50 - 10.40	3.50	10.40	10.3	●	●	●	●	○	○			●	●	●	●	○	○			●	●	●	●	○	○		
Rv 3.50 - 15.00	3.50	15.00	4.9	○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
Rv 3.80 - 4.50	3.80	4.50	64.7	○	○	○	○					○	○	○					○	○	○						
↔ Rv 3.80 - 7.78	3.80	7.78	21.6	○	○	○	○	○	○			○	○	○	○	○				○	○	○	○	○			
Rv 3.80 - 13.50	3.80	13.50	7.2	○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
Rv 4.00 - 5.00	4.00	5.00	58.0	○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
Rv 4.00 - 5.25	4.00	5.25	52.7			●	●	●	●	○	○	●	●	●	○				●	●	●	○					
L Rv 4.00 - 6.00	4.00	6.00	40.0	●	●	●	●	●	●	○	○	●	●	●	●	○	○			●	●	●	●	○	○		
Rv 4.00 - 7.00	4.00	7.00	29.6	●	●	●	●	○	○			●	●	●	○	○				●	●	●	○	○			
Rv 4.00 - 8.00	4.00	8.00	22.7	●	●	●	●	●	○	○		●	●	●	○	○				●	●	●	○	○			
↔ Rv 4.00 - 8.66	4.00	8.66	19.4			●	○	○				●	○	○						○	○	○					
↔ Rv 4.00 - 10.40	4.00	10.40	13.4	●	●	●	●	●	●	○	○	●	●	●	●	○	○			●	●	●	●	○	○		
↔ Rv 4.00 - 12.12	4.00	12.12	9.9	●	●	●	●	○	○			●	●	●	○	○				●	●	●	○	○			
↔ Rv 4.00 - 13.86	4.00	13.86	7.6	●	●	●	●	●	●	○	○	●	●	●	●	○	○			●	●	●	●	○	○		
Rv 4.00 - 18.00	4.00	18.00	4.5	●	●	●	●	●	○			●	●	●	●	○				●	●	●	○	○			
Rv 4.00 - 21.00	4.00	21.00	3.3	●	●	●	●	○				●	●	●	○					●	●	○	○				
Rv 4.00 - 24.00	4.00	24.00	2.5	●	●	●	●	●	○	○		●	●	●	○	○				●	●	●	○	○			
Rv 4.50 - 6.00	4.50	6.00	51.0	○	○	○	○					○	○	○	○				○	○	○	○	○				
↔ Rv 4.50 - 10.40	4.50	10.40	17.0	○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
Rv 4.50 - 18.00	4.50	18.00	5.7	○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
L Rv 5.00 - 7.00	5.00	7.00	46.1	●	●	●	●	○				●	●	●	○				●	●	●	○					
L Rv 5.00 - 8.00	5.00	8.00	35.4	●	●	●	●	●	○	○		●	●	●	●	○	○			●	●	●	●	○	○		
Rv 5.00 - 8.40	5.00	8.40	32.1	●	●	●	●	●	○	○		●	●	●	○	○				●	●	●	○	○			
Rv 5.00 - 9.00	5.00	9.00	28.0	●	●	●	●	○				●	●	●	○					●	●	●	○				
Rv 5.00 - 10.00	5.00	10.00	22.7	●	●	●	●	○				●	●	●	○					●	●	●	○				
Rv 5.00 - 12.00	5.00	12.00	15.8	●	●	●	○					●	●	○						●	●	○					
↔ Rv 5.00 - 12.12	5.00	12.12	15.4	●	●	●	●	●	○	○		●	●	●	●	○	○			●	●	●	●	○	○		
↔ Rv 5.00 - 13.86	5.00	13.86	11.8	●	●	●	●	●	○	○		●	●	●	●	○	○			●	●	●	●	○	○		
Rv 5.00 - 14.00	5.00	14.00	11.6	○	○	○	○	○				○	○	○	○					○	○	○	○	○			
↔ Rv 5.00 - 15.60	5.00	15.60	9.3	●	●	●	●	○				●	●	●	○					●	●	●	○				
Rv 5.00 - 16.00	5.00	16.00	8.8			○	○							○													
↔ Rv 5.00 - 17.32	5.00	17.32	7.5	●	●	●	●	○				●	●	●	○					●	●	●	○				
↔ Rv 5.00 - 20.78	5.00	20.78	5.3	●	●	●	○	○				●	●	○						●	●	○					
Rv 5.00 - 21.00	5.00	21.00	5.1	●	●	●	●	○	○			●	●	●	○	○				●	●	●	○	○			
Rv 5.00 - 24.00	5.00	24.00	3.9	●	●	●	●	●	○	○		●	●	●	●	○	○			●	●	●	●	○	○		
Rv 5.00 - 27.00	5.00	27.00	3.1	○	○	○	○	○				○	○	○	○					○	○	○	○	○			
Rv 5.00 - 30.00	5.00	30.00	2.5	○	○	○	○	○				○	○	○	○					○	○	○	○	○			
Rv 5.00 - 36.00	5.00	36.00	1.7	●	●	●	○					●	●	○						●	●	○					
Rv 6.00 - 8.00	6.00	8.00	51.0	○	○	○	○	○	○			○	○	○	○	○				○	○	○	○	○			
Rv 6.00 - 9.00	6.00	9.00	40.3	●	●	●	●	○	○			●	●	●	○	○				●	●	●	○	○			
Rv 6.00 - 11.00	6.00	11.00	27.0			○	○	○	○					○													
↔ Rv 6.00 - 13.86	6.00	13.86	17.0	○	○	○	○	○	○			○	○	○	○	○				○	○	○	○	○			
↔ Rv 6.00 - 15.60	6.00	15.60	13.5	●	●	●	●	○	○			●	●	●	○	○				●	●	●	○	○			
Rv 6.00 - 24.00	6.00	24.00	5.7	●	●	●	●	○	○			●	●	●	○	○				●	●	●	○	○			

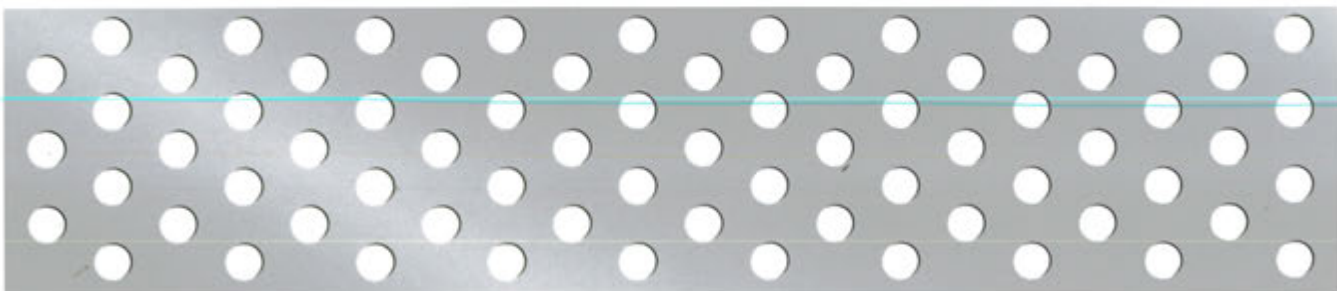
L Perforated sheets to customer specifications

# Rv DIN 24041

Round holes, staggered

I. Perforated sheets to customer specifications

Perforation pattern	Thickn. (s) in mm / up to Width (a <sub>1</sub> ) 1000 mm								Thickn. (s) in mm / up to Width (a <sub>1</sub> ) 1250 mm								Thickn. (s) in mm / up to Width (a <sub>1</sub> ) 1500 mm											
	DIN-specification	w	t	A <sub>0</sub> %	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Rv 6.00 - 27.00	6.00	27.00	4.5	●	●	●	●	●	●	○	○	●	●	●	●	●	○	○	○	○	●	●	●	●	●	○	○	○
Rv 7.00 - 9.00	7.00	9.00	54.9			●	●	●	●	○	○			●	●	●	○	○	○	○			●	●	○	○		
Rv 7.00 - 10.00	7.00	10.00	44.4	○	○	○	○	○				○	○	○	○	○					○	○	○	○				
↔ Rv 7.00 - 15.60	7.00	15.60	18.3			●	●	●	●	○	○			●	●	●	○	○	○	○			●	●	○	○		
↔ Rv 7.00 - 17.32	7.00	17.32	14.8	○	○	○	○	○				○	○	○	○	○					○	○	○	○				
Rv 7.00 - 27.00	7.00	27.00	6.1			●	●	●	●	○	○			●	●	●	○	○	○	○			●	●	○	○		
Rv 7.00 - 30.00	7.00	30.00	4.9	○	○	○	○	○				○	○	○	○	○					○	○	○	○				
Rv 8.00 - 10.00	8.00	10.00	58.0	●	●	○	○	○	○			●	●	○	○	○	○				●	●	○	○	○			
Rv 8.00 - 11.00	8.00	11.00	48.0	●	●	●	○	○	○			●	●	●	○	○	○				●	●	●	○	○	○		
L Rv 8.00 - 12.00	8.00	12.00	40.3	○	●	●	○	○	○	○		○	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○
↔ Rv 8.00 - 17.32	8.00	17.32	19.4	●	●	○	○	○	○			●	●	○	○	○	○				●	●	○	○	○	○		
↔ Rv 8.00 - 19.06	8.00	19.06	16.0	●	●	●	○	○	○			●	●	●	○	○	○				●	●	●	○	○	○	○	
↔ Rv 8.00 - 20.80	8.00	20.80	13.4	○	○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rv 8.00 - 30.00	8.00	30.00	6.4	●	●	○	○	○	○			●	●	○	○	○	○				●	●	○	○	○	○		
Rv 8.00 - 33.00	8.00	33.00	5.3	●	●	●	○	○	○			●	●	●	○	○	○				●	●	●	○	○	○	○	
Rv 8.00 - 36.00	8.00	36.00	4.5	○	●	●	●	○	○	○		○	●	●	●	○	○				○	●	●	●	○	○	○	
Rv10.00 - 12.00	10.00	12.00	63.0			●	●	○	○	○				●	●	○	○	○					●	●	○	○		
Rv10.00 - 13.00	10.00	13.00	53.7			●	●	○	○	○				●	●	○	○	○					●	●	○	○	○	
Rv10.00 - 14.00	10.00	14.00	46.3	●	●	●	○	○	○			●	●	●	○	○	○				●	●	●	○	○	○	○	
L Rv10.00 - 15.00	10.00	15.00	40.3	●	●	●	○	○	○	○		●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○
↔ Rv10.00 - 18.00	10.00	18.00	28.0			○								○									○					
↔ Rv10.00 - 20.78	10.00	20.78	21.0			●	●	○	○	○				●	●	○	○	○	○				●	●	○	○	○	
↔ Rv10.00 - 22.52	10.00	22.52	17.9			●	●	○	○	○				●	●	○	○	○	○				●	●	○	○	○	
↔ Rv10.00 - 24.24	10.00	24.24	15.4	●	●	●	○	○	○			●	●	●	○	○	○				●	●	●	○	○	○	○	
↔ Rv10.00 - 25.98	10.00	25.98	13.4	●	●	●	○	○	○	○		●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rv10.00 - 36.00	10.00	36.00	7.0			○	○	○	○	○				○	○	○	○	○	○				○	○	○	○	○	
Rv10.00 - 42.00	10.00	42.00	5.1	●	●	●	○	○	○			●	●	●	○	○	○				●	●	●	○	○	○	○	
Rv10.00 - 45.00	10.00	45.00	4.5	●	●	●	○	○	○	○		●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rv12.00 - 16.00	12.00	16.00	51.0	○	○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rv12.00 - 25.00	12.00	25.00	20.9			●	●	○						●	●	○							●	●	○			
↔ Rv12.00 - 27.72	12.00	27.72	17.0	○	○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rv12.00 - 48.00	12.00	48.00	5.7	○	○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rv15.00 - 20.00	15.00	20.00	51.0	○	○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rv20.00 - 25.00	20.00	25.00	58.0	●	●	●	○	○	○			●	●	●	○	○	○				●	●	●	○	○	○		
Rv20.00 - 27.00	20.00	27.00	49.8	○	○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rv20.00 - 30.00	20.00	30.00	40.3	○	○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
↔ Rv20.00 - 43.30	20.00	43.30	19.4	●	●	●	○	○	○	○		●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rv20.00 - 75.00	20.00	75.00	6.4	●	●	●	○	○	○	○		●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○



# Rg DIN 24041

Round holes, straight

Hole width = w  
Spacing = t  
Margin width = c  
Relative open area =  $A_0$  %



Further details on page 24

Material:

○ = Sheet steel/Aluminium

● = Stainless steel

Available in all grades

I. Perforated sheets to customer specifications

Perforation pattern DIN-specification	w	t	$A_0$ %	Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1000 mm								Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1250 mm								Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1500 mm							
				0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Rg 1.60 - 3.00	1.60	3.00	22.3	○	○	○												○	○	○							
Rg 1.60 - 5.20	1.60	5.20	7.5	●	●	○	○											○	○	○	○						
Rg 1.60 - 6.00	1.60	6.00	5.6	●	○	○	○											○	○	○	○						
Rg 2.00 - 5.00	2.00	5.00	12.6			○														○							
Rg 2.00 - 5.20	2.00	5.20	11.6	○	○	○	○											○	○	○	○						
Rg 2.00 - 6.06	2.00	6.06	8.6	●	●	●	○	○										○	○	○	○	○					
Rg 2.00 - 6.93	2.00	6.93	6.5	●	●	●	○	○										○	○	○	○	○					
Rg 2.00 - 12.12	2.00	12.12	2.1	○	○	○	○	○										○	○	○	○	○					
Rg 2.40 - 5.00	2.40	5.00	18.1	○	○	○												○	○	○							
Rg 2.40 - 10.00	2.40	10.00	4.5	○	○	○												○	○	○							
Rg 2.50 - 4.00	2.50	4.00	30.6	○	○	○	○	○										○	○	○	○	○					
Rg 2.50 - 5.50	2.50	5.50	16.2	●	●	○	○	○										○	○	○	○	○					
Rg 2.50 - 5.65	2.50	5.65	15.4	○	○	○	○											○	○	○	○	○					
Rg 2.50 - 6.93	2.50	6.93	10.2	●	●	●	○	○										○	○	○	○	○					
Rg 2.50 - 7.80	2.50	7.80	8.1	○	○	○	○	○										○	○	○	○	○					
Rg 2.50 - 8.00	2.50	8.00	7.6	○	○	○	○	○										○	○	○	○	○					
Rg 2.50 - 11.00	2.50	11.00	4.1	●	●	○	○	○										○	○	○	○	○					
Rg 2.75 - 7.79	2.75	7.79	9.8			○	○	○	○											○	○	○	○				
Rg 3.00 - 5.00	3.00	5.00	28.3		○	○	○	○												○	○	○	○				
Rg 3.00 - 5.80	3.00	5.80	21.0	●	●	●	○	○	○									○	○	○	○	○					
Rg 3.00 - 6.00	3.00	6.00	19.6	●	●	●	○	○	○									○	○	○	○	○					
Rg 3.00 - 6.93	3.00	6.93	14.7	●	●	●	○	○	○									○	○	○	○	○					
Rg 3.00 - 8.20	3.00	8.20	10.5	●	●	○	○	○	○									○	○	○	○	○					
Rg 3.00 - 8.66	3.00	8.66	9.4	●	●	●	●	●	○									○	○	○	○	○	○				
Rg 3.00 - 10.00	3.00	10.00	7.1		○	○	○	○												○	○	○	○				
Rg 3.00 - 10.40	3.00	10.40	6.5	●	●	●	○	○	○									○	○	○	○	○					
Rg 3.00 - 11.60	3.00	11.60	5.3	●	●	●	○	○	○									○	○	○	○	○					
Rg 3.00 - 12.00	3.00	12.00	4.9	●	●	●	○	○	○									○	○	○	○	○					
Rg 3.20 - 6.00	3.20	6.00	22.3	●	●	●	○	○	○									○	○	○	○	○					
Rg 3.20 - 8.66	3.20	8.66	10.7	●	●	●	○	○										○	○	○	○	○					
Rg 3.20 - 12.00	3.20	12.00	5.6	●	●	●	○	○	○									○	○	○	○	○					
Rg 3.50 - 6.00	3.50	6.00	26.7	●	●	●	○	○										○	○	○	○	○					



# Rg DIN 24041

Round holes, straight

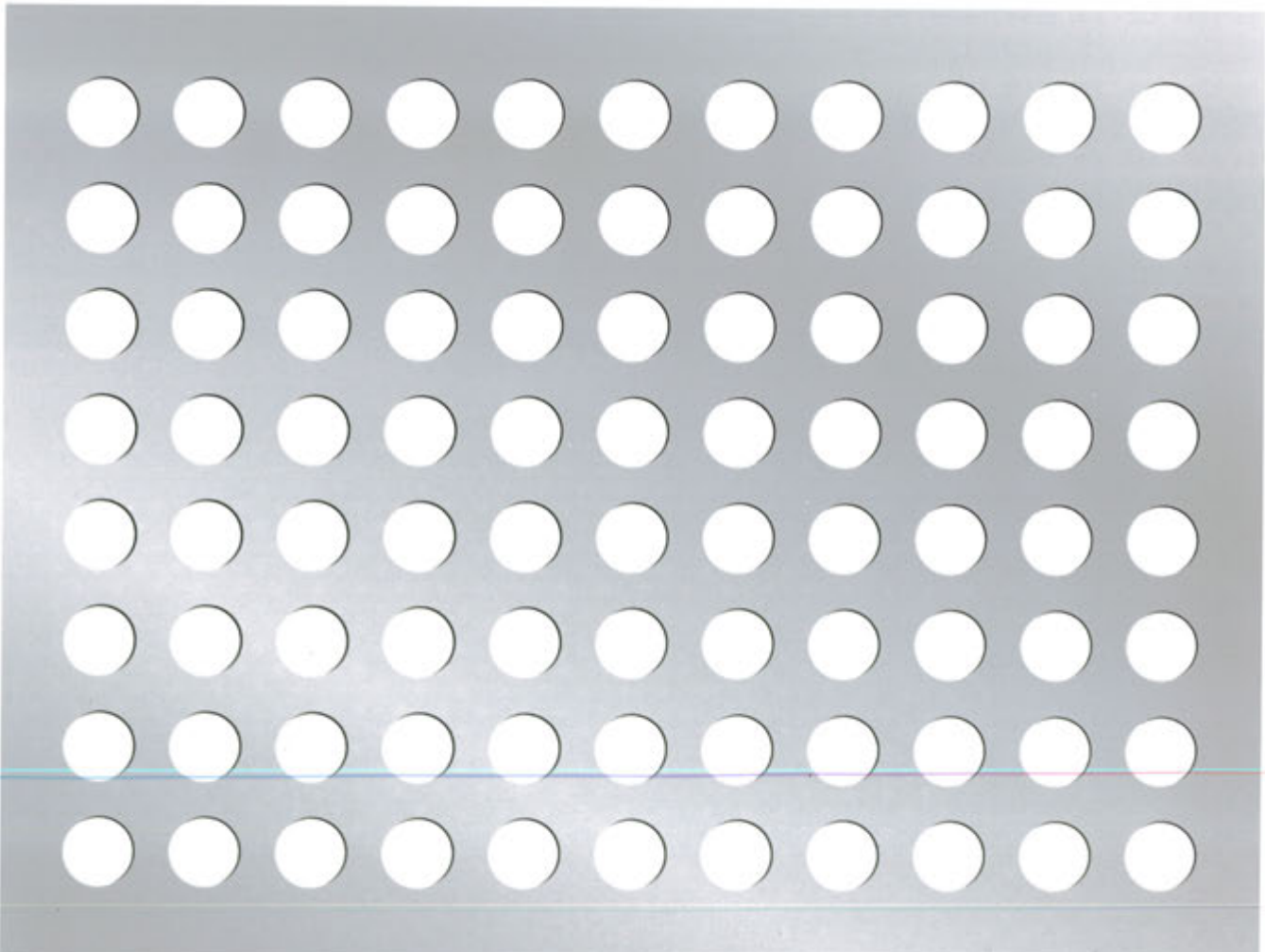
I. Perforated sheets to customer specifications

Perforation pattern	Thickn. (s) in mm/up to Width (a.) 1000 mm								Thickn. (s) in mm/up to Width (a.) 1250 mm								Thickn. (s) in mm/up to Width (a.) 1500 mm										
	DIN-specification	w	t	A <sub>0</sub> %	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50
Rg 3.50 - 6.20	3.50	6.20	25.0	○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
Rg 3.50 - 8.66	3.50	8.66	12.8	○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
Rg 3.50 - 10.40	3.50	10.40	8.9	●	●	●	●	●	○			●	●	●	●	●	○			●	●	●	●	●	○		
Rg 3.50 - 11.00	3.50	11.0	7.9	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 3.50 - 12.00	3.50	12.00	6.7	●	●	●	○	○	○			●	●	●	○	○	○			●	●	●	○	○	○		
Rg 3.80 - 7.80	3.80	7.80	18.6	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 4.00 - 8.66	4.00	8.66	16.7			○	○	○						○	○	○						○	○	○			
Rg 4.00 - 10.40	4.00	10.40	11.6	●	●	●	●	●	○			●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 4.00 - 12.12	4.00	12.12	8.6	●	●	●	●	○	○			●	●	●	●	○	○			●	●	●	●	○	○		
Rg 4.00 - 13.86	4.00	13.86	6.5	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 4.50 - 10.40	4.50	10.40	14.7	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 4.50 - 12.50	4.50	12.50	10.2	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 4.50 - 15.00	4.50	15.00	7.0	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 4.50 - 20.00	4.50	20.00	4.0	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 4.50 - 25.00	4.50	25.00	2.5	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 4.50 - 30.00	4.50	30.00	1.8	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 4.50 - Euro	4.50	15/25/125	6.8	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 5.00 - 7.50	5.00	7.50	34.9	●	●	○	○	○	○			●	●	○	○	○	○			●	●	○	○	○			
Rg 5.00 - 8.00	5.00	8.00	30.7	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 5.00 - 10.00	5.00	10.00	19.6	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 5.00 - 11.40	5.00	11.40	15.1	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 5.00 - 12.00	5.00	12.00	13.6	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 5.00 - 12.12	5.00	12.12	13.4	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 5.00 - 12.50	5.00	12.50	12.6	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 5.00 - 13.86	5.00	13.86	10.2	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 5.00 - 15.00	5.00	15.00	8.7	●	●	○	○	○	○			●	●	○	○	○	○			●	●	○	○	○			
Rg 5.00 - 15.60	5.00	15.60	8.1			○	○	○						○	○	○						○	○	○			
Rg 5.00 - 16.00	5.00	16.00	7.7	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 5.00 - 17.32	5.00	17.32	6.5			●	●	●						●	●	●						●	●				
Rg 5.00 - 20.00	5.00	20.00	4.9	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 5.00 - 20.78	5.00	20.78	4.5	●	●	●	○	○	○			●	●	●	○	○	○			●	●	●	○	○			
Rg 5.00 - 24.00	5.00	24.00	3.4	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 5.00 - 25.00	5.00	25.00	3.1	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 5.00 - 30.00	5.00	30.00	2.2	●	●	●	○	○	○			●	●	●	○	○	○			●	●	●	○	○			
Rg 5.00 - Euro	5.00	15/25/125	8.4	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 5.50 - 7.50	5.50	7.50	42.2	●	●	○	○	○	○			●	●	○	○	○	○			●	●	○	○	○			
Rg 5.50 - 15.00	5.50	15.00	10.6	●	●	●	○	○	○			●	●	●	○	○	○			●	●	●	○	○			
Rg 5.50 - 30.00	5.50	30.00	2.6	●	●	●	○	○	○			●	●	●	○	○	○			●	●	●	○	○			
Rg 6.00 - 10.00	6.00	10.00	28.3	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 6.00 - 12.50	6.00	12.50	18.1	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 6.00 - 13.86	6.00	13.86	14.7	○	○	●	●	●	○	○		○	○	●	●	○	○	○			○	○	●	●	○	○	○
Rg 6.00 - 15.60	6.00	15.60	11.6	●	●	●	●	●	○	○		●	●	●	●	○	○	○			●	●	●	●	○	○	○
Rg 6.00 - 20.00	6.00	20.00	7.1	○	○	●	●	●	○	○		○	○	●	●	○	○	○			○	○	●	●	○	○	○
Rg 6.00 - 25.00	6.00	25.00	4.5	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 6.50 - 12.50	6.50	12.50	21.2	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			
Rg 7.00 - 15.60	7.00	15.60	15.8		●	●	●	○	○					●	●	○	○					●	●	○			
Rg 7.00 - 17.32	7.00	17.32	12.8	○	○	○	○	○	○			○	○	○	○	○	○			○	○	○	○	○			

# Rg DIN 24041

Round holes, straight

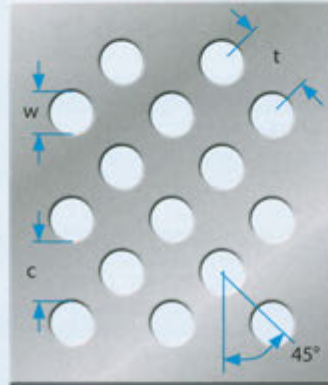
Perforation pattern DIN-specification	w	t	A <sub>0</sub> %	Thickn. (s) in mm/up to Width (a.) 1000 mm								Thickn. (s) in mm/up to Width (a.) 1250 mm								Thickn. (s) in mm/up to Width (a.) 1500 mm											
				0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00				
Rg 8.00 - 17.32	8.00	17.32	16.8	●	●	○	○	○	○									●	●	○	○	○	○								
Rg 8.00 - 19.06	8.00	19.06	13.8	●	●	●	○	○	○									●	●	●	○	○	○	○							
Rg 8.00 - 20.80	8.00	20.80	11.6	○	●	●	●	●	●	○	○							○	●	●	●	○	○	○	○						
Rg10.00 - 15.00	10.00	15.00	34.9			○	○	○	○	○	○									○	○	○	○	○	○						
Rg10.00 - 18.00	10.00	18.00	24.2			○														○											
Rg10.00 - 20.78	10.00	20.78	18.2			●	●	●	○	○	○							●	●	●	○	○	○	○	○						
Rg10.00 - 22.52	10.00	22.52	15.5			●	●	○	○	○	○									●	●	○	○	○	○						
Rg10.00 - 24.24	10.00	24.24	13.4	●	●	●	●	●	●									●	●	●	●	○	○								
Rg10.00 - 25.00	10.00	25.00	12.6		○	○	○	○												○	○	○	○								
Rg10.00 - 25.98	10.00	25.98	11.6	●	●	●	●	●	●	○	○							●	●	●	●	○	○	○	○						
Rg10.00 - 30.00	10.00	30.00	8.7			○	○	○	○	○	○									○	○	○	○	○	○						
Rg12.00 - 16.00	12.00	16.00	44.2			○	○	○												○	○	○									
Rg12.00 - 27.72	12.00	27.72	14.7	○	○	○	○	○										○	○	○	○	○	○								
Rg12.00 - 32.00	12.00	32.00	11.0			○	○	○												○	○	○	○	○	○						
Rg12.00 - 43.30	12.00	43.30	6.0				●	●	●												●	●	●								
Rg15.00 - 34.64	15.00	34.64	14.7	○	○	○	○	○										○	○	○	○	○									
Rg20.00 - 43.30	20.00	43.30	16.7	○	○	●	●	●	○	○								○	○	●	●	○	○	○	○						
Rg20.00 - 46.76	20.00	46.76	14.4	○	○	○	○	○	○	○								○	○	○	○	○	○	○	○						
Rg22.00 - 37.48	22.00	37.48	27.0				○	○															○	○							



# Rd DIN 24041

Round holes, diagonal

Hole width =  $w$   
 Spacing =  $t$   
 Margin width =  $c$   
 Relative open area =  $A_0\%$



Material:

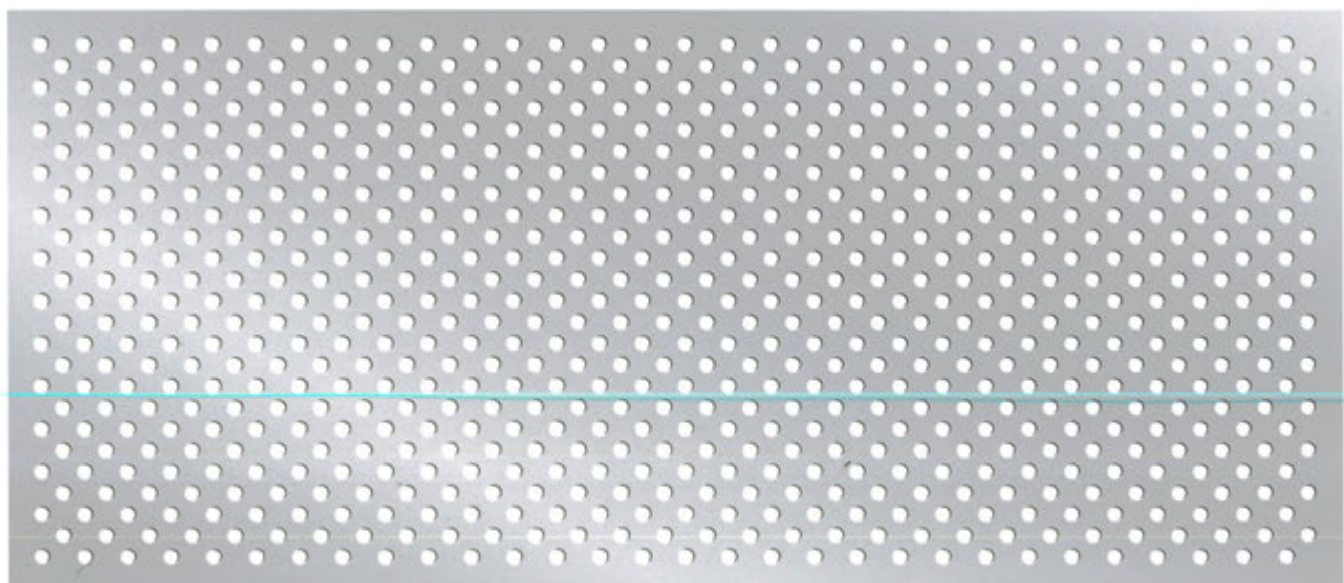
○ = Sheet steel/Aluminium

● = Stainless steel

Further details on page 24

Available in all grades

Perforation pattern DIN-specification	Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1000 mm							Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1250 mm							Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1500 mm													
	w	t	A <sub>0</sub> %	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	
Rd 2.00 - 4.00	2.00	4.00	19.6	○	○	○	○					○	○	○	○					○	○	○	○					
Rd 2.50 - 4.00	2.50	4.00	30.7	○	○	○	○	○				○	○	○	○					○	○	○	○	○				
Rd 2.50 - 5.50	2.50	5.50	16.2	○	○	○	○					○	○	○	○					○	○	○	○					
Rd 2.50 - 7.78	2.50	7.78	8.1	●	●	○	○	○				●	●	○	○					○	○	○	○					
Rd 2.50 - 11.00	2.50	11.00	4.1	○	○	○	○																					
Rd 3.00 - 5.80	3.00	5.80	21.0	●	●	○	○	○	○			●	●	○	○	○				○	○	○	○	○				
Rd 3.00 - 8.20	3.00	8.20	10.5	○	○	●	○	○	○			○	○	●	○	○				○	○	○	○	○				
Rd 3.00 - 8.48	3.00	8.48	9.8	○	○	○	○	○				○	○	○	○					○	○	○	○	○				
Rd 3.20 - 8.48	3.20	8.48	11.1	○	○	○	○	○				○	○	○	○					○	○	○	○	○				
Rd 3.50 - 8.48	3.50	8.48	13.4	○	○	○	○	○				○	○	○	○					○	○	○	○	○				
Rd 5.00 - 8.00	5.00	8.00	30.7	○	○	○	○	○				○	○	○	○					○	○	○	○	○				
Rd 5.00 - 10.60	5.00	10.60	17.5	●	●	○	○	○				●	●	○	○					○	○	○	○					
Rd 5.00 - 14.14	5.00	14.14	9.8			○	○	○						○	○						○	○	○					
Rd 6.00 - 9.00	6.00	9.00	34.9					○	○																			
Rd 10.00 - 21.21	10.00	21.21	17.5			●	○	○	○	○			●	○	○	○					○	○	○	○	○			
Rd 22.00 - 26.50	22.00	26.50	54.1					○	○															○	○			



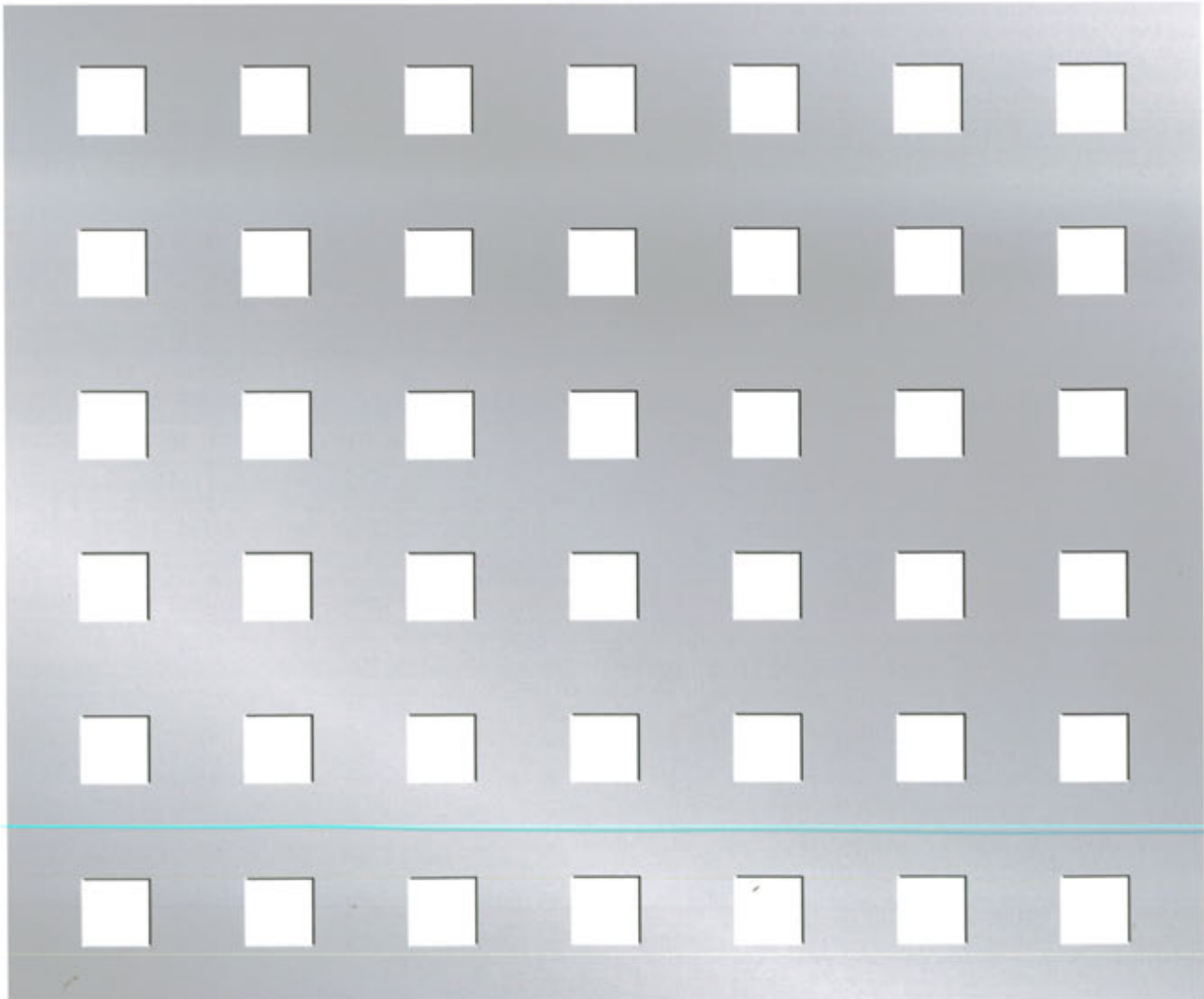


# Qg DIN 24041

Square holes, straight

I. Perforated sheets to customer specifications

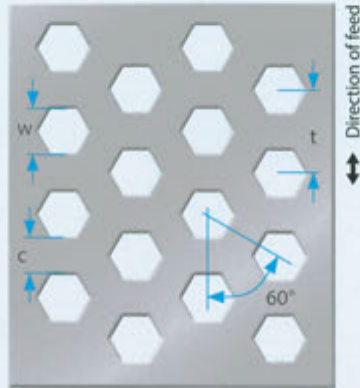
Perforation pattern DIN-specification w t A <sub>0</sub> %	Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1000 mm								Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1250 mm								Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1500 mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Qg10.00 - 13.00 10.00 13.00 59.2	□	□	□	□	□			□	□	□	□	□	□			□	□	□	□	□	□			
Qg10.00 - 14.00 10.00 14.00 51.0	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	
Qg10.00 - 15.00 10.00 15.00 44.4	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	
Qg10.00 - 24.00 10.00 24.00 17.4	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	
Qg10.00 - 26.00 10.00 26.00 14.8	□	□	□	□	□			□	□	□	□	□	□			□	□	□	□	□	□			
Qg10.00 - 28.00 10.00 28.00 12.8	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□		
Qg10.00 - 30.00 10.00 30.00 11.1	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□		
Qg10.00 - 48.00 10.00 48.00 4.3	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□		
Qg12.00 - 14.00 12.00 14.00 73.5			□	□	□	□				□	□	□	□				□	□	□	□				
Qg12.00 - 28.00 12.00 28.00 18.4			□	□	□	□				□	□	□	□				□	□	□	□				
Qg15.00 - 20.00 15.00 20.00 56.3			□	□	□	□				□	□	□	□				□	□	□	□				
Qg15.00 - 40.00 15.00 40.00 14.0			□	□	□	□				□	□	□	□				□	□	□	□				
Qg20.00 - 25.00 20.00 25.00 64.0			□	□	□	□	□			□	□	□	□				□	□	□	□				
Qg20.00 - 50.00 20.00 50.00 16.0			□	□	□	□	□			□	□	□	□	□			□	□	□	□	□	□		
Qg25.00 - 40.00 25.00 40.00 39.1			□	□	□	□				□	□	□	□				□	□	□	□				



# SW DIN 24041

Hexagonal holes, staggered

Hole width = w  
 Spacing = t  
 Margin width = c  
 Relative open area =  $A_0$  %



Material:

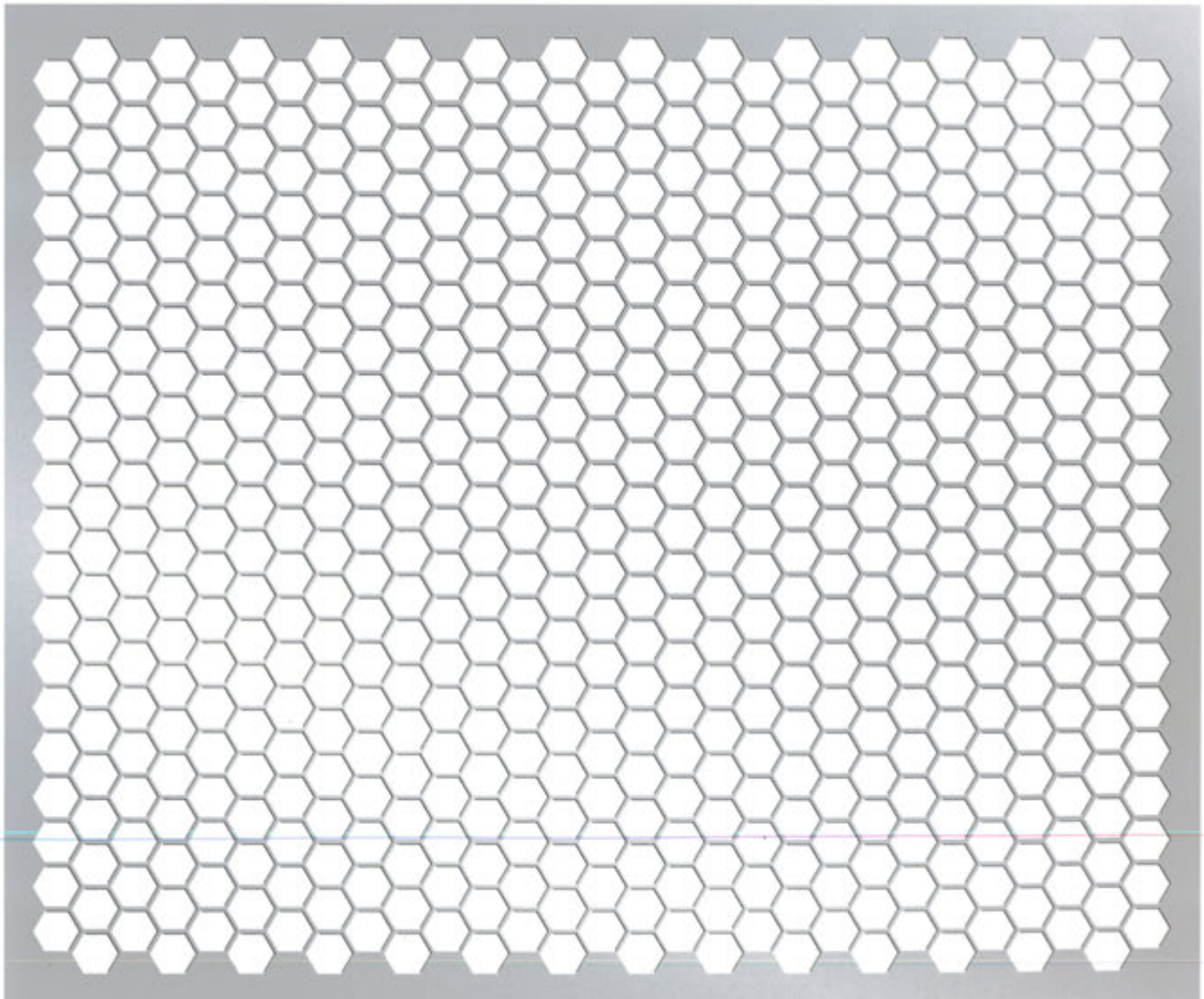
○ = Sheet steel/Aluminium

● = Stainless steel

Further details on page 24

Available in all grades

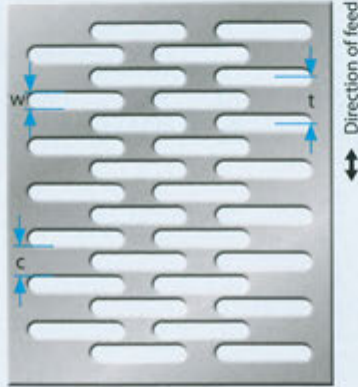
Perforation pattern DIN-specification w t $A_0$ %	Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1000 mm							Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1250 mm							Thickn. (s) in mm/up to Width (a <sub>1</sub> ) 1500 mm									
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
SW 6,00 - 6,70 6,00 6,70 80,2			○	○	○																			



# Lv DIN 24041

Slot perforations, staggered

- Hole width =  $w$
- Spacing =  $t$
- Margin width =  $c$
- Relative open area =  $A_0\%$



Material:

- = Sheet steel/Aluminium
- = Stainless steel

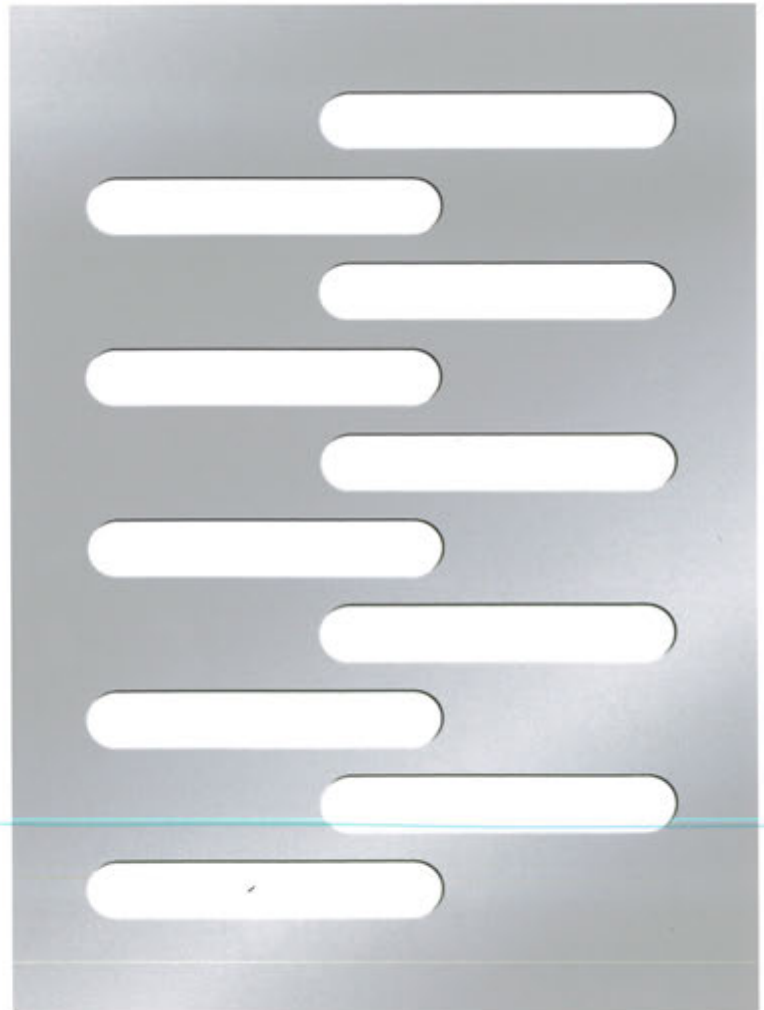
Further details on page 24

Available in all grades

Perforation pattern DIN-specification	Thickn. (s) in mm / up to Width (a <sub>0</sub> /b <sub>2</sub> ) 1000 mm								Thickn. (s) in mm / up to Width (a <sub>0</sub> /b <sub>2</sub> ) 1250 mm								Thickn. (s) in mm / up to Width (a <sub>0</sub> /b <sub>2</sub> ) 1500 mm												
	w	l	t <sub>1</sub>	t <sub>2</sub>	A <sub>0</sub> %	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Lv 3.00 - 10.00	6.00	12.00	46.10			○	○	○	○	○				○	○	○	○	○				○	○	○	○	○			
Lv 8.00 - 50.00	12.08	66.00	48.45							○	○								○	○						○	○		



Lv 3.00-10.00 (1:1 scale)

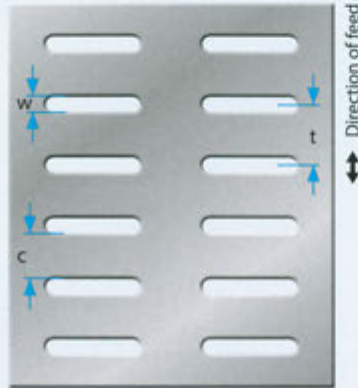


Lv 8.00-50.00 (1:1 scale)

# Lg DIN 24041

Slot perforations, straight

Hole width =  $w$   
 Spacing =  $t$   
 Margin width =  $c$   
 Relative open area =  $A_0$  %



Material:

○ = Sheet steel/Aluminium

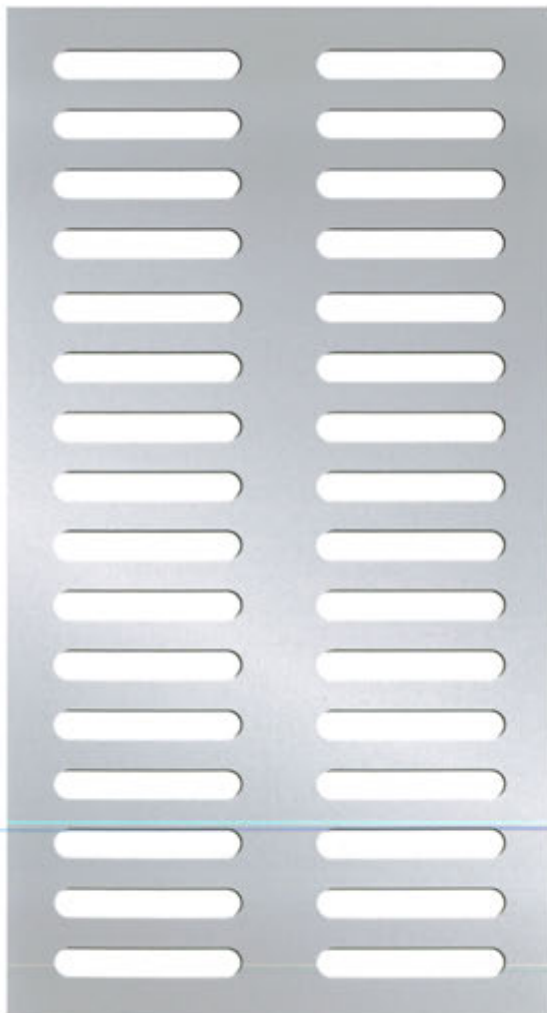
● = Stainless steel

Further details on page 24

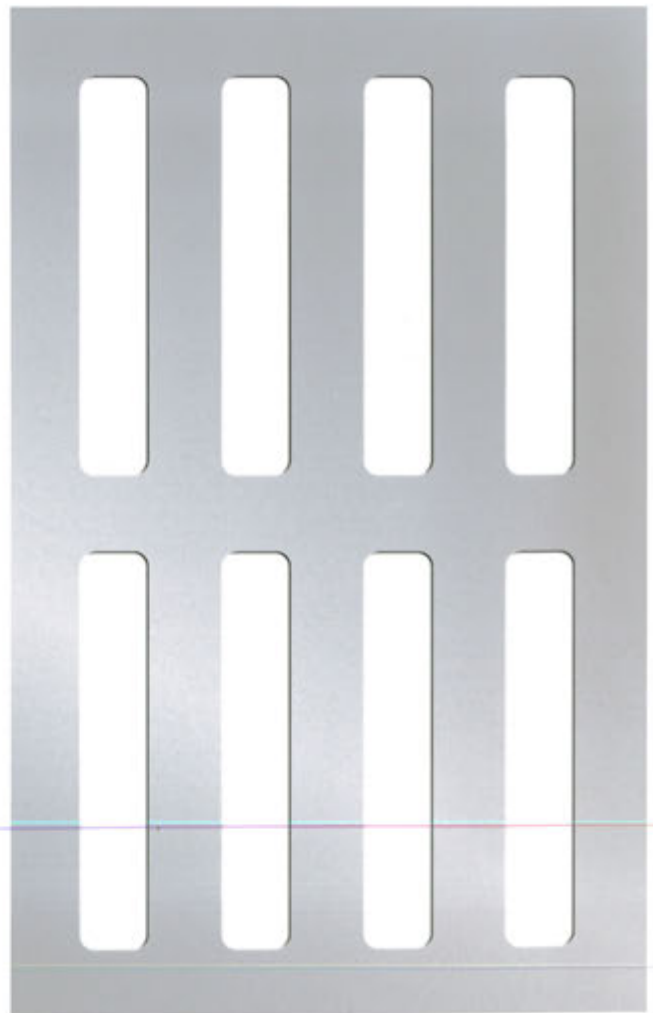
Available in all grades

L Perforated sheets to customer specifications

Perforation pattern DIN-specification	Thickn. (s) in mm/up to Width (a <sub>1</sub> /b <sub>2</sub> ) 1000 mm							Thickn. (s) in mm/up to Width (a <sub>1</sub> /b <sub>2</sub> ) 1250 mm							Thickn. (s) in mm/up to Width (a <sub>1</sub> /b <sub>2</sub> ) 1500 mm															
	w	l	t <sub>1</sub>	t <sub>2</sub>	A <sub>0</sub> %	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	
Lg 4.00 - 25.00	8.00	35.00	34.50					○	○	○																				
Lg 5.00 - 15.00	15.00	25.00	18.57																											
Lg 8.00 - 50.00	24.16	66.00	24.22																											
LgE9.00 - 53.00	18.80	63.10	40.21																											



Lg 4.00-25.00 (1:1 scale)



LgE 9.00-53.00 (1:1 scale)



## 1. Perforated sheets to customer specifications

### Specification or description of perforated sheets

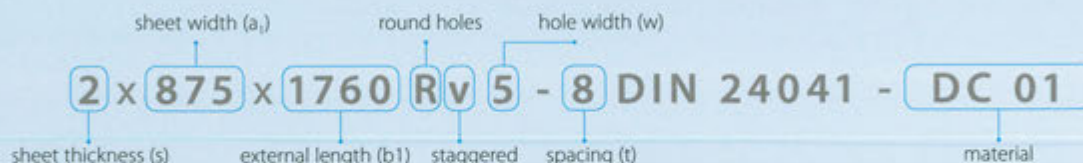
#### 1. The following standards are used as a base:

DIN 4185 T2: Terms and symbols for perforated bottom plates, perforated sheets

DIN 24041: Perforated sheets, dimensions

#### 2. Abbreviated specification of a perforated sheet

with perforation Rv in acc. with DIN 24041 e.g.:



#### 3. For enquiries and orders:

Queries can be avoided if you provide the following data (no. 1 – 10) or provide a drawing or sketch, as shown in the example below (fig. 1): In the event of missing data, we will select the best alternative for production.

##### 1. Quantity

2. **Material type**, in acc. with DIN and/or material no.

3. **Sheet external dimensions:** thickness · width · length (mm)

$$(s \cdot a_1 \cdot b_1)$$

##### 4. Tolerances:

a) In acc. with **DIN 24041**

b) Acc. to **fixed dimension** in acc. with **DIN 24041**

c) Acc. to **customer tolerances**, which must be expressly confirmed by us, otherwise according to b)

5. **Specification of perforation** acc. to **DIN...**

#### 4. Calculating the weight of perforated sheets

a) For sheets with the least unperforated edges (see 4.):

$$G \approx \frac{100 - A_0}{100} \cdot s \cdot a_1 \cdot b_1 \cdot \gamma \quad [\text{kg}]$$

b) For normal perforated sheets with larger edge widths:

$$G \approx \left( \frac{100 - A_0}{100} + \frac{a_1 \cdot b_1}{a_2 \cdot b_2} - 1 \right) \cdot s \cdot a_1 \cdot b_1 \cdot \gamma \quad [\text{kg}]$$

c) For relatively small perforated areas:

$$G = \frac{[a_1 \cdot b_1 - (\text{area of a hole} \times \text{number of holes})]}{[\text{m}^2]} \cdot s \cdot \gamma \quad [\text{kg}]$$

##### Examples:

1.) Perforated plate 1.5 · 1370 · 3000 Rv 5 - 8 DIN 24041 St 1203 least unperforated edge on all sides according to formula a)

$$G = \frac{100 - 35.4}{100} \cdot 1.5 \cdot 1.37 \cdot 3 \cdot 7.85 = 31.26 \text{ kg}$$

2.) The same sheet but with the following edges:

long edge, left  $e_1 = 100$  · front edge, top  $f_1 = 40$

long edge, right  $e_2 = 80$  · front edge, bottom  $f_2 = 119$

according to formula b)

$$G = \left( \frac{100 - 35.4}{100} + \frac{1.37 \cdot 3}{1.19 \cdot 2.841} \right) \cdot 1.5 \cdot 1.19 \cdot 2.841 \cdot 7.85 = 34.30 \text{ kg}$$

6. For staggered perforation Rv, the **"direction of feed"** or **"direction of perforation"**.

7. **Width of the unperforated edges** acc. to diagram below ( $e_1, e_2, f_1, f_2$ ). Please note: perforation field dimensions  $a_2$  and  $b_2$  must correspond to the master gauge for holes; therefore always check whether x and y are whole numbers. See figs. 2, 3, 4 and 5. Only then determine the edges. The edge width is always given as a measurement between the edge of the sheet and the external edges of the perforations in the rows of perforations on the outer edge of the field of perforations.

(Never relate dimensions e and f to the centre of the perforation!)

8. **Raw edge** (always at the bottom if not given). For unusual sheet shapes it is absolutely essential to indicate the raw edge.

9. **Surface** (low-grease, oiled, coated, etc.)

10. **Delivery details** (date, method of dispatch, etc.)

G = weight in kg

s = sheet thickness in mm

$a_1$  = sheet width in m

$b_1$  = sheet length in m

$a_2$  = width of perforation field in m

$b_2$  = length of field of perforation in m

$\gamma$  = gross density of material in kg/dm<sup>3</sup>

for steel  $\gamma = 7.85$

for stainless steel  $\gamma = 7.85$

for aluminium  $\gamma = 2.7$

##### Note:

Formula c) provides the theoretically exact value, as opposed to formula b) where the deviation is less than 0.1 %, however. Easier to handle, formula b) therefore provides sufficiently precise values, especially since the sheet thickness tolerances lead to substantially higher deviations. Formula a) leads to even greater discrepancies because it does not take the unperforated edges into consideration. In the example shown opposite the deviation is 3.02 kg  $\triangleq$  8.8 %, if example 2) is calculated according to formula a).

according to formula c)

$$G = \left[ 1.37 \cdot 3 - \left( \frac{0.005^2 \cdot \pi}{4} \cdot 355 \cdot 172 \right) \right] \cdot 1.5 \cdot 7.85 = 34.28 \text{ kg}$$

# Perforated metal – the basics

## Glossary

### "Narrowest unperforated edge" (least unperforated edge)

This depends on the type of perforation, the thickness of the sheet, the tolerances of the external dimensions of the sheet and the manufacturing tolerances in perforation. It is kept as narrow as technically tenable.

### "Cut through the perforation"

means that the trimming cut is directed through the field of perforation, thus creating an outer edge of the sheet which is not smooth but interrupted by perforation cuts, thus presenting no unperforated edge (see diagram right).

### Beginning and end of field of perforations

If no specific agreement has been made, the field of perforations may begin and also end with incomplete rows of perforations for technical reasons (see diagram right).

### Perforation profile

The perforations on the top of the sheet become slightly rounded in the process and on the bottom a small ridge on the edges of the holes is unavoidable. The hole extends downwards slightly and the narrowest part of the perforation profile is counted as hole width  $w$ .

### "Direction of feed" of perforation; "direction of perforation"

For perforations in staggered rows (Rv) the position of the master gauge for holes in relation to the sheet dimensions must be determined by the "direction of feed". Direction of feed means the direction of a perforation whose rows of holes are obviously straight and where the distances between the holes are always equal to the spacing. The direction of perforation is at an angle to the direction of feed (see diagram 1).

### "Relative open area $A_0$ ", also called "freespace sectional area"

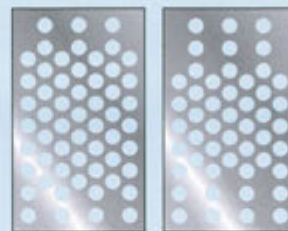
"free clearance" or "open screen surface" is defined by DIN as "proportion of perforation in %, related to a hole with half margin widths". This means that this theoretical value does not represent the proportion of the open perforation surfaces related to the whole sheet area including unperforated edges and zones. This must be borne in mind when calculating sheet weights, air permeability, etc.



cut through the perforation



complete or "closed master gauge for holes"



"open master gauge for holes" or incomplete rows of holes on beginning and end of sheet

## Symbols and terms used

(also refer to calculation documents)

$a_1$ = Sheet width, external dimension	(mm)	$u$ = Distance between rows	(mm)
$a_2$ = Width of field of perforation	(mm)	$v$ = Hole misalignment	(mm)
$b_1$ = External length of sheet	(mm)	$w$ = Hole width	(mm)
$b_2$ = Length of field of perforation	(mm)	$x$ = Number of spaces between rows	
$c$ = Width of margin	(mm)	"u" or "g"	
$e_1$ = Width of long edge, left	(mm)	$y$ = Number of hole misalignment	
$e_2$ = Width of long edge, right	(mm)	measurements "v" or "g"	
$f_1$ = Width of front edge, top	(mm)	$A_0$ = Relative perforation clearance face	
$f_2$ = Width of front edge, bottom	(mm)	$\left( \frac{\text{open area}}{\text{perforation field area}} \cdot 100 \right) \quad (\%)$	
$g$ = Spacing between rows with Rd, Qd	(mm)		
$m$ = Number of rows of perforations		$N_A$ = Number of holes in perforated field	
$n$ = Number of perforations per row		$(N_A = m \cdot n)$	
$s$ = Sheet thickness	(mm)	$N$ = Number of holes per $m^2$	
$t$ = Spacing	(mm)		

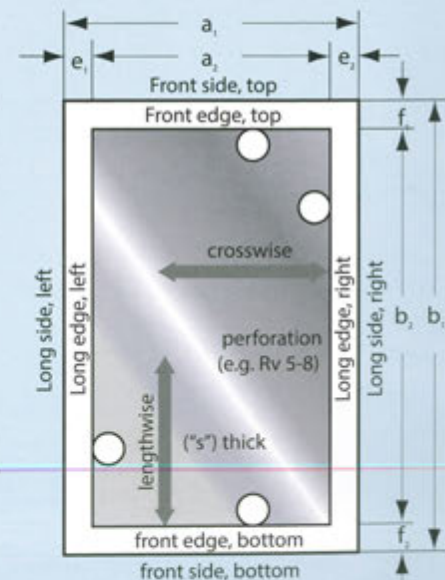


Fig. 1

## II. Perforated sheets straight from stock



# High-quality perforated sheets available fast – straight from stock

## Top quality

As our customer, you can receive high-quality, flat perforated sheets and panels **directly from the manufacturer**.

## Extensive selection straight from stock

With a comprehensive range of in-stock perforated sheets, Alfahd Steel Perforated Metal offers their customers decisive benefits. They can choose between cold-rolled, hot-rolled and hot-dip galvanised steel, stainless steel or aluminium.

Our standard range covers perforated sheets in 0.75 – 3.0 mm thicknesses, either with round or square perforations. On request, we can provide other material thicknesses, too.

## Enormous variety

All articles listed can be immediately supplied from stock. On request, we can supply other sheets, also with very fast delivery times. The formats in stock can of course also be cut to fit your specific needs quickly and cost effectively in our own production facilities.

## Fast delivery

By guaranteeing delivery within 24 - 48 hours after receipt of order, our service is among the fastest in the entire sector. Orders received before 2 pm will be shipped out on the same day.



Perfect quality



Great variety



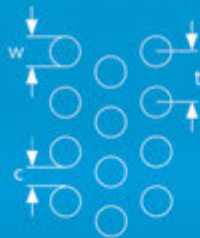
Delivery in 24/48 hours

# Rv 2.00-3.50

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*		●	●		●						●													
Steel		●	●		●						●													
Stainless steel 1.4301 (AISI 304)																								
Aluminium AL 99,5 (EN AW-1050A)																								
Aluminium ALMG3 (EN AW-5754)																								

\* hot-dip galvanised material

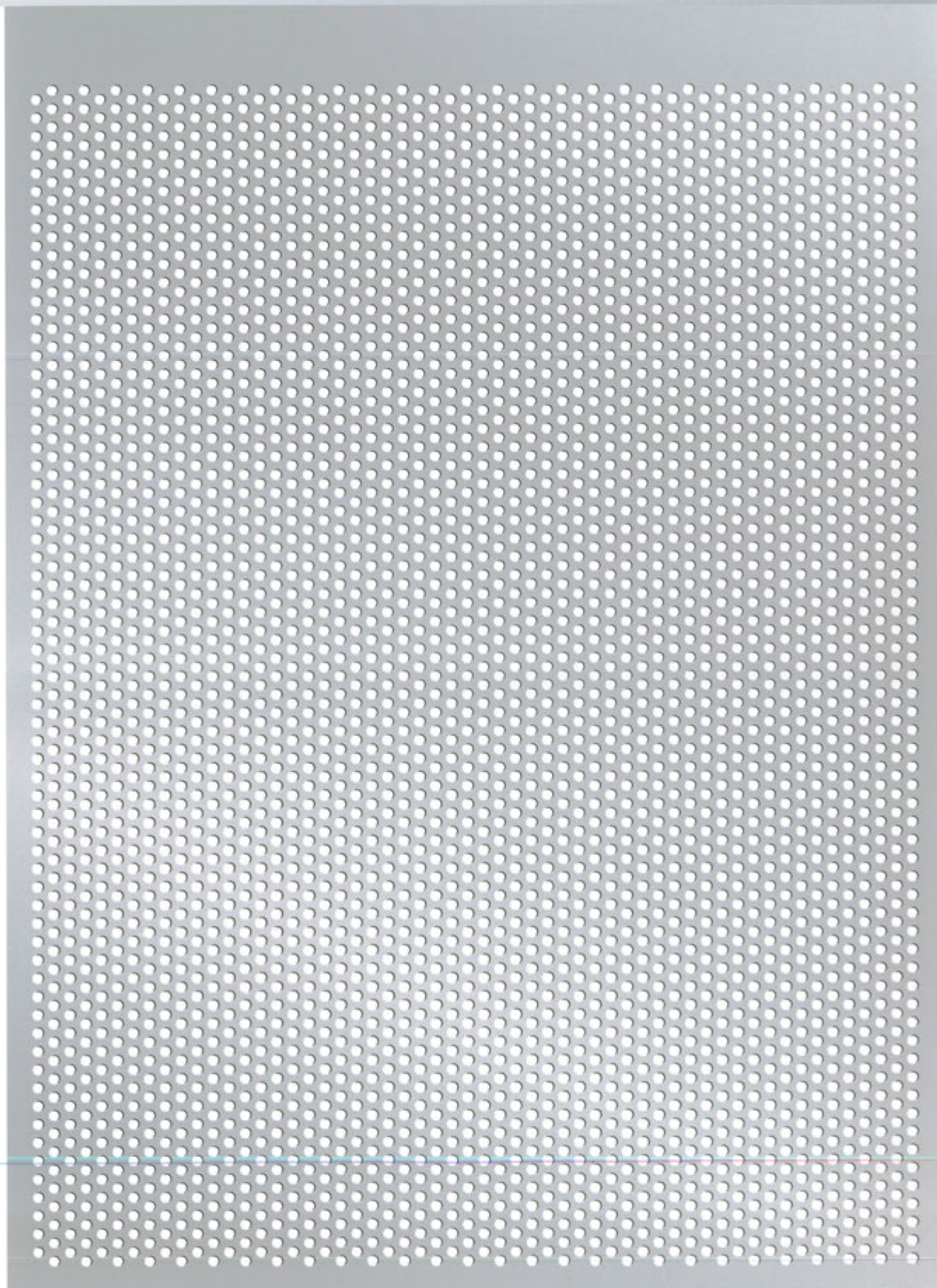
- Feed direction ↑
- Hole width (w) = 2.00
- Spacing (t) = 3.50
- Margin width (c) = 1.50
- Relative open area ( $A_o$  %) = 29.60



Rv 2.00-3.50



1:1 scale



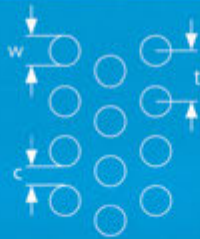
II. Perforated sheets straight from stock

# Rv 3.00-5.00

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*		●	●		●						●		●						●		●			
Steel		●	●		●	●			●		●		●						●		●			
Stainless steel 1.4301 (AISI 304)			●		●						●		●											
Aluminium AL 99,5 (EN AW-1050A)	●	●			●	●																		
Aluminium ALMG3 (EN AW-5754)		●			●						●		●						●					

\* hot-dip galvanised material

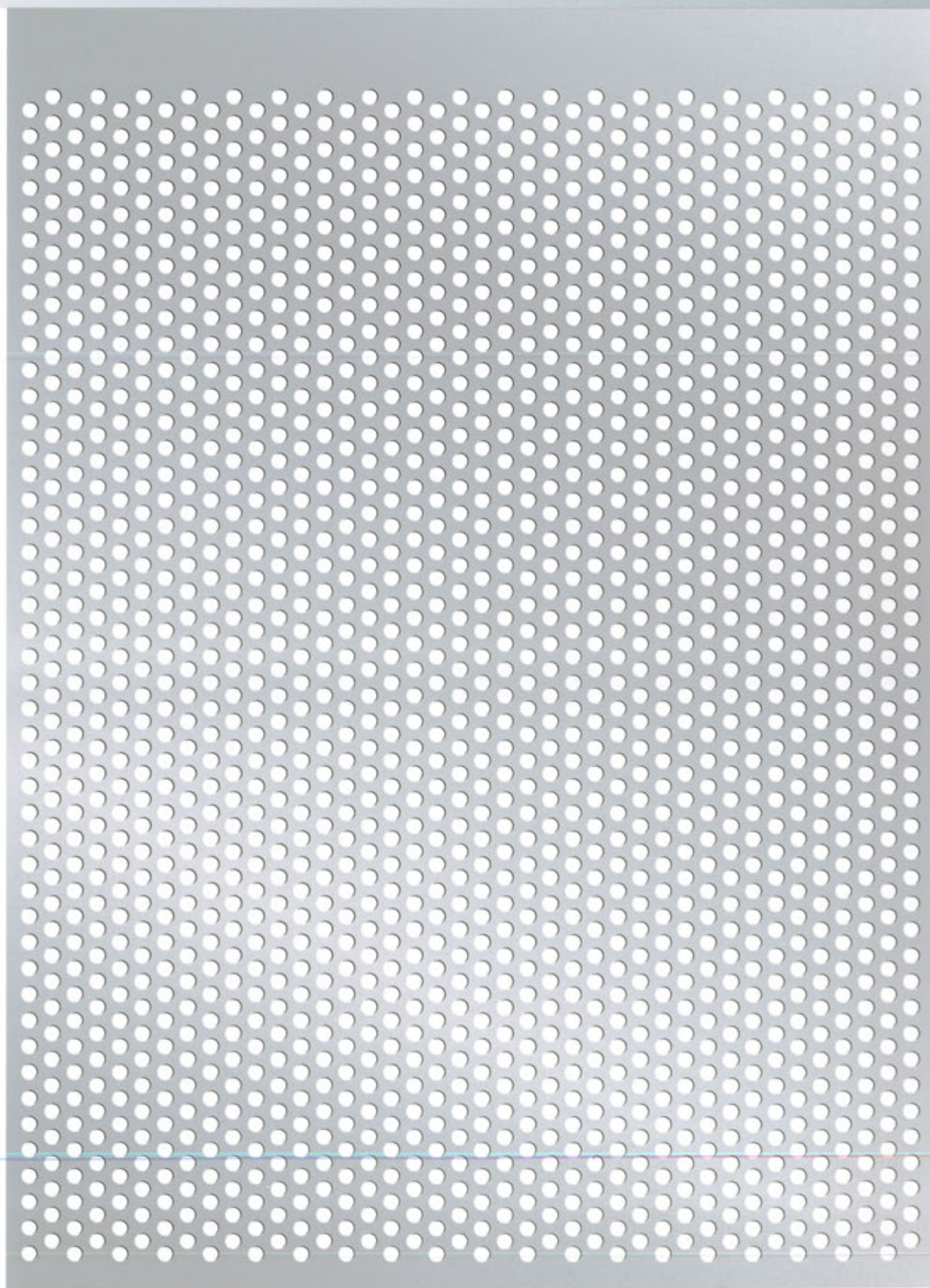
- Feed direction ↑
- Hole width (w) = 3.00
- Spacing (t) = 5.00
- Margin width (c) = 2.00
- Relative open area ( $A_0$  %) = 32.70



Rv 3.00-5.00



1:1 scale



II. Perforated sheets straight from stock

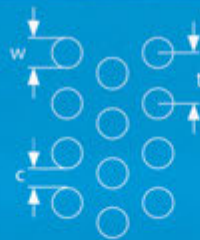


# Rv 4.00-6.00

Material	Small format 1000 x 2000 mm							Medium format 1250 x 2500 mm							Large format 1500 x 3000 mm									
	Thickness in mm							Thickness in mm							Thickness in mm									
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*			●		●	●					●		●						●					
Steel			●		●	●																		
Stainless steel 1.4301 (AISI 304)			●								●													
Aluminium AL 99,5 (EN AW-1050A)			●		●						●		●											
Aluminium ALMG3 (EN AW-5754)			●		●						●		●											

\* hot-dip galvanised material

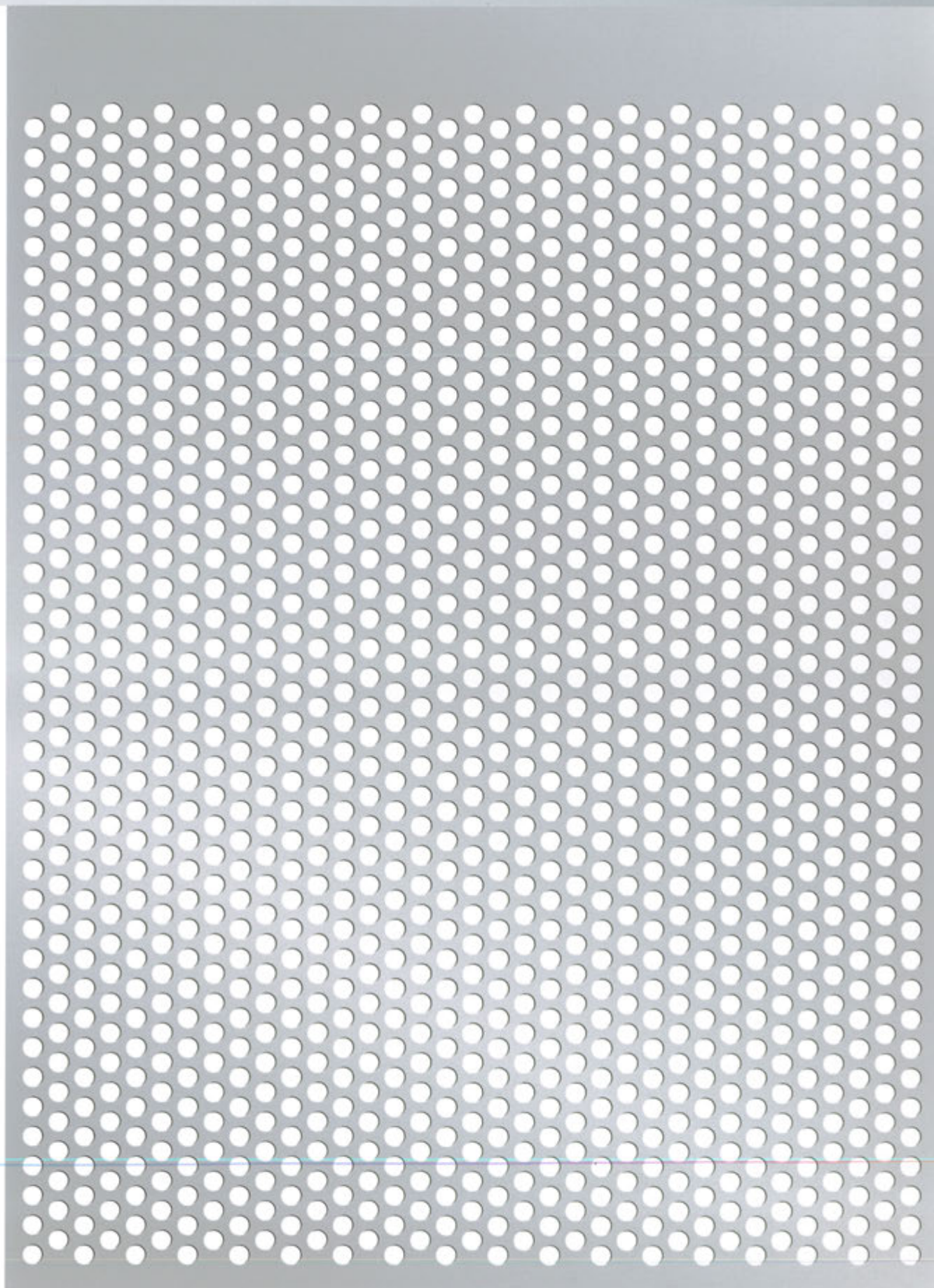
- Feed direction ↓
- Hole width (w) = 4.00
- Spacing (t) = 6.00
- Margin width (c) = 2.00
- Relative open area ( $A_0$  %) = 40.00



Rv 4.00-6.00



1:1 scale



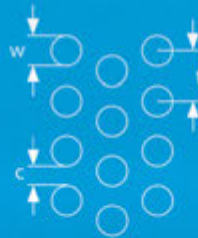
II. Perforated sheets straight from stock

# Rv 5.00-7.00

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*			●								●													
Steel																								
Stainless steel 1.4301 (AISI 304)																								
Aluminium AL 99,5 (EN AW-1050A)																								
Aluminium ALMG3 (EN AW-5754)																								

\* hot-dip galvanised material

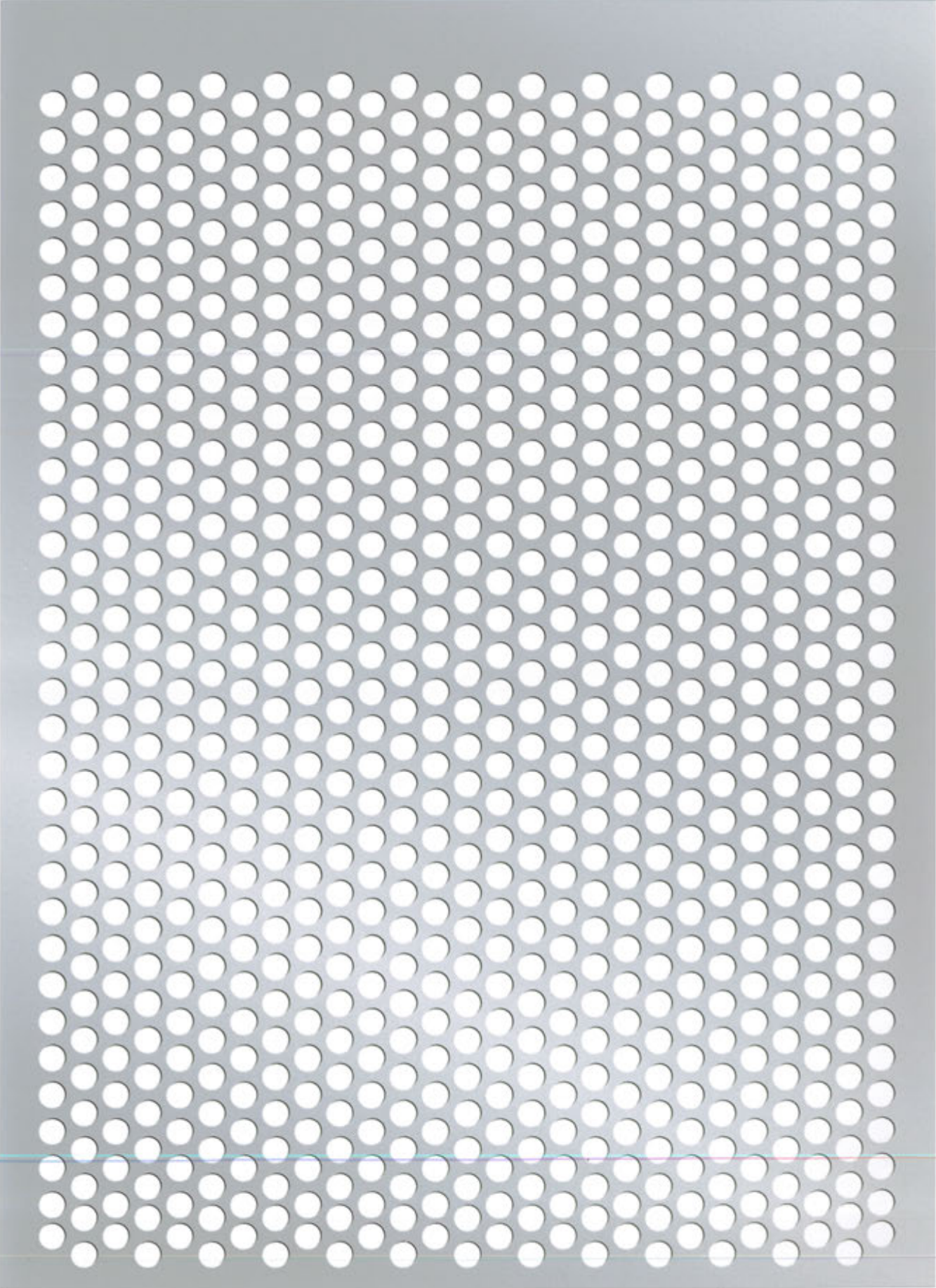
- Feed direction ↓
- Hole width (w) = 5.00
- Spacing (t) = 7.00
- Margin width (c) = 2.00
- Relative open area ( $A_0$  %) = 46.10



Rv 5.00-7.00



1:1 scale



II. Perforated sheets straight from stock

# Rv 5.00-8.00

II. Perforated sheets straight from stock

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*		●	●		●	●		●		●	●		●						●					
Steel			●		●	●		●			●		●	●		●					●	●		●
Stainless steel 1.4301 (AISI 304)			●		●						●		●											
Aluminium AL 99,5 (EN AW-1050A)			●		●	●					●		●						●					
Aluminium ALMG3 (EN AW-5754)		●								●														

\* hot-dip galvanised material

Feed direction ↑

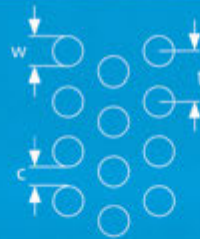
Hole width (w) = 5.00

Spacing (t) = 8.00

Margin width (c) = 3.00

Relative open

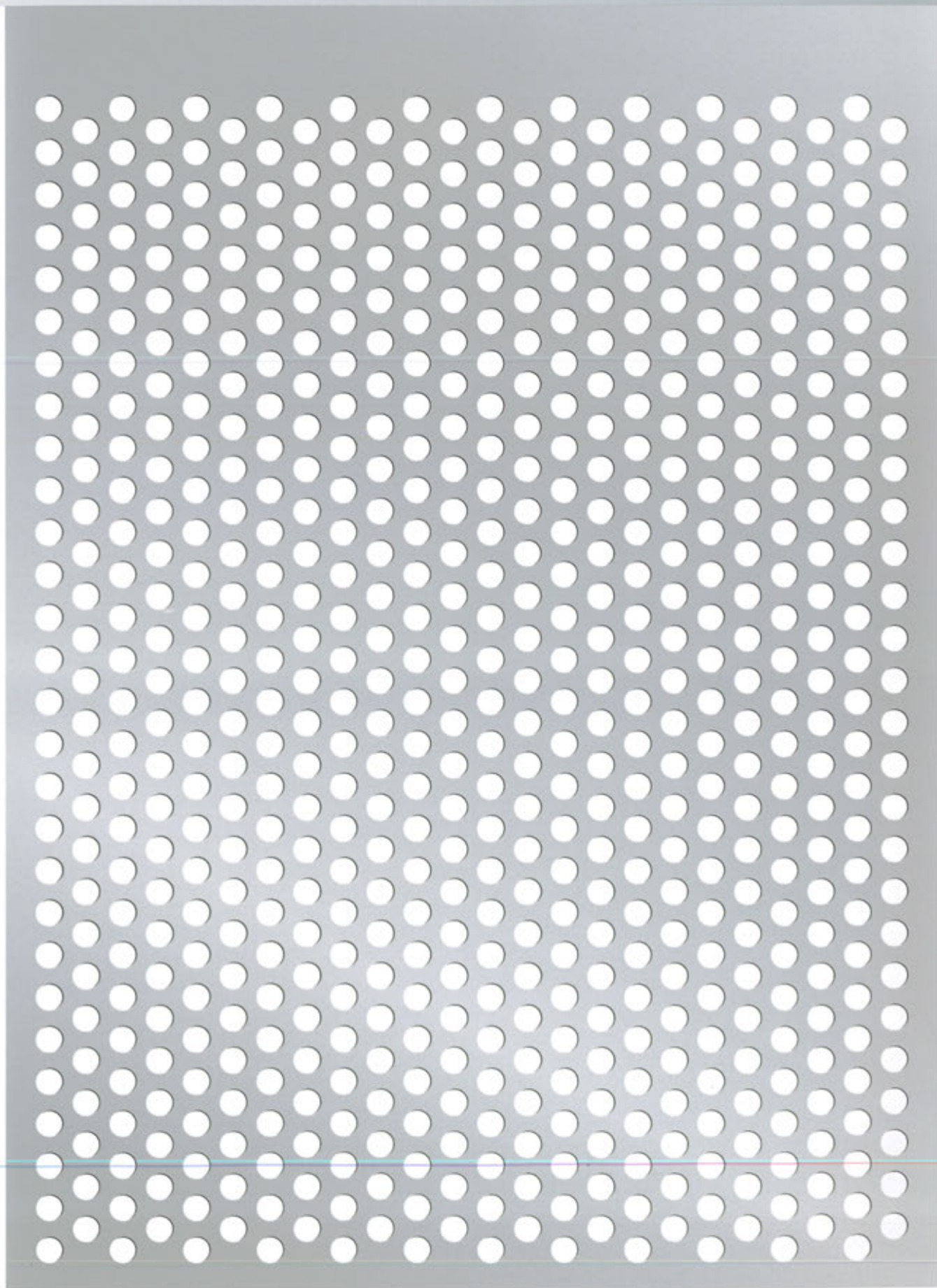
area ( $A_o$  %) = 35.40



Rv 5.00-8.00

1:1

1:1 scale



II. Perforated sheets straight from stock

# Rv 8.00-12.00

II. Perforated sheets straight from stock

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*			●		●	●																		
Steel			●		●	●		●																
Stainless steel 1.4301 (AISI 304)																								
Aluminium AL 99,5 (EN AW-1050A)			●		●	●																		
Aluminium ALMG3 (EN AW-5754)																								

\* hot-dip galvanised material

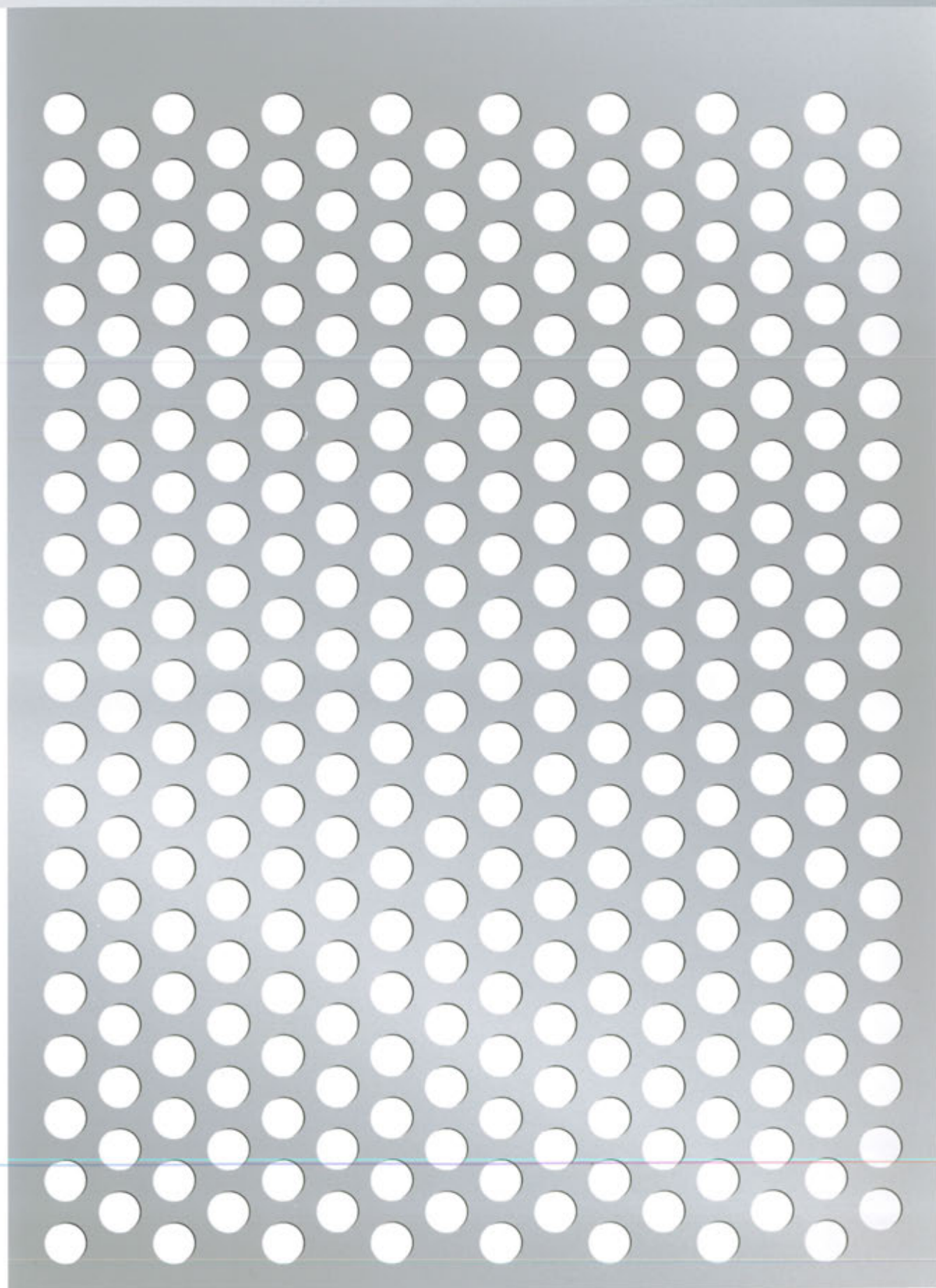
- Feed direction ↑
- Hole width (w) = 8.00
- Spacing (t) = 12.00
- Margin width (c) = 4.00
- Relative open area ( $A_0$  %) = 40.30



Rv 8.00-12.00

1:1

1:1 scale



II. Perforated sheets straight from stock



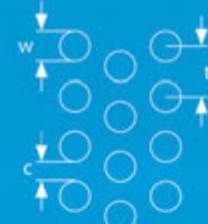
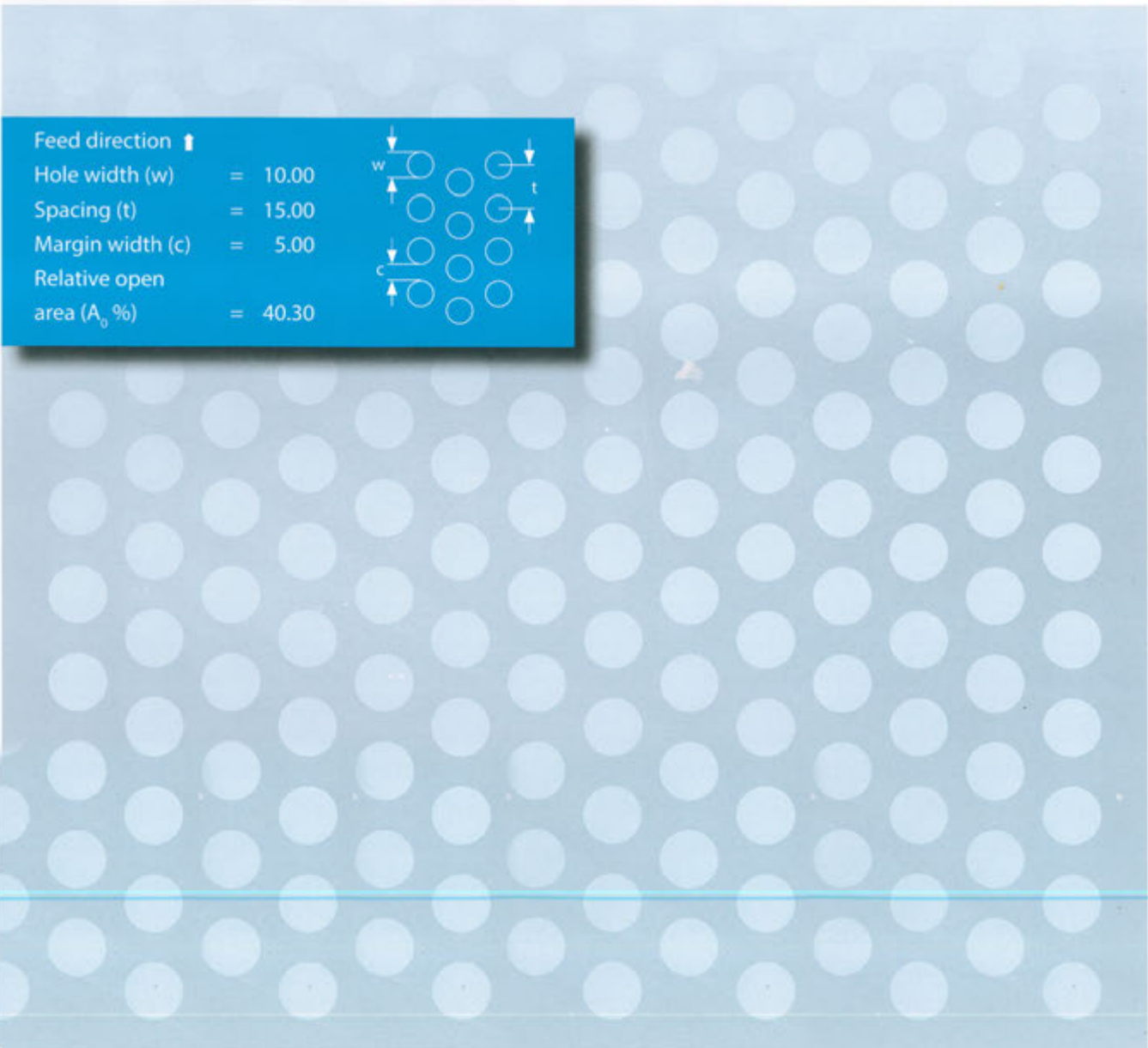
# Rv 10.00-15.00

II. Perforated sheets straight from stock

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm								
	Thickness in mm								Thickness in mm								Thickness in mm								
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	
Steel, hot-dip galvanised*			●		●	●					●		●	●								●			
Steel			●		●	●		●			●		●	●						●		●			
Stainless steel 1.4301 (AISI 304)																									
Aluminium AL 99,5 (EN AW-1050A)			●		●	●									●										
Aluminium ALMG3 (EN AW-5754)																									

\* hot-dip galvanised material

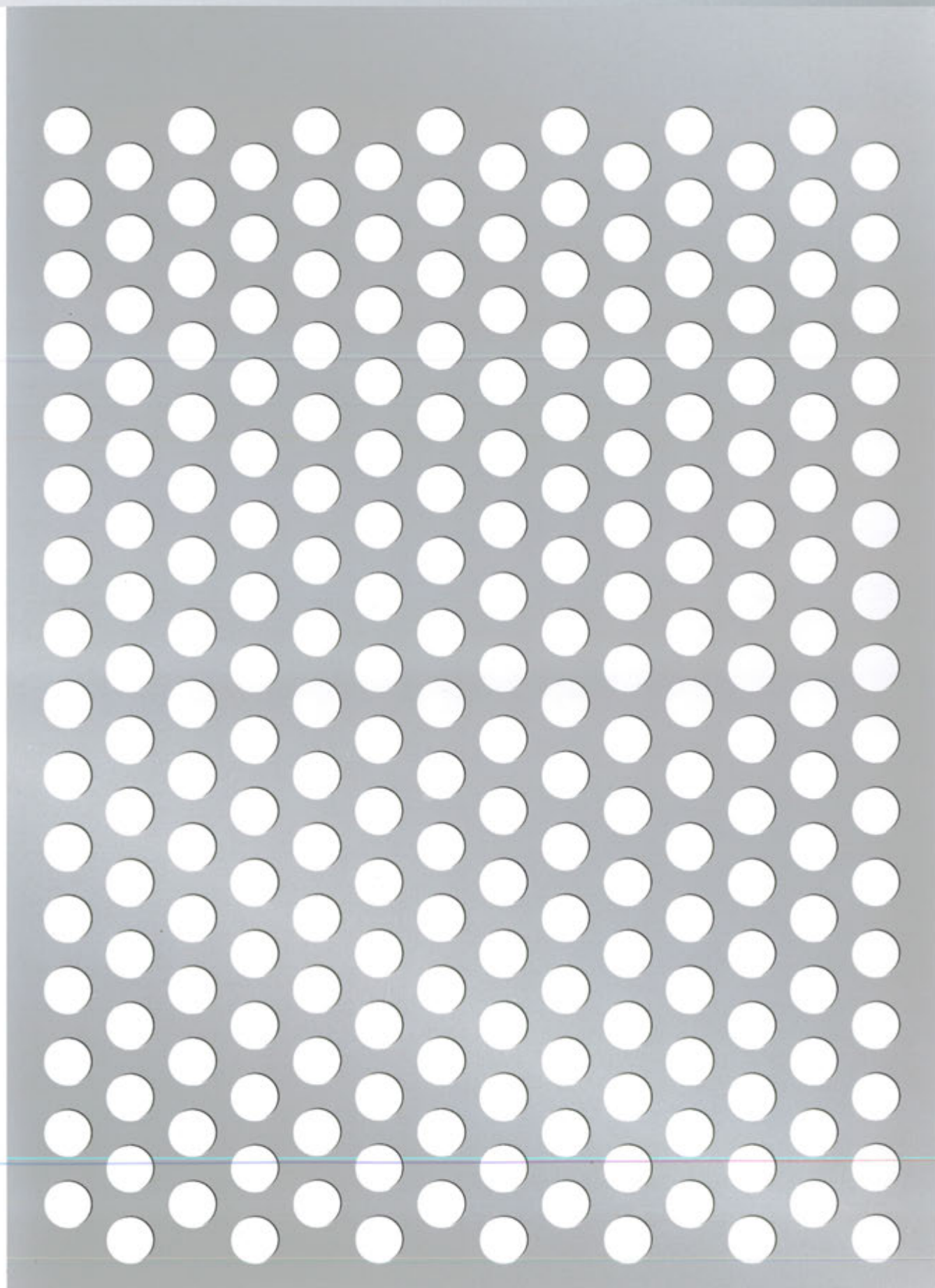
Feed direction ↓		
Hole width (w)	=	10.00
Spacing (t)	=	15.00
Margin width (c)	=	5.00
Relative open area (A <sub>0</sub> %)	=	40.30

Rv 10.00-15.00

1:1

1:1 scale



II. Perforated sheets straight from stock

# Qg 5.00-8.00

Small format 1000 x 2000 mm

Medium format 1250 x 2500 mm

Large format 1500 x 3000 mm

Material	Thickness in mm							Thickness in mm							Thickness in mm									
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*			■		■								■											
Steel			■		■								■											
Stainless steel 1.4301 (AISI 304)																								
Aluminium AL 99,5 (EN AW-1050A)																								
Aluminium ALMG3 (EN AW-5754)																								

\* hot-dip galvanised material

II. Perforated sheets straight from stock

Feed direction

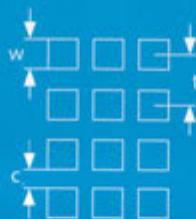
Hole width (w) = 5.00

Spacing (t) = 8.00

Margin width (c) = 3.00

Relative open

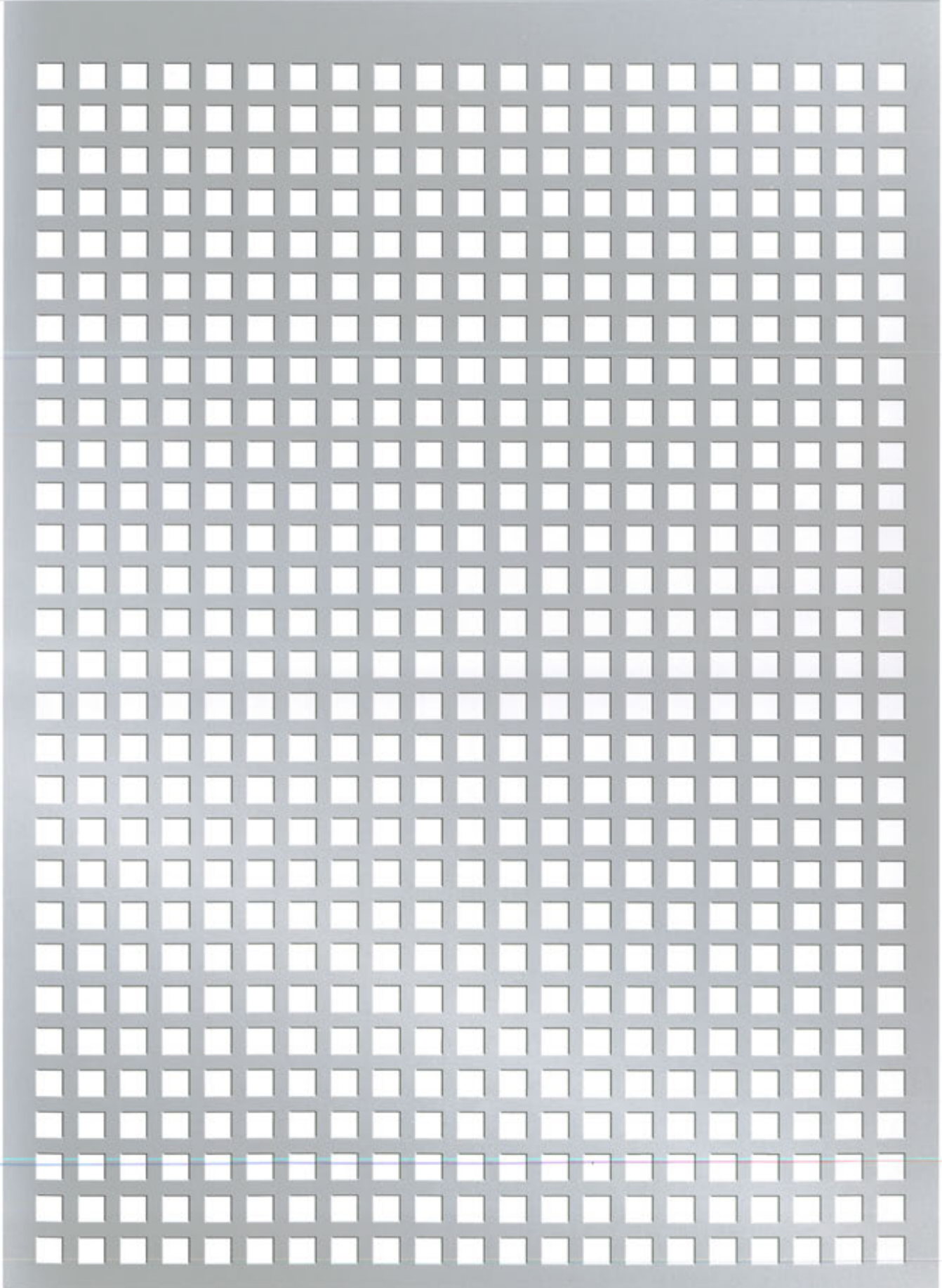
area ( $A_0$  %) = 39.10



Qg 5.00-8.00



1:1 scale



II. Perforated sheets straight from stock

# Qg 8.00-10.00

II. Perforated sheets straight from stock

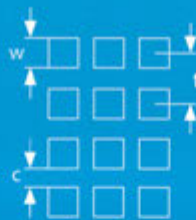
Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*			■		■																			
Steel			■		■																			
Stainless steel 1.4301 (AISI 304)																								
Aluminium AL 99,5 (EN AW-1050A)																								
Aluminium ALMG3 (EN AW-5754)																								

\* hot-dip galvanised material



Feed direction

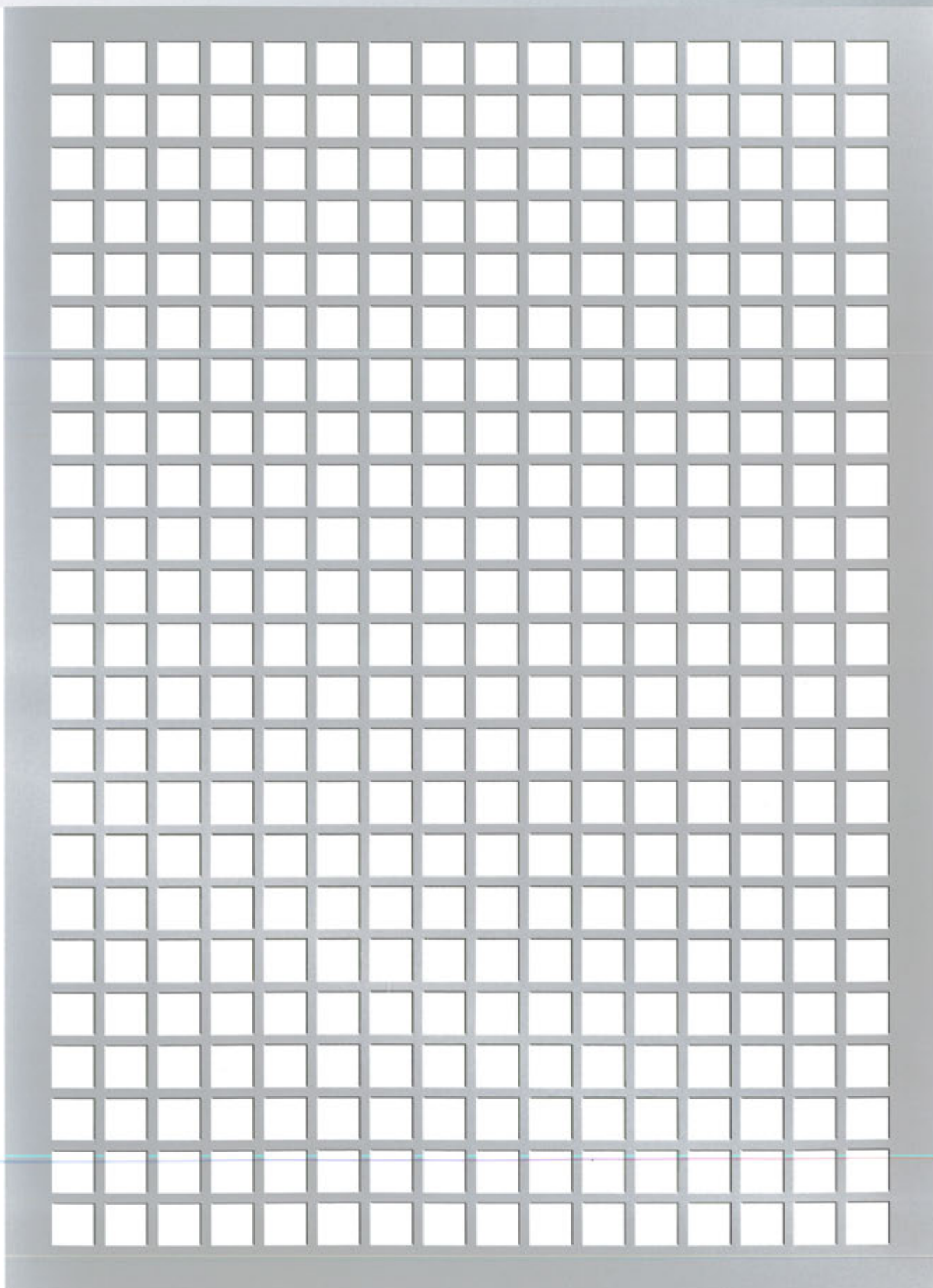
- Hole width (w) = 8.00
- Spacing (t) = 10.00
- Margin width (c) = 2.00
- Relative open area ( $A_o$  %) = 64.00



Qg 8.00-10.00



1:1 scale



II. Perforated sheets straight from stock

# Qg 8.00-12.00

Small format 1000 x 2000 mm

Medium format 1250 x 2500 mm

Large format 1500 x 3000 mm

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*			■										■											
Steel			■		■	■							■											
Stainless steel 1.4301 (AISI 304)																								
Aluminium AL 99,5 (EN AW-1050A)																								
Aluminium ALMG3 (EN AW-5754)																								

\* hot-dip galvanised material

Feed direction

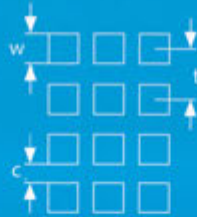
Hole width (w) = 8.00

Spacing (t) = 12.00

Margin width (c) = 4.00

Relative open

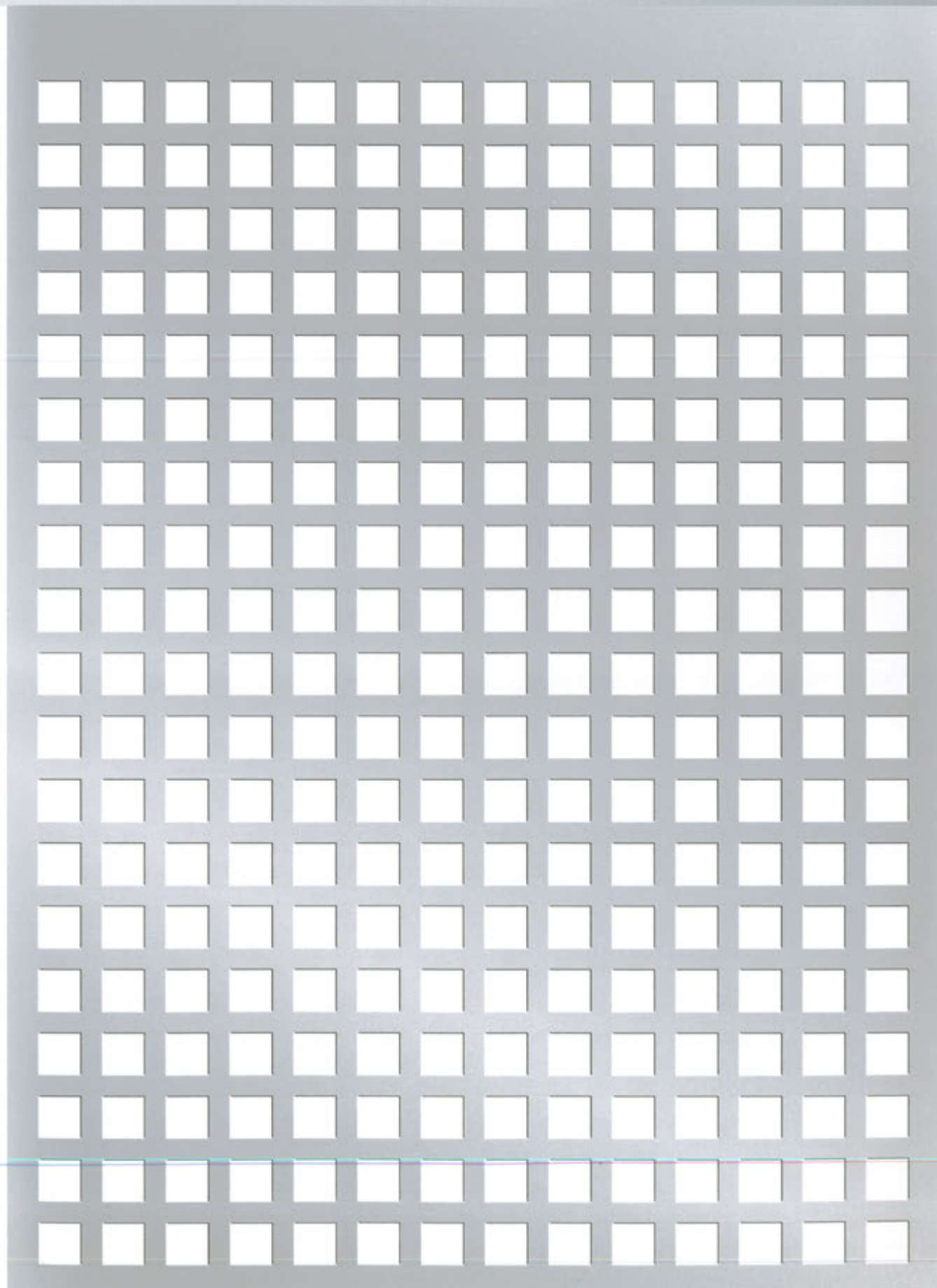
area ( $A_o$  %) = 44.40



Qg 8.00-12.00



1:1 scale



II. Perforated sheets straight from stock

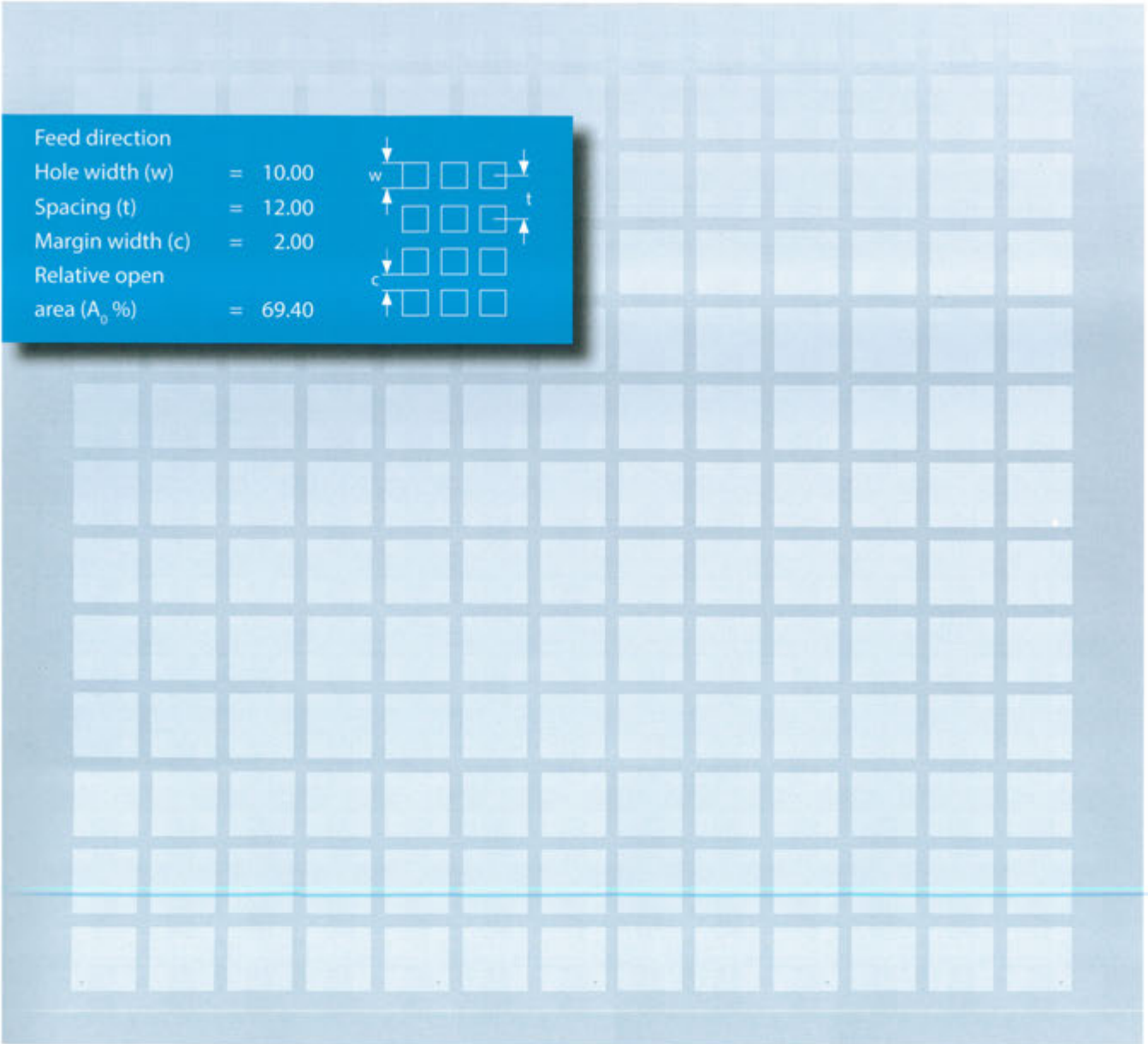


# Qg 10.00-12.00

II. Perforated sheets straight from stock

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*			■											■										
Steel			■		■	■								■	■									
Stainless steel 1.4301 (AISI 304)																								
Aluminium AL 99,5 (EN AW-1050A)																								
Aluminium ALMG3 (EN AW-5754)																								

\* hot-dip galvanised material

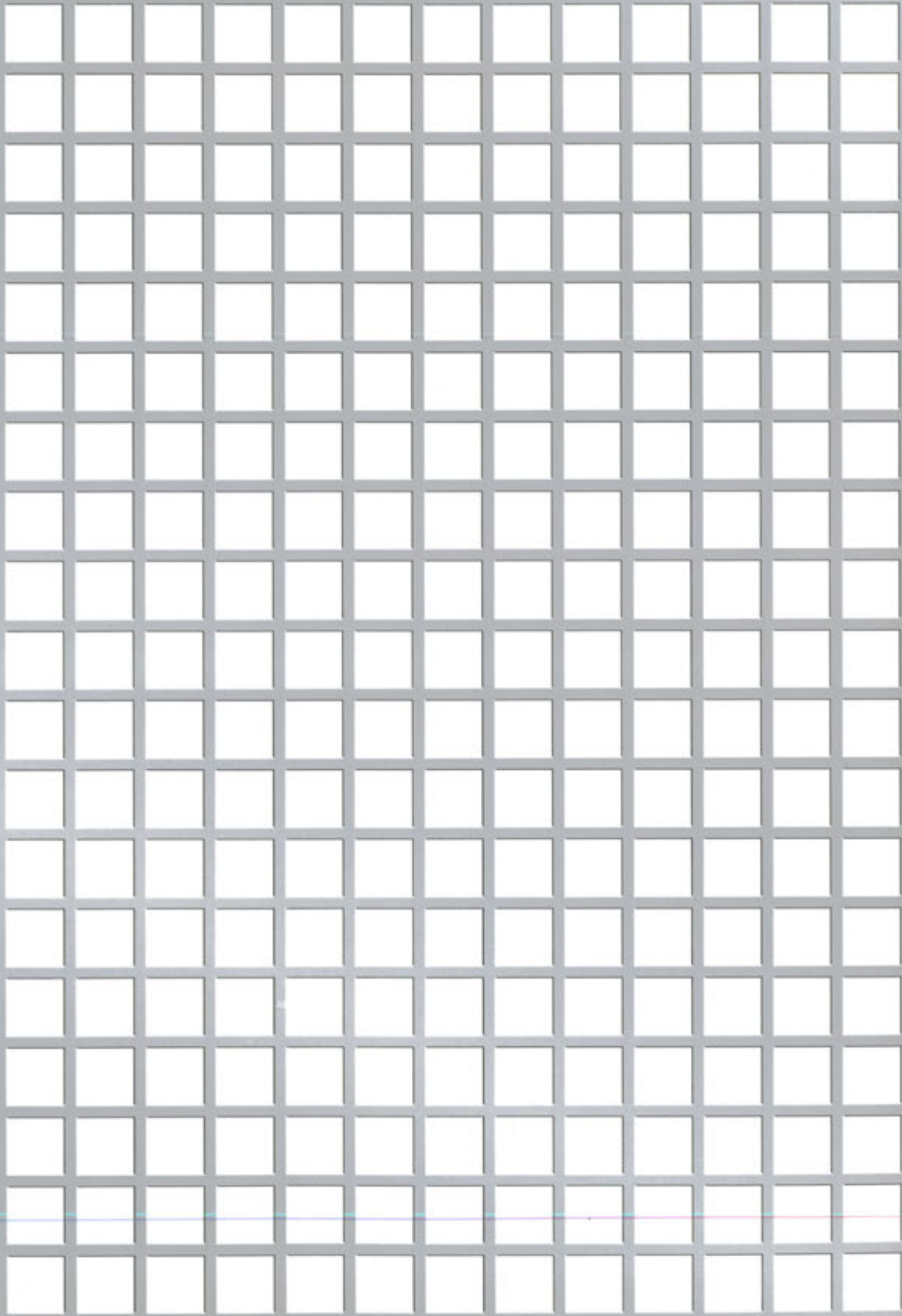


Feed direction		
Hole width (w)	= 10.00	
Spacing (t)	= 12.00	
Margin width (c)	= 2.00	
Relative open area (A <sub>o</sub> %)	= 69.40	

Qg 10.00-12.00



1:1 scale



II. Perforated sheets straight from stock

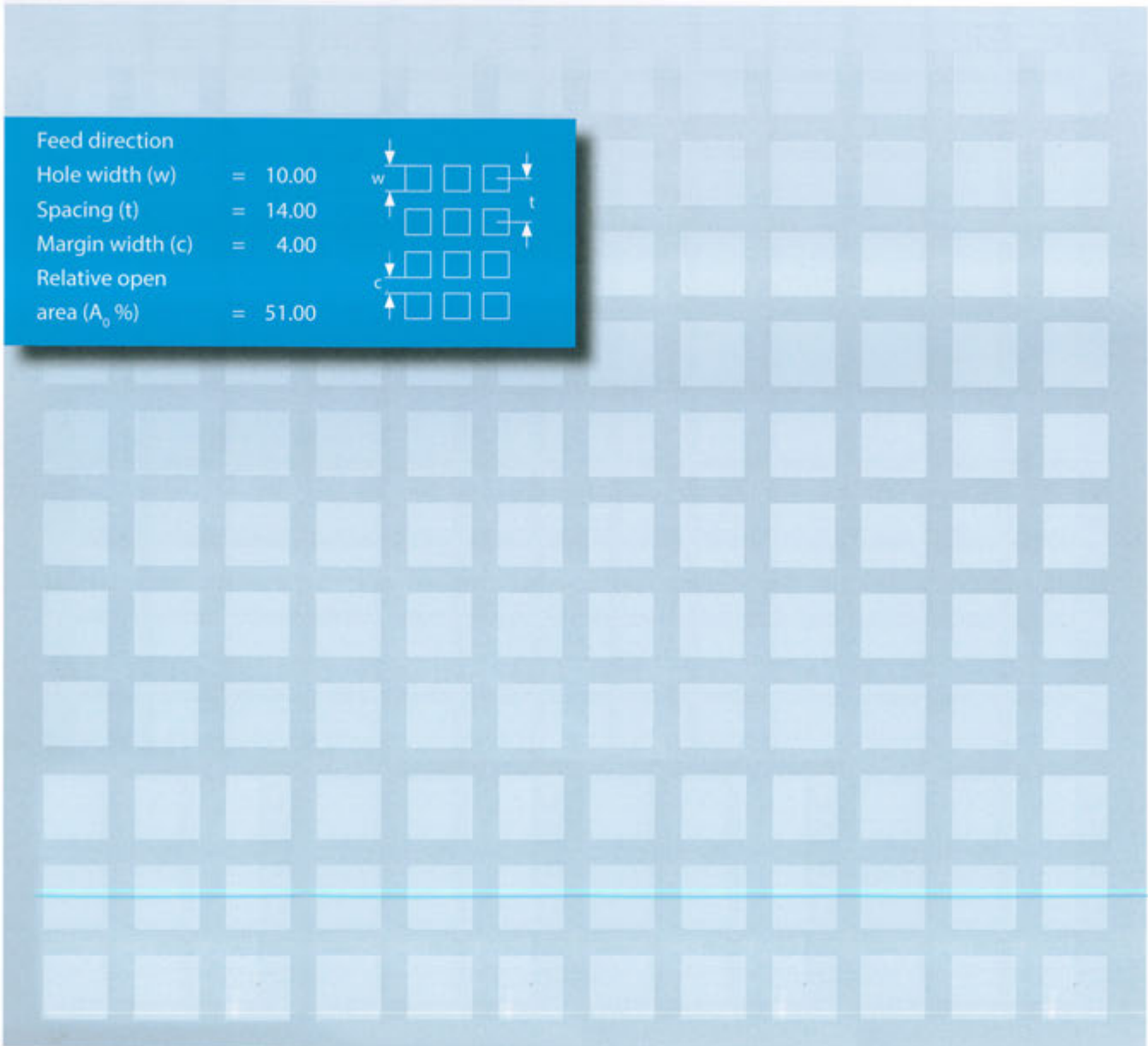
# Qg 10.00-14.00

II. Perforated sheets straight from stock

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*			■		■	■					■		■	■										
Steel			■		■	■					■		■	■										
Stainless steel 1.4301 (AISI 304)																								
Aluminium AL 99,5 (EN AW-1050A)																								
Aluminium ALMG3 (EN AW-5754)																								

\* hot-dip galvanised material

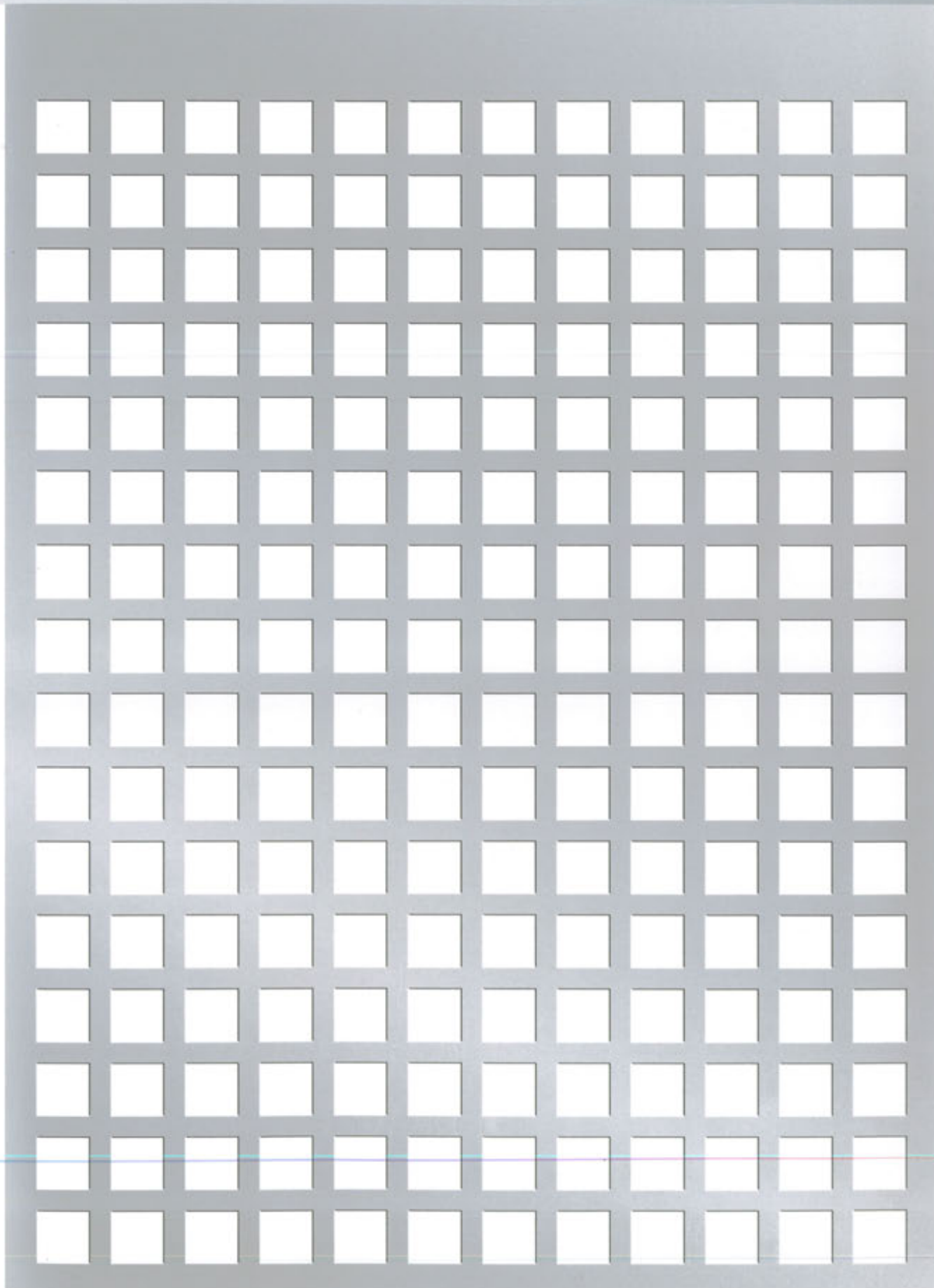
Feed direction		
Hole width (w)	= 10.00	
Spacing (t)	= 14.00	
Margin width (c)	= 4.00	
Relative open area (A <sub>0</sub> %)	= 51.00	



Qg 10.00-14.00



1:1 scale



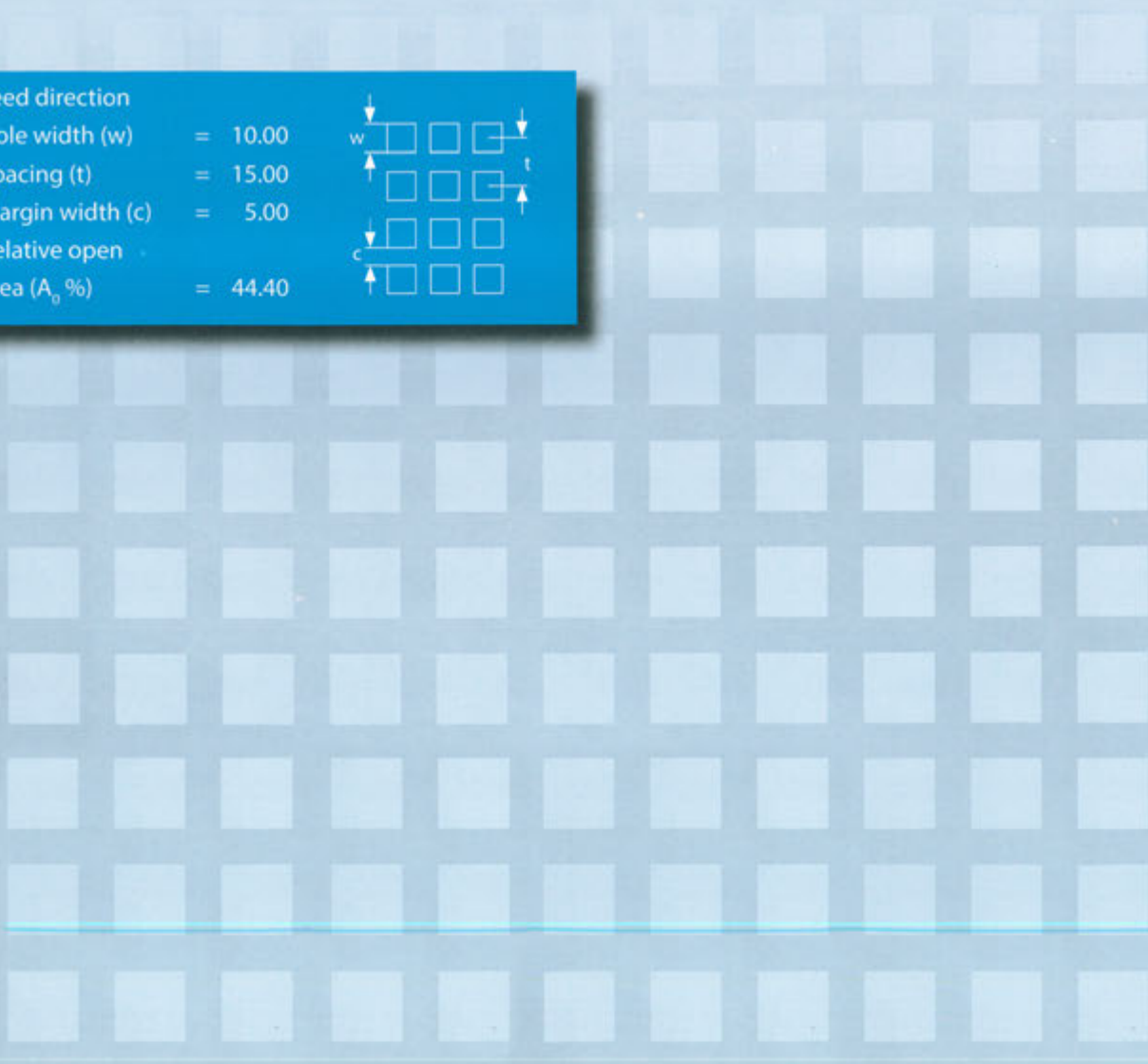
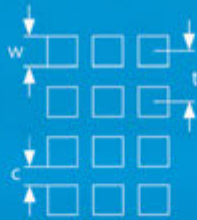
II. Perforated sheets straight from stock

# Qg 10.00-15.00

Material	Small format 1000 x 2000 mm								Medium format 1250 x 2500 mm								Large format 1500 x 3000 mm							
	Thickness in mm								Thickness in mm								Thickness in mm							
	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Steel, hot-dip galvanised*			■		■	■					■		■	■										
Steel			■		■	■					■		■	■										
Stainless steel 1.4301 (AISI 304)																								
Aluminium AL 99,5 (EN AW-1050A)																								
Aluminium ALMG3 (EN AW-5754)																								

\* hot-dip galvanised material

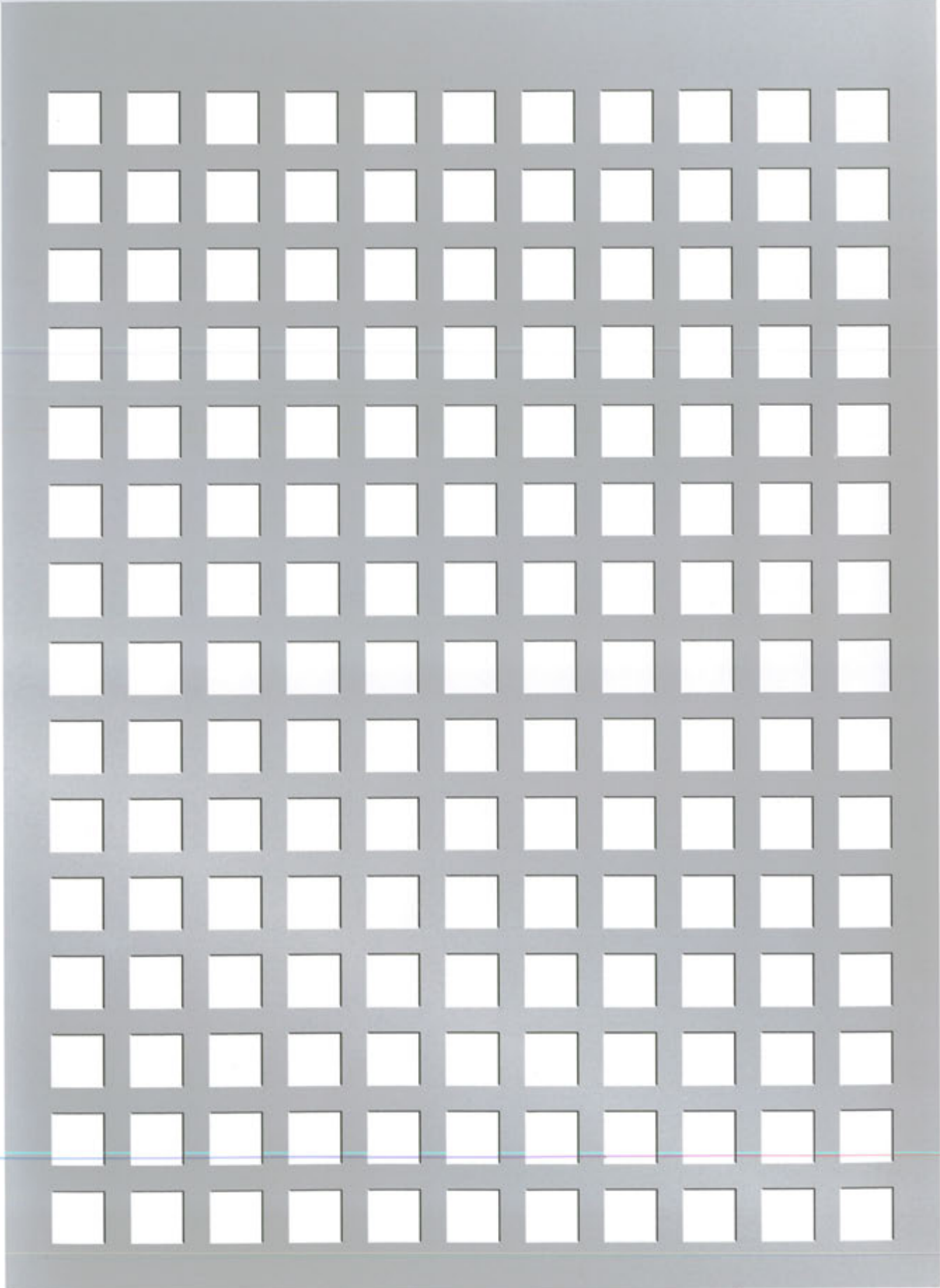
- Feed direction
- Hole width (w) = 10.00
- Spacing (t) = 15.00
- Margin width (c) = 5.00
- Relative open area ( $A_0$  %) = 44.40



II. Perforated sheets straight from stock

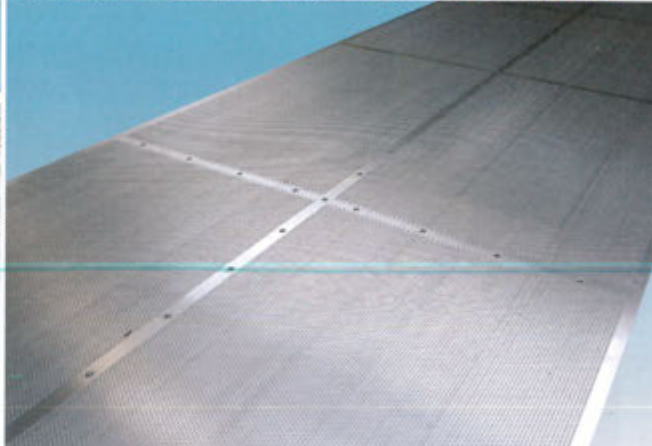
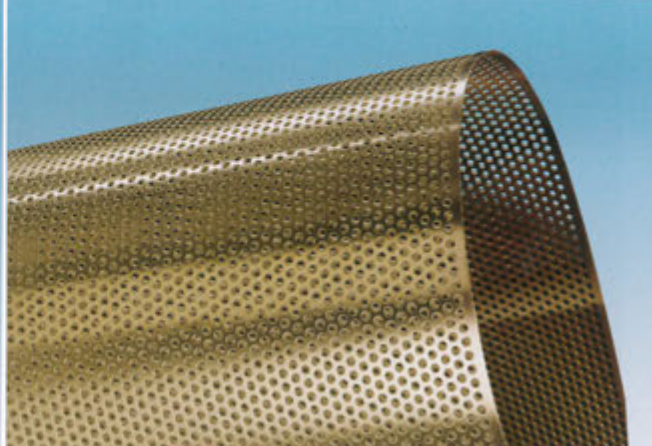
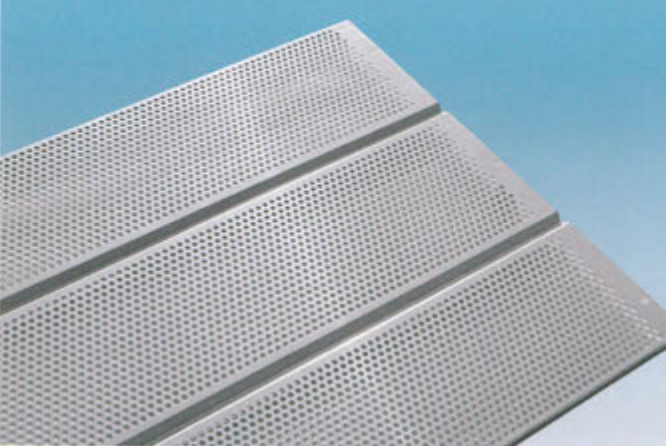
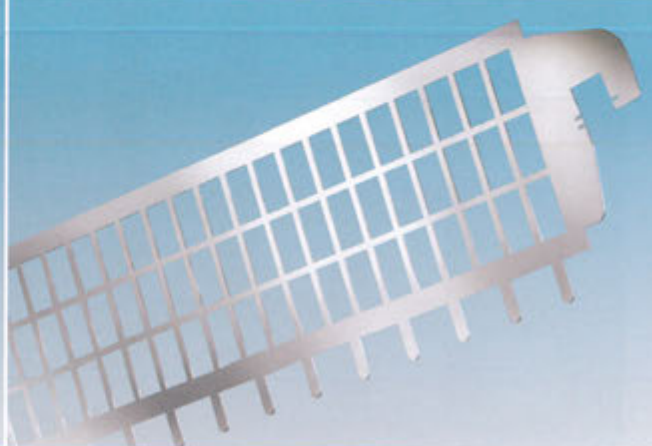
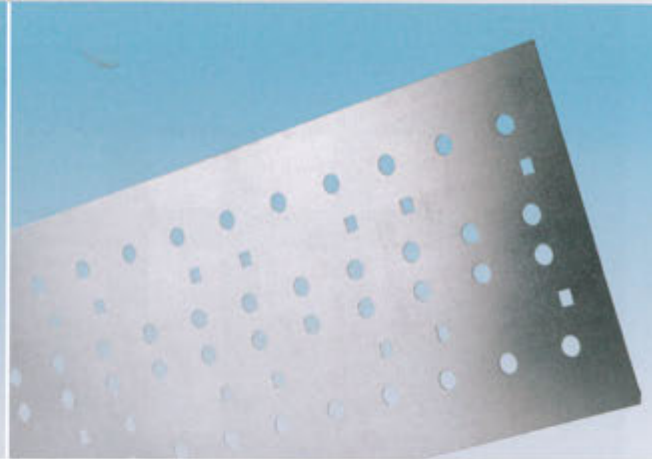
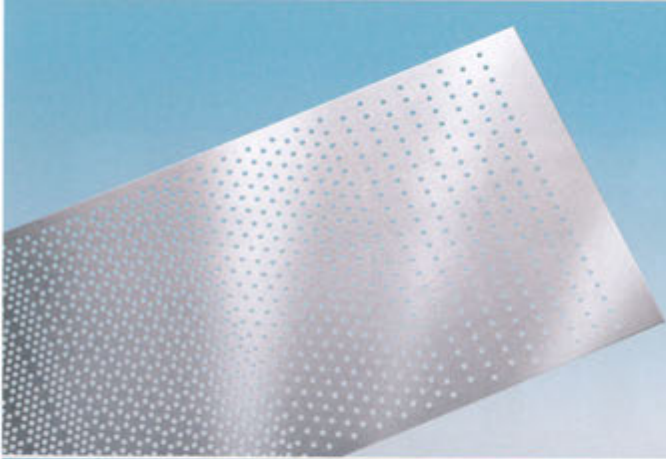


1:1 scale



II. Perforated sheets straight from stock

III. Machining service



# Great variety in design and machining

With our state-of-the-art equipment and qualified staff, we can produce individually machined perforated metal solutions for you. The delivered parts can be integrated directly into your work flow and so contribute to the high quality of the finished products.

Through the application of innovative ideas, we also create new possibilities for product design and consequently a higher degree of individuality. We implement your specifications precisely and efficiently.



## Our services

- Punching
- Laser cutting
- Notching
- Bending
- De-greasing
- Powder coating
- Anodising

Further machining services available on request



Flatness



Competent consulting



Highly efficient

## Your benefits

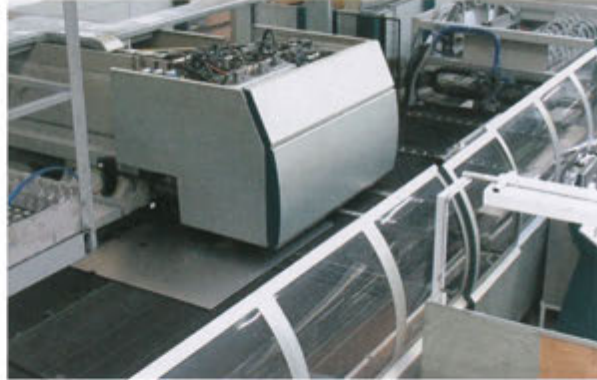
- You can save space for value-creating activities
- We can realise your requirements reliably and efficiently
- You receive high-quality, machined perforated metal solutions from a single source





# High-performance machines and production equipment

For manufacturing, Alfahd Steel operates freely programmable CNC lines as well as using well-conceived tooling concepts with sophisticated follow-on composite tools. Our flexible manufacturing concept enables even the most complex customer demands to be realized. Qualification and development of our employees is something we promote permanently. **To guarantee the quality of your finished products, we constantly invest in our production lines for steel, aluminium and stainless steel.**

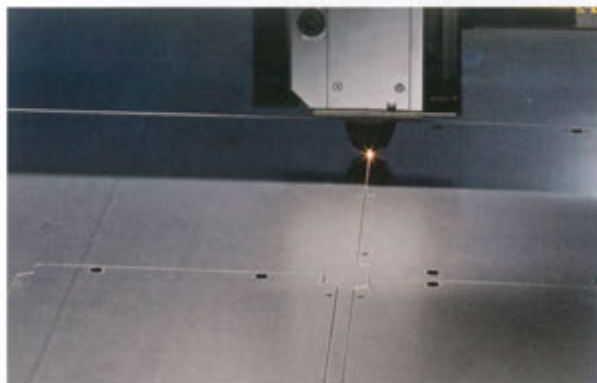


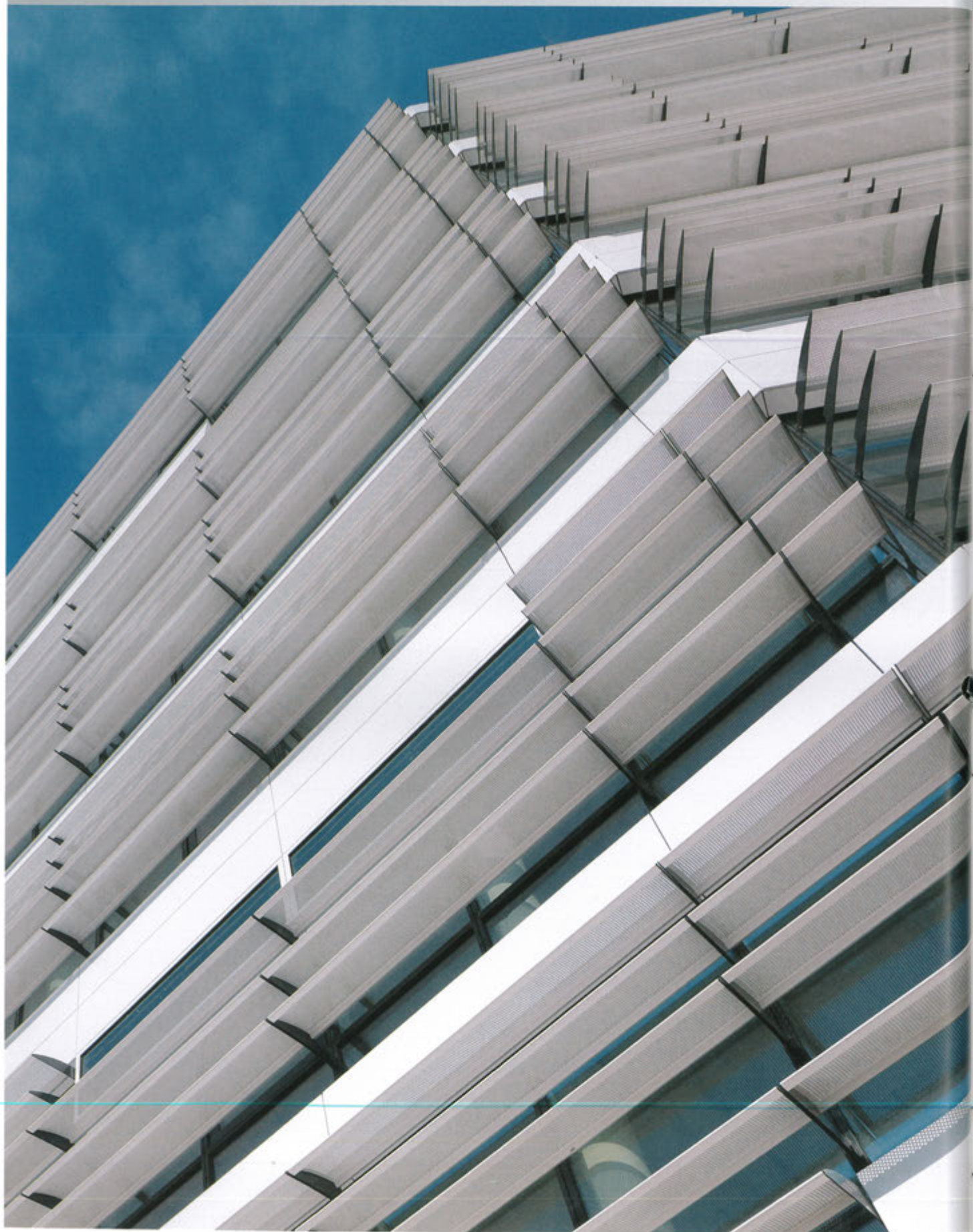
## Our manufacturing equipment and production processes

- The latest CNC punching technology
- Modern CNC bending lines
- Combined CNC punching/bending machines (also suitable for excess lengths)
- Diverse mechanical and hydraulic presses
- Various manual and automatic welding processes (MIG/MAG, WIG, etc.)
- Automated stud welding
- Joining techniques (clinching, riveting, gluing)
- Powder coating

## Quality

We set a high value to quality assurance in all processes, from material procurement to production. Our company is certified in accordance with DIN EN ISO 9001:2008.





# Design & Function – Tailor-made solutions in perforated metal

Whether a subtle backdrop or glaring eye-catcher, modern architecture is difficult to imagine without perforated metal sheets. Increasing numbers of property owners and architects trust in this extraordinarily versatile and exciting design element.

Wherever you look, perforated metal sheets can be used almost universally, whether as façade cladding, sun protection and screens, ceiling and wall panelling, in trade fair stands or shop fittings or in furniture design.

Are you looking for a fast and reliable partner who can provide customized perforated metal design exactly to your specifications? Then take the benefits from our longstanding project experience and take advantage of our own development department and in-house machine tool construction!

Alfahd Steel Perforated Metal develops perforated sheets tailored precisely to your specific requirements. In top quality – individual and fast.

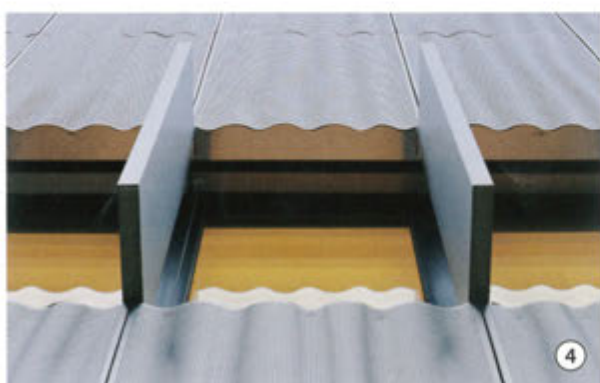
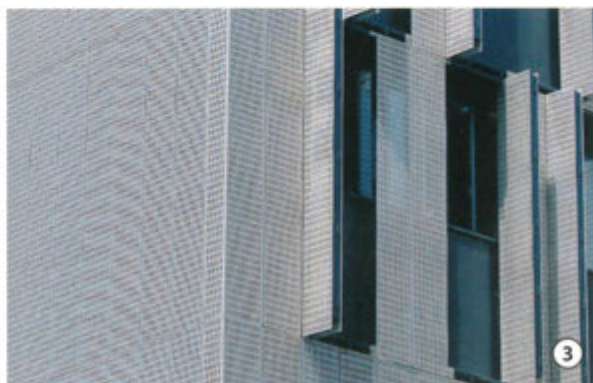




# Façade cladding

The interplay of design-orientated transparency and strength is what has increasingly made perforated sheets from Alfahd Steel a major stylistic element in modern architecture.

Through their own particular aesthetic, perforated sheets attract attention and can represent either the dominant feature or, at the same time, a more discreet expression of form and shape. The formability and great processing potential of aluminium and steel opens up an almost unlimited range of application possibilities.



- ① Façade panelling
- ② Multi-storey car park façade
- ③ ④ ⑤ Façade panelling



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# Sun protection

Perforated metal sheets can cover an incredibly wide range of functions, such as providing rooms with air-conditioning and shade. As innovative sun protection screens or translucent panelling, they are an ideal solution for uniting function and design.

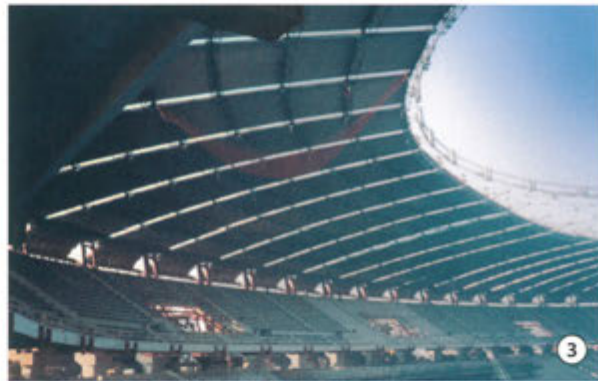






# Noise reduction

The sound absorbing effect they provide, make perforated sheets the ideal material for noise reduction. Adjustable lamellas enable sound protection to be adapted to any given conditions. Noise protection walls are highly effective in reducing traffic noise and tailor-made roof systems can prevent unwanted acoustic interference.



- ① Noise barriers
- ② Sound protection lamellas
- ③ Acoustic roofing
- ④ Noise protection walls

#### IV. Application examples



1

# Balustrade screening panels

Whether as a discreet design detail or to accentuate an overall impression, perforated sheets, as balcony, stairway and balustrade screens or radiator panels, can offer weather resistant protection, while fulfilling individual design aspirations.



- ① Balustrade screens
- ② Balustrade cladding
- ③ - ⑤ Balcony screens / panelling



# Ceiling and wall panelling

Perforated sheets lend themselves to a modern, timeless kind of design, which highlights objects by giving them a clear, linear definition.

We supply perforated metal sheets in various materials and with individual perforation patterns designed to match each specific application.

These different perforation patterns can then create an aesthetic effect that is subtle and reserved or blatant and direct.



- ① - ③ Ceiling panelling
- ④ Wall panelling

#### IV. Application examples



# Functional interior design

Room climate, acoustics and ambience – designing rooms combining a pleasant atmosphere with functional optimization is a real challenge.

Perforated sheets provide room designers and interior architects with a creative and stylistic medium that can adapt to spatial and design structures and, through their countless perforation patterns, can also create impressive design highlights.

On top of this, perforated sheets are perfectly suited to a range of technical roles in the fields of ventilation, lighting, or sound absorption.



- ① Designer counter screens
- ② Room dividers
- ③ Column and ceiling panelling



#### IV. Application examples



IV. Application examples

①

# Climate control and ventilation systems

Because perforated metal sheets are, by their very nature, permeable, they are ideal for use in rooms requiring climate control and ventilation. The great advantage is that they perform this function almost invisibly, as the perforated sheets are primarily perceived as a design element.

This enhances the room's appearance, giving it a distinct peace and clarity of design. The variable size and positioning of the perforations as well as the shaping of the sheets themselves allow the perfect implementation of functional, aesthetic solutions.



- ① Climate control ceiling panelling
- ② Heating/cooling sails
- ③ Climate control ceiling panels
- ④ - ⑤ Climate control ceiling panelling

IV. Application examples



IV. Application examples

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# Displays and retail fittings

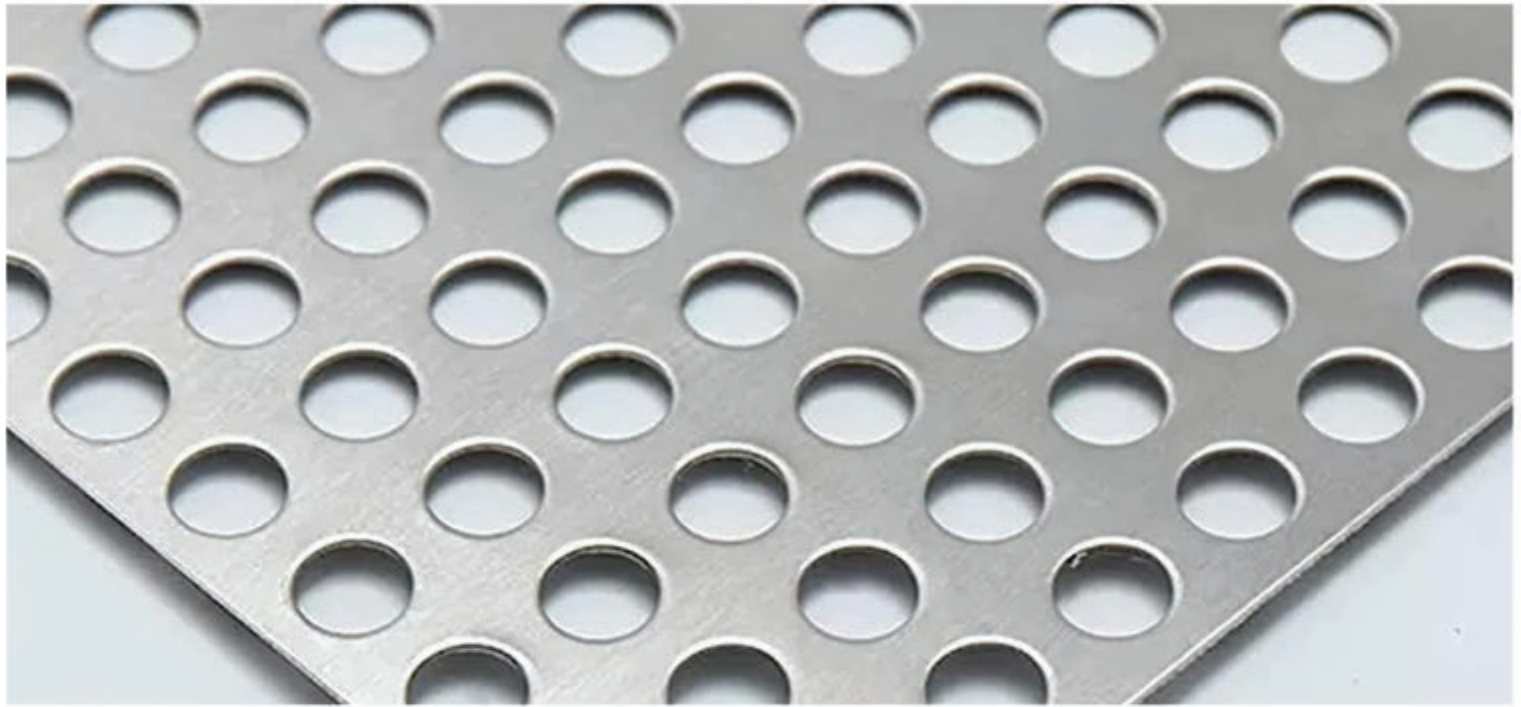
An impressive appearance combined with the robustness to withstand the strains of intensive daily use are the outstanding hallmarks of perforated metal sheets, especially in the construction of exhibition displays and shop fittings.

The materiality and surface quality guarantees a particularly high-class appearance, while elements such as perforated metal display tables or shelving units are extremely robust and easy to keep clean.

The variety of the sheets' perforation patterns and shaping possibilities give rise to a vast potential of individual styling and design.



- ① Seating units
- ② Display tables
- ③ Catalogue stands
- ④ Shelf units
- ⑤ Display cabinets



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