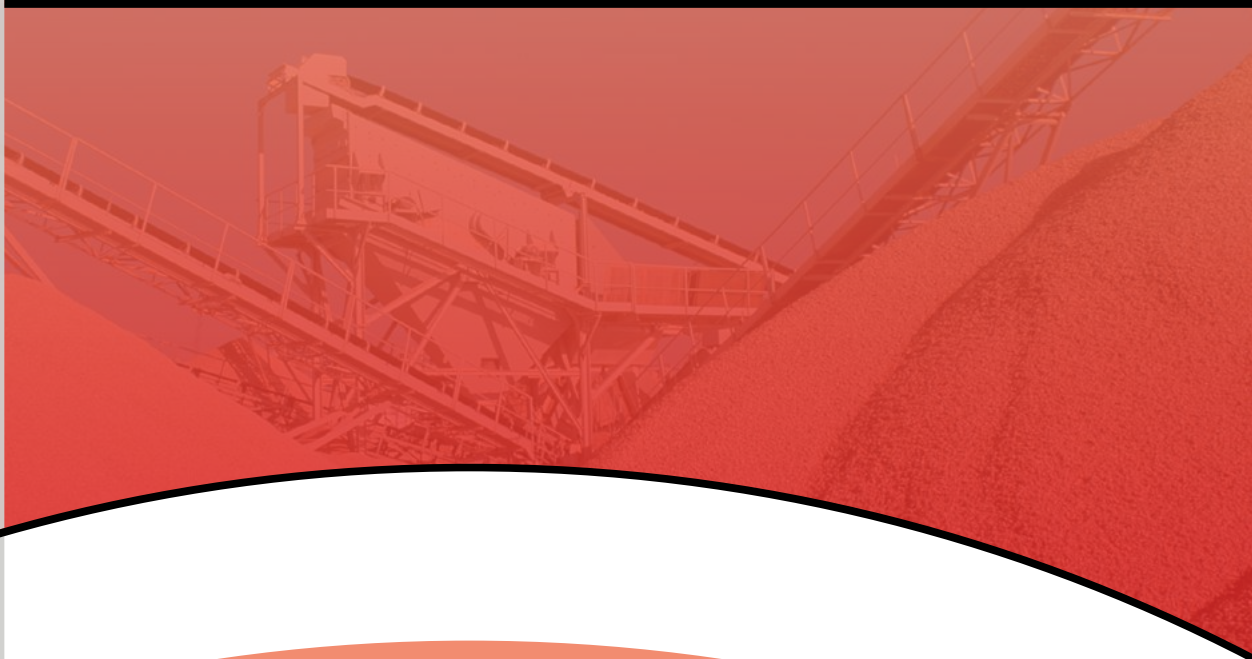
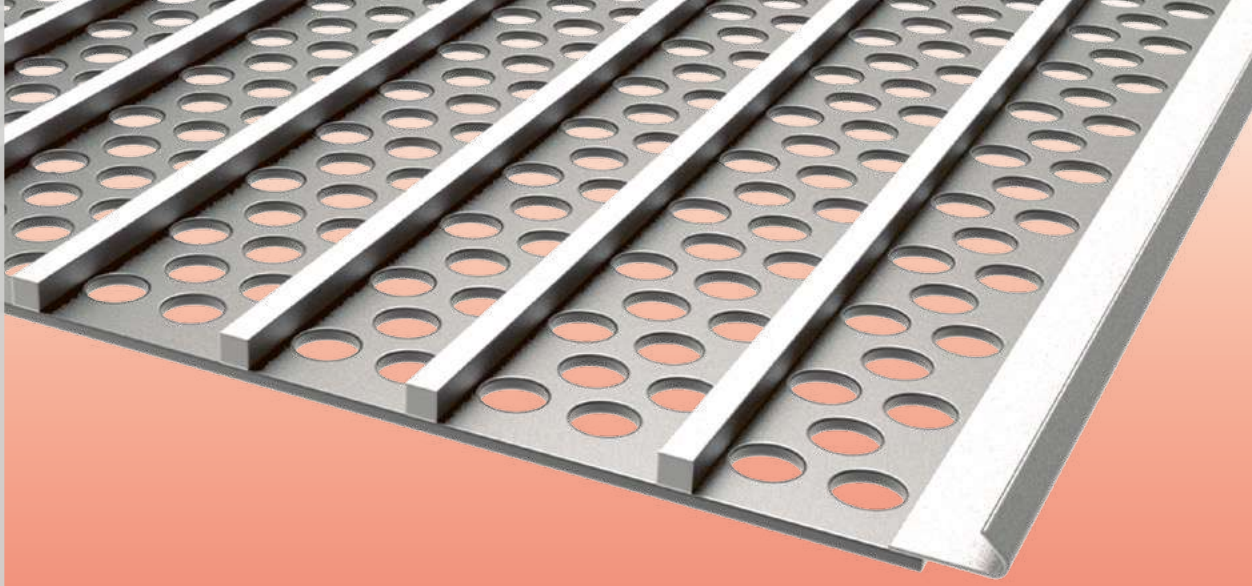


# Perforated Steel Plates



Screening  
Media

8

 **NUBA**  
Screening Media

 **NUBA**  
Technical Advice



## Perforated Steel Plates

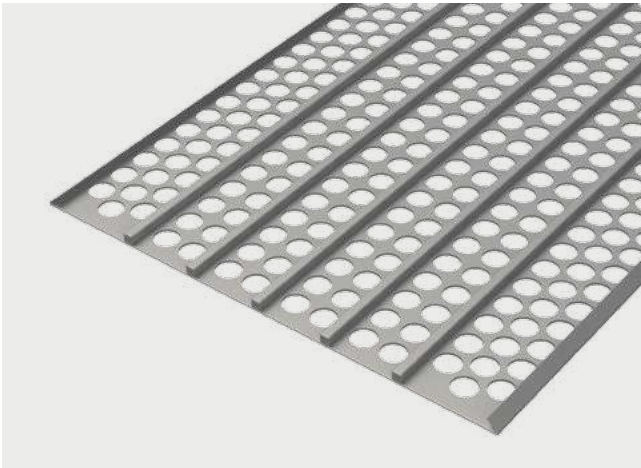
Due to their resistance to abrasion and impact, they are used mainly for pre-screening, fitted on the top deck of the screens with side tension plates or bolted down.

They are manufactured with round, square, slotted or hexagonal apertures, in linear or staggered distribution.

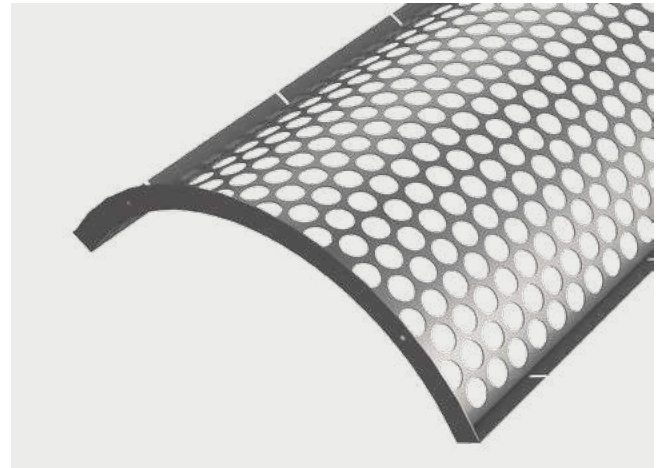
They can be supplied reinforced with welded square rider bars to support high impact or heavy loads or curved to be used in screening Trommels.

### Manufactured under the following standards:

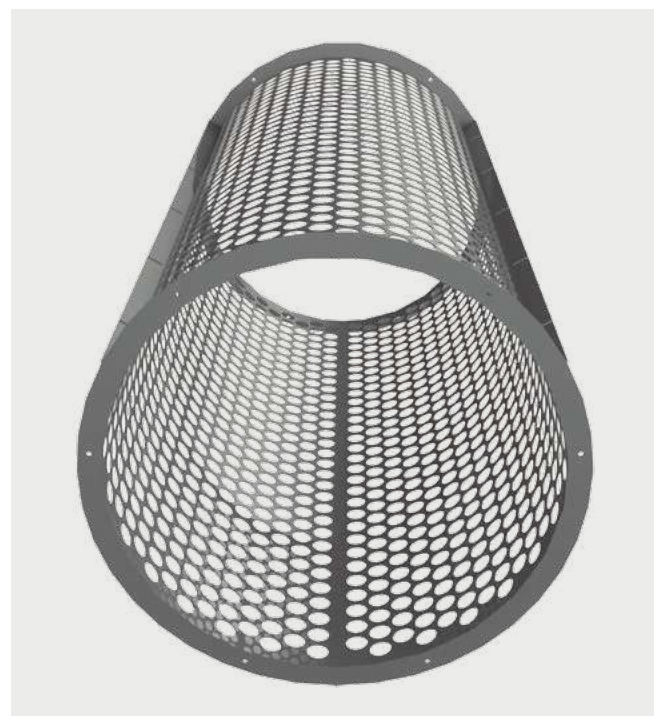
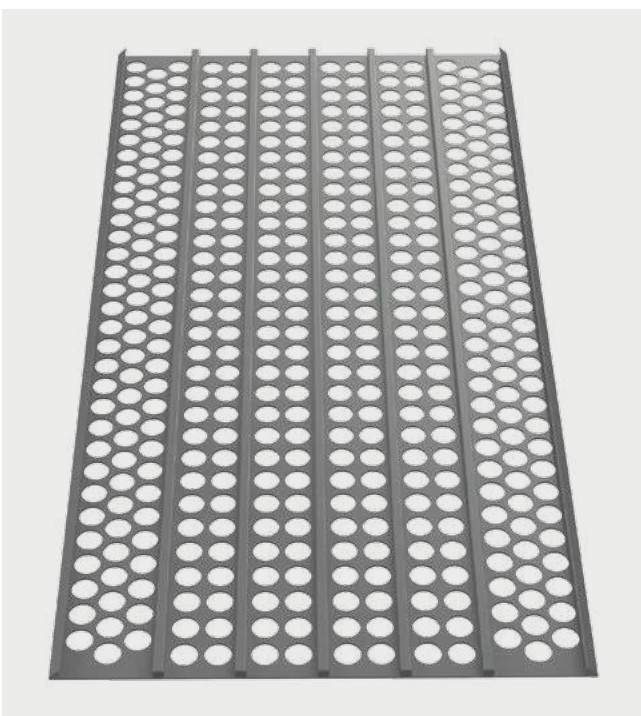
- Carbon Steel:  
S235 JR and S275 JR (EN-10025)
- Stainless Steel:  
AISI 304 and AISI 316 (EN 10088)
- Wear-resistant Steel:  
HB 400 – 600



Perforated Steel Plates with Rider Bars



Curved Perforated Steel Plates



NUBA Screening Media offers perforated sheets in a wide variety of materials. The most common materials we manufacture are listed below:

## Perforated Steel Plates Carbon Steel

### Characteristics

Perforated Steel Plates (hot rolled and pickled) are the most consumed. They are characterized by their ease of folding and drawing. For direct cold forming.



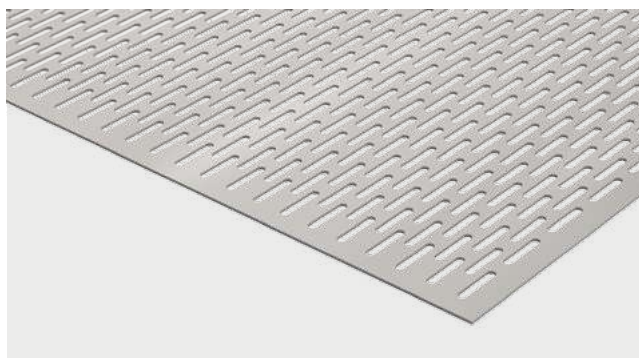
Steel Grade	Standard	Equivalence Nomenclature	C (%)	Mn (%)	P (%)	S (%)	Yield strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation at break (%)
<b>Hot rolled and pickled steel</b>									
<b>S235 JR</b>	EN-10025	Stw 37	≤ 0.17	≤ 1.40	≤ 0.045	≤ 0.045	≥ 235	360-510	≥ 27
<b>S275 JR</b>	EN-10025	Stw 44	≤ 0.21	≤ 1.60	≤ 0.045	≤ 0.045	≥ 275	430-580	≥ 27

## Perforated Steel Plates Stainless Steel

### Characteristics

The AISI 304 sheets have excellent mechanical properties and high resistance to corrosion.

AISI 316 steel sheets are characterized by their chemical composition; they contain molybdenum, which gives them greater resistance to more violent corrosive agents.



Steel Grade	Equivalence	Standard	C (%)	Si (%)	Mn (%)	P max (%)	S max (%)	Cr (%)	Ni (%)	Mo (%)
<b>AISI 304</b>	EN 1.4301	EN 10088	≤ 0.07	≤ 1.00	≤ 2.00	0.045	0.030	17-19.5	8-10.5	-
<b>AISI 316</b>	EN 1.4401	EN 10088	≤ 0.07	≤ 1.00	≤ 2.00	0.045	0.030	16.5-18.5	10-13	2-2.50

## Perforated Steel Plates Wear Resistant Steel

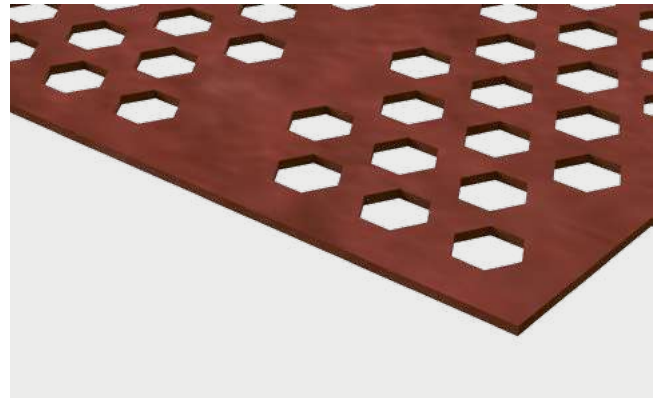
### Characteristics

We custom-make Perforated Steel Plate Screens using Wear Resistant Steel, made to withstand the toughest working conditions. They have outstanding properties in hardness, high resistance and resilience.

HB 400 - 450 steels have high elasticity and abrasion resistance but still offer great workability for bending, machining and welding.

HB 500 steels withstand intense wear and tear and are suitable for severe erosion of hard minerals and other abrasive materials.

The quality steels HB 550 combines the best properties of HB 500 and 600.

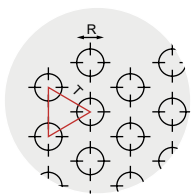


HB 600 steels have the highest hardness in anti-wear steel on the market, being a product prepared to withstand an extreme abrasion index.

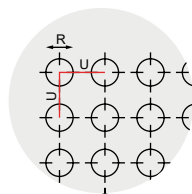
Perforations are done by water jet and laser technology.

Steel Grade	Thickness	C max (%)	Mn max (%)	P max (%)	S max (%)	Yield strength (MPa)	Tensile strength (MPa)	Hardness (HB)
<b>HB-400</b>	3-20	0.15	1.6	0.025	0.010	1250	1000	370-430
<b>HB-450</b>	3-20	0.21	1.6	0.025	0.010	1400	1200	425-475
<b>HB-500</b>	4-30	0.29	1.6	0.025	0.010	1600	1250	470-530
<b>HB-550</b>	10-50	0.37	1.3	0.020	0.010	-	-	525-575
<b>HB-600</b>	8-30	0.45	1.0	0.015	0.010	-	-	570-640

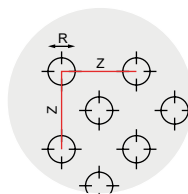
## Screening Area Calculation



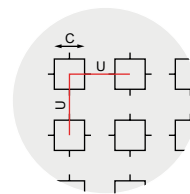
$$SA = 0,906 \times (R/T)^2$$



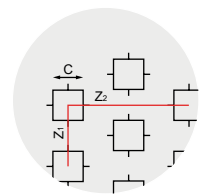
$$SA = 0,785 \times (R/U)^2$$



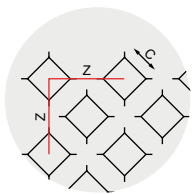
$$SA = 1,57 \times (R/Z)^2$$



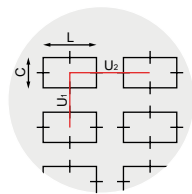
$$SA = (C/U)^2$$



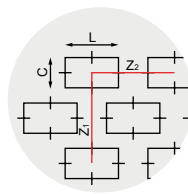
$$SA = 2C^2 \times Z_1 Z_2$$



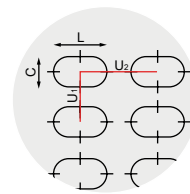
$$SA = 2 \times \left(\frac{CD}{Z}\right)^2$$



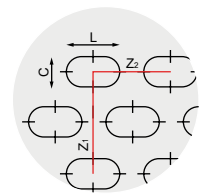
$$SA = 2 \frac{C \times L}{U_1 \times U_2}$$



$$SA = 2 \frac{C \times L}{Z_1 \times Z_2}$$



$$SA = 2 \frac{C \times L - 0,215 C^2}{U_1 \times U_2}$$



$$SA = 2 \frac{C \times L - 0,43 C^2}{Z_1 \times Z_2}$$

# Types of apertures

## Round Perforations

- Perforations: From 0,5 mm to 120 mm.
- Thickness: From 0,5 mm to 20 mm  
*(according to perforation).*
- Dimensions: Plates up to 2.000 mm wide  
*(according to perforation).*  
  
Rolled to 1.500 mm wide  
*(according to perforation).*

Please contact us for other available perforations.

R 1,5 T 3



R 3 T 5



R 5 T 7



R 10 T 14



## Perforated plates: Available standard dimensions 2.000 x 1.000 mm

R	T	%	Thickness																	
			0,5	0,8	1	1,5	2	2,5	3	4	5	6	8	10						
0,5	1,25	14,5	•																	
0,5	1,5	10	•																	
0,8	1,60	22,5	•																	
0,8	1,75	19	•																	
0,8	2	26	•	•																
1	2	23	•	•	•															
1,2	2,25	26			•															
1,5	3	23	•	•	•	•														
1,8	3	33	•	•	•	•														
2	3,5	30	•	•	▲	•	•													
2	4	23				•	•													
2,5	4	35	•	•	•	•	•													
2,5	5	23					•	•												
3	5	33	•	▲	▲	■	▲	■	▲	■										
3	6	23																		
3,5	5	44	•	•	•	•	•													
3,5	6	31					•													
4	6	40	•	•	▲	▲	■													
4	7	30					▲	■												
5	7	46	•	•	▲	▲	■	■												
5	8	35			▲	▲	■	■	▲	■										
6	8,5	44	•	•	▲	▲	■	■												
6	9	40			•	•														
6	10	33					▲	■												
7	10	44			•	•														
7	11	37					•													
8	11	48	•	▲	▲	■	▲	■												
8	12	40					▲	■	▲	■										
8	13	34																		•
8	15	26																		•
8	Aboc.	4,5						▲	■											
9	13	45	•		•	•														
9	14	37					•													
10	14	46	•	•	▲	▲	■	■												
10	15	40				•	▲	■												
10	18	28							▲	■										•
10	18	28																		•
12	16	51			▲	▲	■													
12	17	45					▲	■												
12	20	32																		•
12	20	32																		•
14	19	49			•	•	•													
14	20	44																		•
14	20	44																		•
15	18	63			•	▲	■													
15	22	42					▲	■												
15	24	35																		•
15	24	35																		•
15	Aboc.	22,5						▲	■											
16	20	58			•	•	•													
16	24	40																		•
16	24	40																		•
18	22,5	56			•	•														
18	25	47					•													
18	27	40																		•
20	25	58			•	▲	■													•
20	27	49						■												
20	30	40																		•
20	30	40																		•
22	28	56					•													•
25	34	49			•	•	•													•
28	35	58					•													•
28	35	58					•													•
30	37	60			•	•	•													•
30	40	51																		•
35	46	52					•													•
40	50	58					•													•
45	60	51																		•
50	62	59					•													•
60	75	58																		•
70	75	58																		•
80	96	62																		•
90	112	58																		•
100	124	58																		•

• Mild Steel 2.000 x 1.000      ■ Mild Steel 2.500 x 1.250      ▲ Galvanized steel 2.000 x 1.000

## Round Perforations for milling

- Perforations: From 2 mm to 8 mm.
- Thickness: From 0,8 mm to 3 mm  
*(according to perforation).*
- Dimensions: Plates up to 1.500 mm wide  
*(according to perforation).*  
  
Rolled to 1.500 mm wide  
*(according to perforation).*

Please contact us for other available perforations.

**R 2,5 T 3,5**



**R 3 T 4**



### Perforated plates: Available standard dimensions 2.000 x 1.000 mm

R	T	%	Thickness				
			1	1,5	2	2,5	3
2	3	40	•	•	•		
2,5	3,5	46	•	•	•	•	
3	4	51	•	•	•	•	•
3,5	4,5	55		•	•	•	•
4	5,5	48		•	•	•	•
4,5	6	51		•	•	•	•
5	6,5	54		•	•	•	•
6	7,5	58			•	•	•
7	10	44					•
8	11	48					•

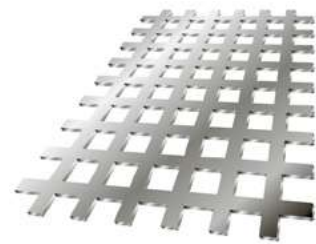
Mild steel plates

## Square Perforations

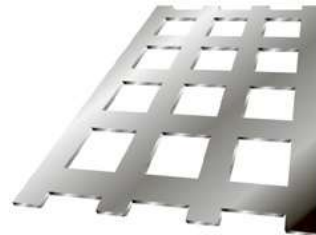
- Perforations: From 3 mm to 120 mm.
- Thickness: From 0,5 mm to 5 mm  
*(according to perforation).*
- Dimensions: Plates up to 2.000 mm wide  
*(according to perforation).*  
  
Rolled to 1.500 mm wide  
*(according to perforation).*

Please contact us for other available perforations.

**C5 U7,5**



**C10 U15**



### Perforated plates: Available standard dimensions 2.000 x 1.000 mm

∅ C	U	%	Thickness				
			0,8	1	1,5	2	3
3	5	36		•	•		
5	7,5	44	•	•	•		
5	8	39		•	•	•	
8	11	53	•	•	•	•	
10	12	69		•	•		
10	13	59		•	•	•	
10	15	44		•	•	•	•
10	20	25		•	•	•	•
15	20	56		•	•	•	•
15	30	25			•	•	•
20	25	64		•	•	•	•
20	40	25		•	•	•	•
22	44	25		•	•	•	•
25	50	25			•	•	•
30	35	73		•	•	•	•
30	60	25		•	•	•	•
40	50	64			•	•	•
40	80	25			•	•	•
50	100	25			•	•	•

Mild steel plates

## Slotted Perforations

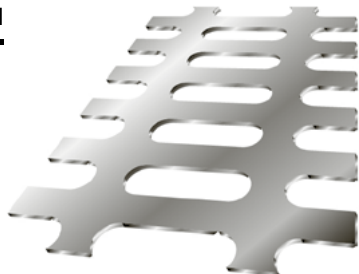
- Perforations: From 1 x 20 mm to 10 x 40 mm.
- Thickness: From 0,5 mm to 8 mm  
*(according to perforation).*
- Dimensions: Plates up to 2.000 mm wide  
*(according to perforation).*  
  
Rolled to 1.500 mm wide  
*(according to perforation).*

Please contact us for other available perforations.

**LR4 x 20 ZI**



**LR3 x 20 UII**



## Perforated plates: Available standard dimensions 2.000 x 1.000 mm

LR	Distance	Staggering Arrangement	%	Thickness							
				1	1,5	2	3	4	5	6	
1,5 x 20	4 x 26	U II	28,3		•						
2,5 x 20	5 x 26	U II	37,4	•							
3 x 20	6 x 26	U II	37,2		•	•					
3 x 20	14 x 26	Z I	32			•					
4 x 20	16 x 25	Z II	38,2	•							
4 x 20	16 x 25	Z I	38,2		•	•	•				
4 x 20	8 x 25	U II	38,2	•	•						
5 x 20	10 x 25	U II	37,8		•	•					
5 x 20	20 x 25	Z II	37,8		•						
5 x 20	20 x 25	Z I	37,8	•	•	•	•				
6 x 25	22 x 31	Z I	39,4								
6 x 30	26 x 37	Z I	33		•						
7 x 20	12 x 26,5	U II	40,7		•						
8 x 40	13 x 47,5	U II	49,5		•	•					
8 x 40	26 x 47,5	Z II	49,5			•					
10 x 40	20 x 50	U II	34,85			•					

Mild Steel Plates



## Stainless steel plates

- Perforations: From 0,4 mm to 120 mm.
- Thickness: From 0,4 mm to 12 mm  
*(according to perforation).*
- Dimensions: Plates up to 2.000 mm wide  
*(according to perforation).*  
  
Rolled to 1.500 mm wide  
*(according to perforation).*

Please contact us for other available perforations.

R 1 T 2,2



R 2 T 3,5



R 4 T 6



## Perforated plates: Available standard dimensions 2.000 x 1.000 mm

R	T	%	Thickness												
			0,4	0,5	0,6	0,8	1	1,5	2	3	4				
0,4	1,5	6	•												
0,5	1,5	10	•	•											
0,6	1,5	15	•												
0,8	1,75	19		•	•										
0,8	2	15					•								
1	2	23						•							
1	2,2	19		•			•								
1,2	2,25	26					•	•							
1,5	3	23		•			•	•	•						
2	3,5	30						•	•	•					
2	4	23									•				
2,5	4	35						•	•	•					
2,5	5	23							•		•	•			
3	5	33						•	•	•	•				
3	6	23											•		
3	6	6												•	
3,5	6							•			•				
4	6	40		•				•	•	•					
4	7	30									•	•		•	
5	7	46						•	•	•					
5	8	35									•	•	•	•	
6	8,5	45						•	•	•					
6	10	33									•	•		•	
7	10							•							
8	11	48						•	•	•					
8	12	40						•			•	•		•	
8	emb. 47,5										•				
10	14	46						•	•	•					
10	15	40									•	•		•	
12	16	51						•	•	•					
12	17	45									•	•		•	
15	18	63						•	•	•					
15	22	42									•	•		•	
15	emb. 30										•				
20	27	50													•

• AISI 304  
2.000 x 1.000

▪ AISI 316 L  
2.500 x 1.250

