

Packaging Steel

# Product Range Packaging Steel



thyssenkrupp

# rasselstein<sup>®</sup> — for those who can!

rasselstein<sup>®</sup> packaging steel stands for premium quality and exceptional service. We supply and support our customers from the world's largest production site for packaging steel. To ensure that you benefit from the best results at all times.

# Index

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02

Efficient. Innovative.  
Sustainable.

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04

Packaging steel

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06

About our packaging steel

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08

Product range

08	Grades
10	Tinplate
12	Electrolytic chromium coated, Electrolytic zinc coated, Blackplate, Oiling
13	Finishes, Organic coating
14	Dimensions, Shipping weights and transport dimensions
15	Narrow strip coated, Blackplate strip uncoated, Oiling, Finishes, Dimensions

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Legend:

- On inquiry
- 5 On inquiry

Information regarding  
standards refers to the latest  
version as of the printing date

# Efficient. Innovative. Sustainable.

thyssenkrupp manufactures the packaging steel of the future for you – efficient, highly optimized, and sustainable. rasselstein® packaging steel stands for continuously evolving material grades in premium quality.

We are delighted to support you in increasing the efficiency of your processes and products. Day by day we work on developing our steel grades still further, so they will meet your requirements today and tomorrow.


Among our packaging steels there is sure to be the optimal specification for your application. Together with you we create the solutions to perfectly fit your own individual needs. Simply contact us to find out more!





# Packaging steel

Thin, cold-rolled steel plated with tin, special chromium or left bare and is used as an efficient packaging material.



electrolytic  
chromium coated



tinned

blackplate

#### Your contacts



##### **Packaging Steel**

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# About our packaging steel

At the world's largest production site for packaging steel, located in Andernach, thyssenkrupp produces tin coated or electrolytic chromium coated steel in thicknesses of 0.100 to 0.499 mm – either with or without organic coatings (lacquer, polymer). As one of the Europe's biggest packaging steel manufacturers, we serve around 400 customers in 80 countries.

More than 95 percent of the material is used in the packaging sector, for example to package food, beverages or aerosols. But this versatile material is also used in non-packaging applications, in areas such as the automotive and electronics industries.

As a "permanent" material, our packaging steel stands for sustainability. It retains its properties without any loss in quality no matter how many times it is re-used. thyssenkrupp assumes responsibility for the future – with resource-conserving processes and a closed material loop for steel.



Andernach

Production site



Highly efficient

0.100 –  
0.499  
mm thickness



High stability







## Packaging steel expertise

In Andernach, our Packaging Steel Business Unit operates the world's largest production facility for packaging steel and develops intelligent solutions on how to make tinplate even more efficient, thinner, stable and formable.

## Grades

	Standard designation	Yield strength [MPa]
<b>EN 10 202</b>		
<i>Steel grade designation</i>		
rasselstein® TS 230	TS 230	230 +/- 50
rasselstein® TS 245	TS 245	245 +/- 50
rasselstein® TS 260	TS 260	260 +/- 50
rasselstein® TS 275	TS 275	275 +/- 50
rasselstein® TS 290	TS 290	290 +/- 50
rasselstein® TS 340	–	340 +/- 50
rasselstein® TS 480	–	480 +/- 50
rasselstein® TS 520	–	520 +/- 50
rasselstein® TS 550	TS 550	550 +/- 50
rasselstein® TH 330	–	330 +/- 50
rasselstein® TH 340	–	○
rasselstein® TH 415	TH 415	415 +/- 50
rasselstein® TH 435	TH 435	435 +/- 50
rasselstein® TH 450	–	450 +/- 50
rasselstein® TH 480	–	480 +/- 50
rasselstein® TH 520	TH 520	520 +/- 50
rasselstein® TH 550	TH 550	550 +/- 50
rasselstein® TH 580	TH 580	580 +/- 50
rasselstein® TH 620	–	620 +/- 50
rasselstein® TH 650	–	650 +/- 50
rasselstein® TH 700	–	700 +/- 50
	Lower yield stress $R_{eL}$ [MPa]	Minimum elongation at fracture [%]

## rasselstein® Solidflex

### *Steel grade designation*

rasselstein® Solidflex 600	600 +/- 50	5
rasselstein® Solidflex 620	620 +/- 50	5
rasselstein® Solidflex 650	650 +/- 50	5

Yield strength [MPa]                      Typical elongation [%]

### rasselstein® High Formability

#### Steel grade designation

rasselstein® High Formability 200	200 +/- 50	38
rasselstein® High Formability 230	230 +/- 50	35
rasselstein® High Formability 245	245 +/- 50	33

Standard designation

Nominal hardness [HR30TS]

Nominal tensile strength [MPa]

### AISI/ASTM 623

#### Steel grade designation

rasselstein® T 1	T 1	49 +/- 4	
rasselstein® T 2	T 2	53 +/- 4	
rasselstein® T 3	T 3	57 +/- 4	
rasselstein® T 4	T 4	61 +/- 4	
rasselstein® T 5	T 5	65 +/- 4	
rasselstein® DR 7	DR 7		480 +/- 50
rasselstein® DR 7.5	DR 7.5		520 +/- 50
rasselstein® DR 8	DR 8		550 +/- 50
rasselstein® DR 8.5	DR 8.5		580 +/- 50
rasselstein® DR 9	DR 9		620 +/- 50
rasselstein® DR 9.5	DR 9.5		660 +/- 50

## Tinplate

	[g/m <sup>2</sup> ] one-side	corresponds to [lb/bb] both-sides
<b>Coating weights for tin</b>		
<b>EN 10202</b>		
	1.00	0.089
	1.40	0.125
	2.00	0.179
	2.80	0.250
	4.00	0.357
	5.00	0.446
	5.60	0.500
	8.40	0.750
	11.20	1.000

## AISI/ASTM

	0.60	0.05
	1.10	0.10
	1.70	0.15
	2.20	0.20
	2.80	0.25
	3.90	0.35
	5.60	0.50
	8.40	0.75
	11.20	1.00

The above coating weights are available for equal or differential coating.  
Deviations in coating weights are possible in the range 1.00 to 11.20 g/m<sup>2</sup> (0.100 to 1.000 lb/bb).

One-side tin coatings possible in the range 0.50 to 5.60 g/m<sup>2</sup>.  
Marking for differential coatings in accordance with Euronorm, alternative markings by arrangement.

Other tin coatings on request.

	Code	Chromium coating [mg/m <sup>2</sup> ] per side	Titanium [mg/m <sup>2</sup> ] per side
<b>Passivation for tinned grades</b>			
Dip passivation	300	1–3	–
Electrochemical passivation	311	3,5–9	–
Electrochemical passivation	314 <sup>5</sup>	> 5	–
CFPA (Chrome-free Passivation Alternative)*	505/555	–	1 +/- 0,2

\* For qualification.

### Electrolytic chromium coated steel (ECCS/TFS), Electrolytic zinc coated steel, Blackplate

Average coating weight  
[mg/m<sup>2</sup>] per side

min.	max.
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#### Coating weights for ECCS/TFS

Chromium metal	50	140
Chromium oxide	7	35

Note: The total chromium is the sum of metallic chromium and chromium oxide.

Nominal coating weight  
[g/m<sup>2</sup>] per side

#### Special product: Electrolytic zinc coated steel

11 (1.5 µm)

#### Uncoated blackplate EN 10 205

### Oiling

	Tinplate [mg/m <sup>2</sup> ] per side	Chromium coated Steel [mg/m <sup>2</sup> ] per side	Uncoated Blackplate [mg/m <sup>2</sup> ] per side
DOS	4 +/- 2	4 +/- 2	–
ATBC	4 +/- 2	–	–
BSO	–	4 +/- 2	–
Anticorit	–	–	min. 300 +/- 100

Other oiling weights on request.

## Finishes

	Roughness [ $\mu\text{m}$ ]
<b>Surface finish</b>	
bright	$\leq 0.30$
fine stone	0.25–0.45
stone	0.30–0.75
silver matt	0.40–2.25
matt	0.40–2.25

Different roughness values per side on request.  
Closer tolerances within the roughness ranges in accordance with the standards or on request.

## Organic coating

	Color	Thickness [ $\mu\text{m}$ ]	Surface finishing
<b>Coil coating with film</b>			
<b>Film</b>			
PET	Clear	12, 23	ECCS/TFS
PET	Clear	15	ECCS/TFS
PET	White	23	ECCS/TFS
PET B*	White	20	ECCS/TFS
PP	Clear	40, 100, 200	Tinned/ECCS/TFS
PP	White	30, 50	Tinned/ECCS/TFS

Combinations of coatings, other film thicknesses or colors as well as base materials available on request.  
\*For subsequent painting on the back side and/or printing.

## Coil coating with lacquer

<b>Lacquer</b>		
Single-layered lacquer (one side or both sides)	Clear, gold	For example for mounting cups. Coating weights for lacquer or combination options with PP film and base materials available on request.
Lacquer on both sides	Silver, gold	For example for tab stock. Coating weights for lacquer and base material options available on request.

Other applications on request.

## Lacquered sheets

Colors and coating weights  
(one side or both sides) available  
on request.

BPA NI on request.

## Dimensions

Thickness [mm]	SR BA width [mm]	SR CA width [mm]	DR BA width [mm]	DR CA width [mm]
0.100–0.119	600–950 <sup>5</sup>	–	600–1,000 <sup>5</sup>	–
0.120–0.129	600–1,000 <sup>5</sup>	–	600–1,090	–
0.130–0.139	600–1,000 <sup>5</sup>	–	600–1,090	600**–1,090
0.140–0.149	600–1,050	–	600–1,090	600**–1,090
0.150–0.179	600–1,090	600**–1,090	600–1,220*	600**–1,090
0.180–0.199	600–1,170	600**–1,170	600–1,220*	600**–1,220*
0.200–0.499	600–1,220*	600**–1,220*	600–1,220*	600**–1,220*
≥ 0.50 <sup>5</sup>	○	○	○	○

Max. width for ECCS/TFS: 1,085 mm, additional dimensions on request.  
After consultation for rasselstein® Solidflex and rasselstein® High Formability.

### Sheets

0.100–0.119	600–950 <sup>5</sup>	–	600–1,000 <sup>5</sup>	–
0.120–0.129	600–1,000 <sup>5</sup>	–	600–1,090	–
0.130–0.139	600–1,000	–	600–1,090	600**–1,090
0.140–0.149	600–1,050	–	600–1,090	600**–1,090
0.150–0.179	600–1,090	600**–1,090	600–1,120	600**–1,090
0.180–0.199	600–1,140	600**–1,140	600–1,140	600**–1,140
0.200–0.499	600–1,140	600**–1,140	600–1,140	600**–1,140
≥ 0.50 <sup>5</sup>	○	○	○	○

Sheet length: Straight cut: 450 – 1,200 mm, scroll cut: 560 – 1,150 mm, lacquered sheets: min. 660 mm x 510 mm, max. 1,120 mm x 980 mm.

\* Up to 1,230 mm by arrangement.

\*\* 700 mm by arrangement.

After consultation for rasselstein® Solidflex and rasselstein® High Formability.

## Shipping weights and transport dimensions

Alignment	max. weight [t]	max. outside diameter [mm]	Inside diameter [mm]	Inside diameter <sup>5</sup> [mm]
vertical axis	3.0–12.7	1,630	420	450/508
horizontal axis	3.0–18.0	1,850	508	420/450

### Sheets

–	2.5	–	–	–
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**Narrow strip coated**

Thickness [mm]	Width [mm]	Inside diameter [mm]	Coil weight [kg/mm strip width]
<b>Dimensions according EN 10 140</b>			
0.100–0.149 <sup>5</sup>	20–460	400/450/508	2–10
0.150–0.199	20–540	400/450/508	2–10
0.200–0.499	20–600	400/450/508	2–10

Max. width for ECCS/TFS: 540 mm.





## Blackplate strip uncoated

### Delivery conditions

#### Grades

#### Quality according to EN 10 139, Dimensions according to EN 10 140

Steel grade designation	Standard designation		
rasselstein® DC 01	DC 01	LC	C290–C690
rasselstein® DC 03	DC 03	LC	C290–C590
rasselstein® DC 04	DC 04	LC	C290–C590
rasselstein® DC 05	DC 05	LC	○
rasselstein® DC 06 <sup>5</sup>	DC 06	LC	○

## Oiling

### Anticorit

Oiling weights by arrangement (min. 300 +/- 100 mg/m<sup>2</sup> – max. 750 +/- 100 mg/m<sup>2</sup>).

## Finishes

Finish	Roughness [μm]
smooth	< 0.35
stone finish fine	0.25–0.45
stone finish	0.35–0.60
matt fine	0.75–1.25
matt	1.00–2.00
matt rough	1.75–2.25

C590 and C690 only available in "stone finish" surface.

## Dimensions

Thickness [mm]	Width [mm]	Inside diameter [mm]	Coil weight [kg/mm strip width]	
< 0.150	○	○	400/450/508	2–10*
0.150–0.199	10–540	650–1,080	400/450/508	2–10*
0.200–0.499	10–600	650–1,200	400/450/508	2–10*

Axis: horizontal/vertical.

\*Higher coil weights on request.

Steel  
Packaging Steel

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