

Bimetals

for your safety



**Auerhammer
Metallwerk**

Wickeder Group

Grade	Specific Thermal Curvature 20 °C - 130 °C 10 ⁻⁶ /K	Specific Thermal Deflection 20 °C - 100 °C 10 ⁻⁶ /K	Specific Electrical Resistivity at 20 °C Ω • mm ² /m	Linearity Range °C	Max. Operating Temperature °C	Cladding Layer on high exp. side	High Expansion Side	Intermediate Layer	Low Expansion Side	Cladding Layer on low exp. side		
1	TB 230/110	43.0 ± 5 %	22.5	1.08 ± 5 %	+20 to 230	350	none	MnNi16Cu10	none	FeNi32Co6	none	
2	TB 208/110	39.0 ± 5 %	20.8	1.10 ± 5 %	-20 to 200			MnCu18Ni10	none	FeNi36		
3	TB 200/80	38.9 ± 5 %	20.8	0.82 ± 5 %				MnNi16Cu10	FeNi36/Ni			
4	TB 200/60	38.8 ± 5 %	20.6	0.58 ± 5 %					FeNi36/Ni			
5	TB 200/60Fe	38.8 ± 5 %	20.6	0.58 ± 5 %					Fe			
6	TB 200/40	38.5 ± 5 %	20.5	0.40 ± 5 %					FeNi36/Ni			
7	TB 200/40Cu	38.5 ± 5 %	20.5	0.40 ± 10 %					MnCu18Ni10			Cu
8	TB 200/40Fe	38.5 ± 5 %	20.5	0.40 ± 5 %					MnNi16Cu10			Fe
9	TB 200/30	38.6 ± 5 %	20.3	0.30 ± 7 %					MnCu18Ni10			Cu
10	TB 200/25	38.6 ± 5 %	20.3	0.249 ± 7 %								Cu
11	TB 200/20	38.5 ± 5 %	20.2	0.21 ± 7 %								Cu
12	TB 200/17	38.4 ± 5 %	20.1	0.166 ± 7 %								Cu
13	TB 200/15	38.4 ± 5 %	20.1	0.15 ± 7 %								Cu
14	TB 200/11	37.8 ± 5 %	20.1	0.11 ± 7 %						Cu		
15	TB 200/10	37.5 ± 5 %	20.0	0.10 ± 7 %				Cu				
16	TB 185/08	37.5 ± 5 %	19.4	0.08 ± 10 %				Cu				
17	TB 180/05	33.8 ± 5 %	17.9	0.048 ± 10 %				Cu				
18	TB 175/05	32.4 ± 5 %	17.5	0.05 ± 10 %				Cu				
19	TB 170/03	31.6 ± 5 %	16.2	0.033 ± 15 %				MnNi16Cu10	Cu	FeNi32Co6		
20	TB 140/140	28.4 ± 5 %	14.6	1.40 ± 5 %				MnNi16Cu10	none	FeNi36		
21	TB 140/135	28.5 ± 5 %	14.7	1.35 ± 5 %				MnCu18Ni10	none			
22	TB155/78	28.5 ± 5 %	15.5	0.78 ± 5 %				FeNi20Mn6	none			
23	TB155/78B	28.5 ± 5 %	15.5	0.78 ± 5 %				X60Ni14Mn7	none			
24	TB150/78	27.6 ± 5 %	14.9	0.78 ± 5 %				450	FeNi20Mn6			none
						FeNi20Mn6	none					

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25	TB145/78	26.9 ± 5 %	14.5	0.78 ± 5 %	-20 to 200	450	none	FeNi20Mn6	FeNi36	none	none
26	TB140/78	26.4 ± 5 %	14.2	0.78 ± 5 %							none
27	TB150/55	28.2 ± 5 %	15.0	0.55 ± 5 %							none
28	TB150/55Fe	28.2 ± 5 %	15.0	0.55 ± 5 %							none
29	TB150/50	28.0 ± 5 %	14.9	0.50 ± 5 %							none
30	TB150/50Fe	28.0 ± 5 %	14.9	0.50 ± 5 %							none
31	TB150/45	28.0 ± 5 %	14.9	0.45 ± 5 %							none
32	TB150/45Fe	28.0 ± 5 %	14.9	0.45 ± 5 %							none
33	TB148/35	27.4 ± 5 %	14.8	0.35 ± 5 %							none
34	TB144/30	26.8 ± 5 %	14.4	0.30 ± 5 %							none
35	TB140/25	26.1 ± 5 %	14.0	0.25 ± 5 %		none					
36	TB150/19	28.2 ± 5 %	15.0	0.19 ± 7 %		400	Cu	FeNi20Mn6	FeNi36	none	Cu
37	TB150/17	28.2 ± 5 %	15.0	0.17 ± 7 %							Cu
38	TB150/15	28.1 ± 5 %	15.0	0.15 ± 7 %							Cu
39	TB150/11	27.8 ± 5 %	15.0	0.11 ± 7 %							Cu
40	TB145/11	26.9 ± 5 %	14.5	0.11 ± 7 %							Cu
41	TB130/09	27.0 ± 5 %	14.2	0.09 ± 7 %							Cu
42	TB130/06	26.2 ± 5 %	13.9	0.060 ± 10 %							Cu
43	TB136/06	25.8 ± 5 %	13.6	0.059 ± 10 %		275	Cu	none			
44	TB132/03	24.6 ± 5 %	12.7	0.033 ± 15 %		275		Cu			
45	TB130/03	24.6 ± 5 %	12.7	0.030 ± 15 %	300		Cu				
46	TB147/79	27.7 ± 5 %	14.7	0.79 ± 5 %	-20 to 175	450	none	FeNi22Cr3	FeNi36	none	none
47	TB140/80	26.4 ± 5 %	14.0	0.80 ± 5 %							none
48	TB140/66	26.4 ± 5 %	14.0	0.668 ± 5 %							none
49	TB140/58	26.4 ± 5 %	14.0	0.582 ± 5 %							none
50	TB139/50	26.3 ± 5 %	14.0	0.500 ± 5 %							none
51	TB139/50Fe	26.3 ± 5 %	14.0	0.500 ± 5 %							none
52	TB138/42	26.1 ± 5 %	13.9	0.417 ± 5 %							none

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53	TB138/42Fe	26.1 ± 5 %	13.9	0.417 ± 5 %	-20 to 175	none	FeNi22Cr3	Fe	FeNi36	none			
54	TB134/33	25.7 ± 5 %	13.5	0.332 ± 5 %				450			Ni		
55	TB130/29	25.3 ± 5 %	13.3	0.291 ± 5 %				400			Ni		
56	TB127/25	24.4 ± 5 %	13.0	0.245 ± 5 %							Ni		
57	TB127/25Cu	24.4 ± 5 %	13.0	0.245 ± 7 %							400	Cu	
58	TB119/21	23.2 ± 5 %	12.2	0.208 ± 7 %							450	Ni	
59	TB100/17	20.4 ± 5 %	10.7	0.166 ± 7 %							450	Ni	
60	TB138/17	26.3 ± 5 %	13.8	0.161 ± 7 %							400	Cu	
61	TB138/15	26.6 ± 5 %	14.1	0.150 ± 7 %								Cu	
62	TB137/12	26.2 ± 5 %	13.7	0.116 ± 7 %								Cu	
63	TB137/10	26.1 ± 5 %	13.6	0.097 ± 7 %								Cu	
64	TB135/08	25.9 ± 5 %	13.5	0.083 ± 10 %								Cu	
65	TB134/07	25.6 ± 5 %	13.4	0.066 ± 10 %								Cu	
66	TB131/06	25.5 ± 5 %	13.4	0.058 ± 10 %								Cu	
67	TB128/05	24.9 ± 5 %	13.0	0.050 ± 10 %				Cu					
68	TB124/04	24.7 ± 5 %	12.9	0.041 ± 10 %				Cu					
69	TB121/03	22.9 ± 5 %	12.0	0.033 ± 15 %				Cu					
70	TB64/02	12.6 ± 5 %	6.7	0.025 ± 15 %				300				Cu	
71	TB150/74	28.0 ± 5 %	15.1	0.74 ± 5 %				0 to 300				FeNi20Mn6	none
72	TB135/78	25.1 ± 5 %	13.5	0.78 ± 5 %				0 to 320			450	FeNi20Mn6	none
73	TB135/78B	25.5 ± 5 %	13.5	0.78 ± 5 %	X60Ni14Mn7	none							
74	TB125/09	25.0 ± 5 %	13.4	0.09 ± 7 %	400	Cu							
75	TB124/09	24.0 ± 5 %	12.9	0.09 ± 7 %	400	Cu							
76	TB134/75	25.5 ± 5 %	13.4	0.75 ± 5 %	70 to 230	450	none						
77	TB131/42	25.1 ± 5 %	13.3	0.416 ± 5 %	-20 to 250		FeNi22Cr3	Ni					
78	TB130/33	24.9 ± 5 %	13.0	0.332 ± 5 %			Ni						
79	TB128/29	24.4 ± 5 %	12.8	0.291 ± 5 %			Ni						
80	TB118/21	22.7 ± 5 %	11.9	0.208 ± 7 %			450	FeNi22Cr3	Ni				
						Ni							

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81	TB125/17	24.2 ± 5 %	12.7	0.166 ± 7 %	-20 to 250	400	none	FeNi22Cr3	Cu	FeNi39	none		
82	TB131/15	25.1 ± 5 %	13.2	0.150 ± 7 %					Cu				
83	TB131/12	25.0 ± 5 %	13.1	0.116 ± 7 %					Cu				
84	TB130/08	25.0 ± 5 %	13.0	0.088 ± 7 %					Cu				
85	TB128/08	24.5 ± 5 %	12.8	0.083 ± 8 %					Cu				
86	TB125/07	23.8 ± 5 %	12.4	0.066 ± 8 %					Cu				
87	TB115/05	22.4 ± 5 %	11.7	0.05 ± 10 %					Cu				
88	TB115/70	22.0 ± 5 %	11.7	0.70 ± 5 %	-20 to 380	450	none	FeNi20Mn6	FeNi42	none			
89	TB115/70B	22.0 ± 5 %	11.7	0.70 ± 5 %				450			X60Ni14Mn7	none	
90	TB115/09	21.6 ± 5 %	11.5	0.09 ± 7 %				400			FeNi20Mn6	Cu	
91	TB110/70	21.0 ± 5 %	11.1	0.70 ± 5 %				450				none	
92	TB110/09	20.7 ± 5 %	11.0	0.09 ± 7 %				400				Cu	
93	TB113/69	21.4 ± 5 %	11.3	0.69 ± 5 %	90 to 320	450	none	FeNi22Cr3	FeNi46	none			
94	TB98/72	18.5 ± 5 %	9.8	0.72 ± 5 %				500			FeNi22Cr8.5	none	
95	TB81/66	15.3 ± 5 %	8.1	0.66 ± 5 %	120 to 370	540	none	FeNi22Cr8.5	FeNi46	none			
96	TB100/65	18.6 ± 5 %	10.0	0.65 ± 5 %	-20 to 425	450		FeNi20Mn6			none		
97	TB100/65R	17.0 ± 5 %	9.0	0.62 ± 7 %	-20 to 425	450	CrNi-Steel	FeNi20Mn6	none	FeNi46	none		
98	TB180/108R	33.5 ± 5 %	17.5	1.08 ± 5 %	-20 to 200	350	none	FeNi22Cr3	FeNi36	FeNi36	none		
99	TB103/138R	19.8 ± 5 %	10.3	1.38 ± 5 %				FeNi22Cr3				MnCu18Ni10	none
100	TB135/91	25.5 ± 5 %	13.5	0.91 ± 5 %				none				FeNi20Mn6	MnNi-16Cu10
101	TB155/78R	27.5 ± 5 %	14.5	0.78 ± 5 %				450					CrNi-Steel
102	TB155/78RR	24.6 ± 5 %	13.0	0.75 ± 7 %	-20 to 225	450	CrNi-Steel	none	Cr-Steel	Cr-Steel			
103	TB60/20R	11.4 ± 5 %	6.0	0.20 ± 10 %	-20 to 450	none	none	none	Fe	Ni			
104	TB102/85	19.6 ± 5 %	10.2	0.85 ± 5 %	-20 to 180			525	FeNi18Cr12	none	FeNi31Co8Cr6	none	
105	TB60/70	11.2 ± 5 %	5.9	0.69 ± 5 %	-20 to 600			550	NiCr-Steel	none	Cr-Steel		
106	TB103/81	19.4 ± 5 %	10.3	0.81 ± 5 %	-20 to 300			350	MnNi16Cu10	none	CuNi44Mn1		
107	TB97/16	18.6 ± 5 %	9.8	0.16 ± 5 %	-20 to 220			400	Ni	none	FeNi36		

Thickness Tolerances (in mm)

Thickness	Width ≤ 75	Width > 75 - 125	Width > 125 - 250
0.10 - 0.15	± 0.010	± 0.010	± 0.020
> 0.15 - 0.25	± 0.010	± 0.015	± 0.020
> 0.25 - 0.40	± 0.015	± 0.020	± 0.025
> 0.40 - 0.60	± 0.020	± 0.025	± 0.030
> 0.60 - 1.00	± 0.025	± 0.030	± 0.040
> 1.00 - 1.50	± 0.030	± 0.040	± 0.050
> 1.50 - 2.00	± 0.050	± 0.050	± 0.060

Other thicknesses and tolerances on request.

Width Tolerances (in mm)

Width	Thickness ≤ 1.5	Thickness > 1.50 - 2.00
≤ 75	+ 0.2	+ 0.4
> 75 - 125	+ 0.3	+ 0.5
> 125 - 250	+ 0.5	+ 0.8

Other width and tolerances on request.

Product Forms / Delivery Forms (in mm)

Form	Thickness	Width	Length	Coil-ID	Coil-OD
Strip	0.10 - 2.00	3 - 250		300 / 400 / 500	max. 1100
Sheet	0.60 - 2.00	8 - 250	500 - 3000		
Snap action disc strip	0.1 - 0.4	10 - 60		300 / 400 / 500 (on core)	

Thickness Tolerances (Snap action disc strip) (in mm)

Thickness	Tolerances
≤ 0.2	± 0.004
> 0.2 - 0.4	± 2%

Other thicknesses and tolerances on request.

Length Tolerances (Cut Length) (in mm)

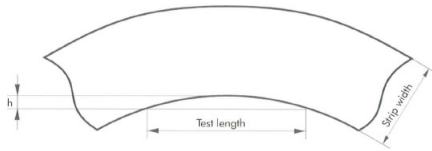
Thickness	Length 500 - 1000	Length > 1000 - 1300
0.60 - 2.00	+ 10	+ 1%

Other length and tolerances on request.

5. Dimension tolerances for stretch-levelled strip

Straightness of strip edge in longitudinal direction (edge camber)

The allowed straightness deviation is stipulated in DIN 1715 and measured on a test piece having a length of 1.000 mm.



Tighter edge camber tolerance can be agreed.

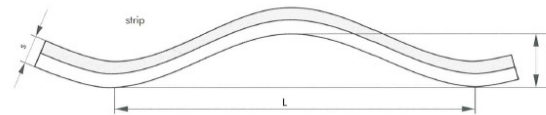
strip width mm	max. deviation h from straight line mm
≤ 10	by arrangement
> 10 to 25	5
> 25 to 40	3.5
> 40 to 125	2.5
> 125	2

Surface flatness across strip width (cross bow)

The cross curvature can be agreed depending on strip width, strip thickness and material.

Surface flatness in rolling direction (waviness)

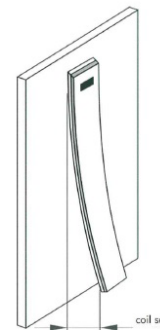
The waviness is the ratio of wave height h to wavelength L and stipulated in DIN 1715.



Thickness s mm	Waviness h/L %
≤ 1.00	max. 3
> 1.00	max. 2

Surface flatness in rolling direction (coil set)

Coil set can be agreed. It can be confirmed in rolling direction, in the opposite direction or with a +/- tolerance. The test is carried out on a 300 mm long test piece hanging on a measuring device.



Edge properties

The standard production route provides strip with low slitting burr edges. The burr must not exceed 10 % of the strip thickness for material having a strip thickness up to 0.50 mm. For a thickness above 0.50 mm, the burr must not exceed 0.050 mm in height. Deburred or rounded edges can be agreed for a strip thickness of 0.5 to 1.5 mm. The edge radius for rounded edges can be 10 % to 40 % of the strip thickness with a minimum radius of 0.1 mm and a maximum radius of 0.5 mm. The minimum edge radius tolerance can be agreed and represents +/- 0.05 mm of the nominal edge radius.

6. Marking

A permanent marking is applied to the high expansion side of the strip, preferable by an etching process. This marking must not affect the thermostatic bimetal properties. If required, the marking can be embossed on strip having a minimum thickness of 0.60 mm. Delivery of strip marked on the low expansion side or without any marking has to be agreed separately.

7. Packaging

The correct form of packaging is chosen to ensure protection of the strip quality. The strip is temporarily protected by an anti-corrosion oil.

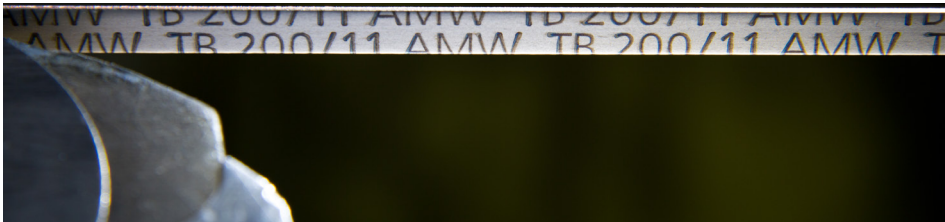
Standard Continental Packing:

Pallet type (mm)	700 x 700, 800 x 800, 1000 x 1000, Euro pallet 800 x 1200
Ties	3 x plastic tie fastenings
Individual coil wrapping	none
Intermediate layers	cardboard disks
Stack height	max. 600 mm included pallet
Shrink-wrap foil	covering stack
Labelling	each pallet

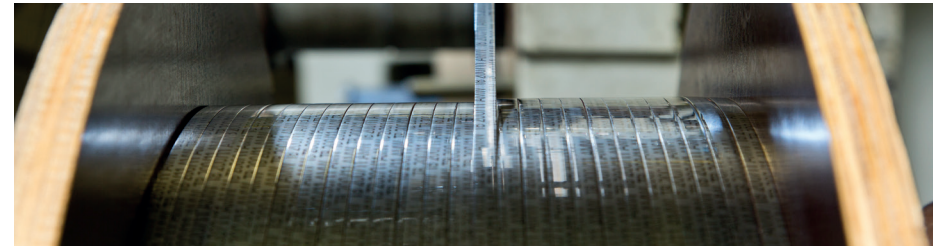
Standard Sea Freight Packing:

Pallet type	wooden box
Ties	3 x plastic tie fastenings
Individual coil wrapping	corrosion protective paper
Intermediate layers	none
Stack height	max. 600 mm incl. crate
Shrink-wrap foil	sealing stack completely
Labelling	each

Other packing as well as delivery on reels upon agreement.



All data contained in this document are for information purposes only. Other properties can be engineered according to customer specifications. Guarantees of specific characteristics or applications require special written agreement.



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Portfolio Auerhammer :

- › Clad material
- › Thermostatic bimetal
- › Sealing- and expansion alloys
- › Soft magnetic materials
- › Coining materials
- › Temperature- and corrossions-resistant materials
- › Welding consumables
- › Metal foils

