

# Roofing Diversity.

Possibilities for industrial  
and commercial applications.



A company  
of ThyssenKrupp  
Steel

**ThyssenKrupp Bausysteme**



**ThyssenKrupp**

# ThyssenKrupp Bausysteme.

## Strong partners, strong companies.

Economic efficiency, low cost of operation, large building dimensions - the demands on modern industrial or commercial buildings are constantly increasing. Whereas in former times a simple 'housing' was sufficient to keep bad weather such as rain and wind at bay, today a high-tech envelope is required. Such an envelope should conserve energy and provide noise reduction. It should be easily installed, readily modified and available at an affordable price.

In industrial building, the roof usually constitutes the largest surface area. Customers often try to save money without considering the possible consequences. They should be aware that tailor-made solutions are available for most applications. ThyssenKrupp Bausysteme offer one of the largest product portfolios in the world, especially for roofing purposes.

If a roof is to be constructed conventionally using one or several components, ThyssenKrupp Bausysteme offer a variety of components in the single sheet range:

- **Hoesch Trapezoidal profiles** with varying heights between 35 and 160 mm, which are also available as perforated profiles.
- **Hoesch Roof System 2000** for large spans of up to 10 m.
- **Hoesch Arched Roof** with spans of up to 20 m for applications meeting exacting architectural demands.

.... or if a rapidly laid large-surface roof with a high level of thermal insulation is required, the range of sandwich elements proposed by ThyssenKrupp Bausysteme will cope with almost any demand:

- **Hoesch Thermodach** featuring the triplex system composed of three factory-applied sealing strips and a PUR insulating core, which virtually meets all demands imposed on a modern industrial roof.
- **Hoesch isodach integral®**, a further development of sandwich roof panels. This roofing is also provided with the triplex system. The special feature is concealed fastening which reduces any possible leakage to a minimum.
- **Hoesch isodach mono®**, the appropriate panel for large, almost flat roof surfaces. Apertures can be easily cut and roof superstructures, often required for modern and environmentally friendly energy generation, can be rapidly installed.

- **Hoesch isorock® integral D**, the first 'non combustible' sandwich roof element, which is verified by an official building material classification. These elements are quick to install and safe to use. In addition this system features a fire resistance of up to 90 minutes.

**Whatever ideas and demands you may have, ThyssenKrupp Bausysteme is your capable and strong partner who will assist you in finding the appropriate solution to your problems, offering:**

- one of the largest ranges of ecological and recyclable products for industrial building construction
- products and service ideally adapted to meet customer's needs and requirements.
- production sites close to the market, thus giving rapid and flexible service
- highly motivated, fully qualified staff able to give competent advice
- high grade innovative products at keen prices.

Welcome to  
ThyssenKrupp Bausysteme

## The range of building elements for roofs

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# Hoesch isorock® integral D.

The non-combustible roof with fire resistance of up to 90 minutes

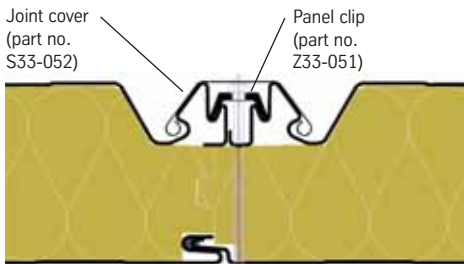
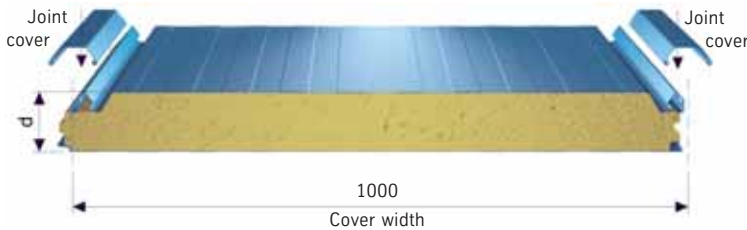
Cut-outs or openings for ventilation ducts and flaps etc. may easily be provided in the smooth surface of Hoesch isorock® integral D. The required apertures can be easily cut into the roof panels and reliably sealed.

## Product properties

- Concealed fastening, potential leakage points are minimized
- Complete sandwich panel non combustible as per EN 13.501-1: A2-s1, d0
- Rockwool core layer as per building material class A1, non combustible
- The rockwool core layer is biodegradable
- Steel sheet made from GALFAN® plus coating
- Minimum roof slope 5°
- High thermal insulation resulting from a reduced number of deep beads, almost complete utilization of the nominal panel height
- Vapour-tight cover sheets with factory-applied sealing tapes in the joint area
- Thermal separation of the cover sheets
- Fire resistance classes as per DIN EN 13.501-2 from EI 30 to EI 90



CreativeLine



Joint detail

Designation of building part	Type	Overall thickness d	Material thickness		Max. length supplied	Weight	Thermal resistance R	Heat transfer coefficient U
			Outer steel sheet $t_N$	Inner steel sheet $t_N$				
		mm	mm	mm	m	kg/m <sup>2</sup>	m <sup>2</sup> K/W	W/m <sup>2</sup> K
Hoesch isorock® integral D	D1	95	0.50 0.75	0.50 0.75	18.0 17.8	18.0 22.5	2.19	0.42
		115			18.0 16.3	20.0 24.5	2.65	0.35
		135			18.0 15.1	22.0 26.5	3.12	0.30
		155			16.7 14.0	24.0 28.5	3.58	0.27
	D1	95	0.50 0.75	0.50 0.75	18.0 16.1	20.3 24.8	2.09	0.44
		115			17.6 14.7	22.8 27.3	2.53	0.37
		135			15.8 13.4	25.3 29.8	2.98	0.32
		155			14.4 12.4	27.8 32.3	3.24	0.28



certified

Profiling of cover sheet	Slightly profiled (L)	Microprofiled (M)	V-profiled (V)
Outer sheet	●	●	●
Inner sheet	●		

● = available

# Hoesch isodach mono®.

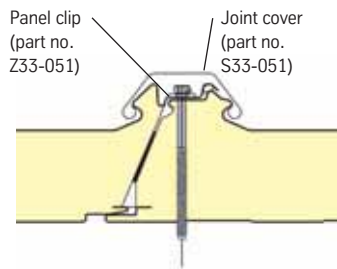
Four in one: load-bearing sheet, vapour barrier, thermal insulation and sealing.

A roof composed of sandwich elements, which provides for easy roof apertures and straightforward installation and which has a visually pleasing appearance. With concealed fastening and single-rib design, it gives the impression of a standing seam roof.

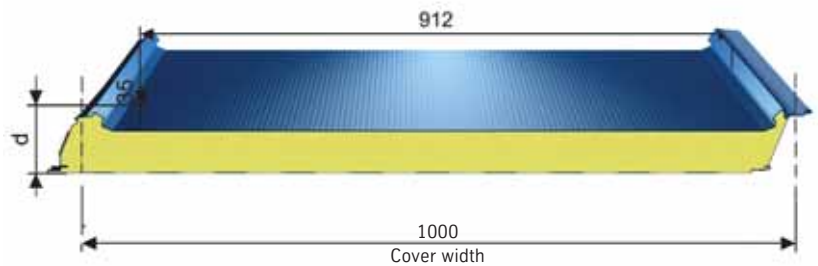


## Product description

- Fastening mainly without visible penetration of the roof surface by through bolts
- Steel sheets made from GALFAN® plus coating
- Alternative material for the cover sheets on request
- Outer sheet slightly profiled or microprofiled, inner sheet slightly profiled
- Excellent thermal insulation ensured by PUR core layer
- Appealing appearance with only one rib per element
- New triplex joint design
- Minimum roof slope 3° (5° in the case of cross joints or roof superstructures)



Joint detail: concealed fastening



Designation of building element	Element thickness d	Material thickness		Max. length supplied	Weight	Thermal resistance R*	Heat transfer coefficient U*		
		outer sheet t <sub>N</sub>	inner sheet t <sub>N</sub>						
	mm	mm	mm	m	kg/m <sup>2</sup>	m <sup>2</sup> K/W	W/m <sup>2</sup> K		
Hoesch isodach mono®	95	0.55 0.75	0.50 0.50	24	11.6 13.3	2.64	0.36		
	115				12.4 14.1			3.51	0.27
	135				13.1 14.8				

\* calculation acc. to EN ISO 6946

Profiling of cover sheet	Slightly profiled (L)	Microprofiled (M)
Outer sheet	●	●
Inner sheet	●	

● = available

# Hoesch isodach integral®.

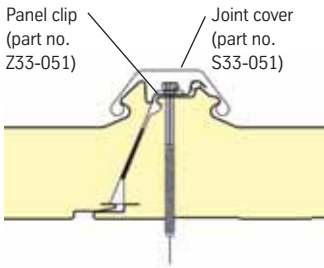
## High quality and easy to install: for exacting architecture.

Hoesch isodach integral® unites all the benefits that are offered by a modern sandwich element. It combines high thermal insulation with good load-bearing capability and a high degree of prefabrication. With its triplex joint design, it provides for rapidly installed roofs, which are safe in the long term.

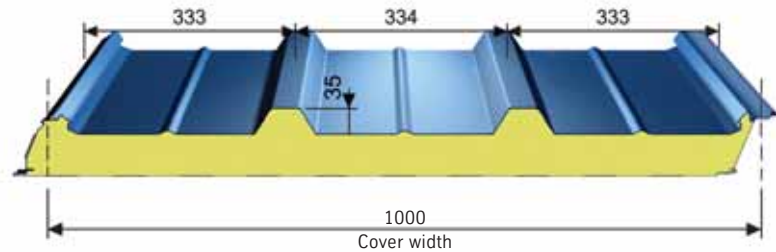


### Product description

- Fastening mainly without visible penetration of the roof surface by through bolts
- Almost maintenance-free and holding its value
- Excellent thermal insulation ensured by PUR core layer
- Short installation time
- Steel sheets made from GALFAN® plus coating
- Minimum roof slope 3° (5° in the case of cross joints or roof superstructures)
- Alternative material for covers sheets on request
- Outer sheet trapezoidal profiled, inner sheet slightly profiled
- New triplex joint design



Joint detail: concealed fastening



Designation of building element	Element thickness d mm	Material thickness		Max. length supplied m	Weight kg/m <sup>2</sup>	Thermal resistance R* m <sup>2</sup> K/W	Heat transfer coefficient U* W/m <sup>2</sup> K
		outer sheet t <sub>N</sub> mm	inner sheet t <sub>N</sub> mm				
Hoesch isodach integral®	75	0.50 0.75	0.40 0.50	24	9.9 13.1	1.89	0.49
	95				10.7 13.9	2.78	0.34
	115				11.5 14.7	3.66	0.26
	135				12.2 15.4	4.54	0.21

\* calculation acc. to EN ISO 6946

# Hoesch isowelle® Roof.

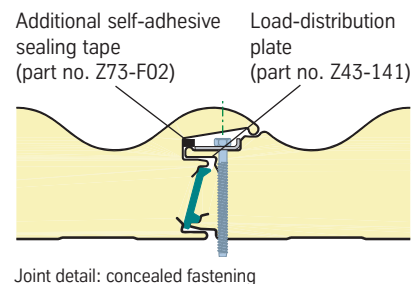
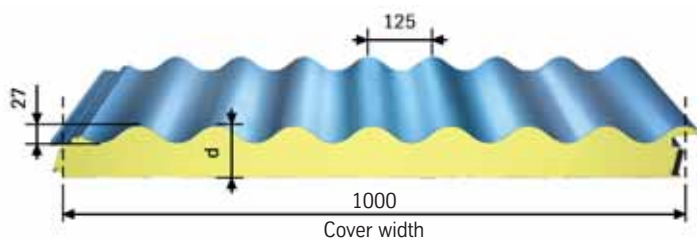
The attractive and modern sandwich element for sloping roofs.

Hoesch isowelle® Roof combines efficiency and practicability with an appealing visual appearance. The GALFAN® coating makes the sandwich panels highly resistant.



## Product description

- Rapid installation
- Efficient thermal insulation
- Corrugated outer steel sheet
- Standard flashings available, special flashings available on request
- Available in lengths up to 20 m
- GALFAN® surface protection under the coloured coating
- Minimum roofing slope  $\geq 10^\circ$
- Standard colours available in PVDF and poylester, wrinkle colours available on request
- For quantities of 600 m<sup>2</sup> and more, all colours are available



Designation of building part	Overall thickness d	Material thickness		Max. length supplied	Weight	Thermal resistance R*	Heat transfer coefficient U*
		outer steel sheet t <sub>N</sub>	inner steel sheet t <sub>N</sub>				
	mm	mm	mm	m	kg/m <sup>2</sup>	m <sup>2</sup> K/W	W/m <sup>2</sup> K
Hoesch isowelle® Roof	64	0.60	0.75	20	14.5	2.11	0.44
	84				15.3	2.98	0.32
	104				16.1	3.85	0.25

\* calculation acc. to EN ISO 6946

# Hoesch Roof System 2000.

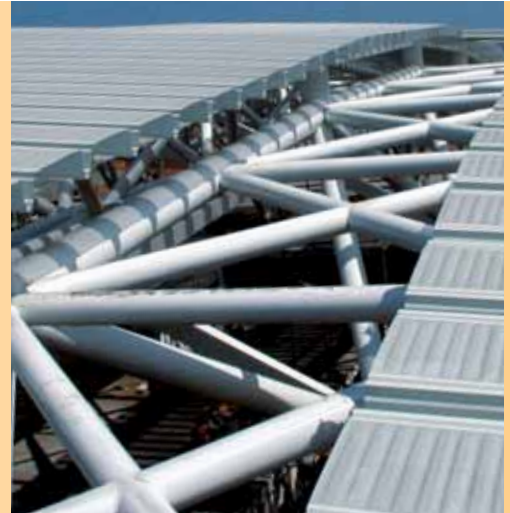
Far reaching possibilities.

This roofing system meets extremely high demands on load-bearing capacity and rigidity. With spans of up to 10 m and the pleasing visual appearance of the soffit, it is the system of choice for public buildings, e.g. airports or event buildings.




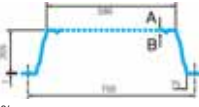
## Product description

- High load-bearing capacity achieved by building according to a system
- High rigidity
- Low dead weight
- Functional design
- Industrialized building using technically proven systems
- Appealing visual appearance (underside)
- Official approval no. Z-14.1-137 for Germany issued by the building inspectorate
- High load-bearing capacity even in an acoustic design with perforations



SpecialLine



	Max. length supplied	Material thickness $t_n$	Profile weight
	m	mm	kg/m <sup>2</sup>
Profile TRP 200 	24	0.75	9.60
		0.88	11.30
		1.00	12.80
		1.25	16.00
		1.50	19.20
Profile TRP 200 upper chord perforated 	24	0.75	8.36
		0.88	9.84
		1.00	11.20
		1.25	14.00
		1.50	16.00

Percentage of perforation: 16%

Installation only with supporting cleats (part no. K32-011/-013/-014/-016) and mounting strip (part no. K32-021, K32-023).

Please indicate the A and the B sides in the case of different coatings.

# Hoesch Arched Roof.

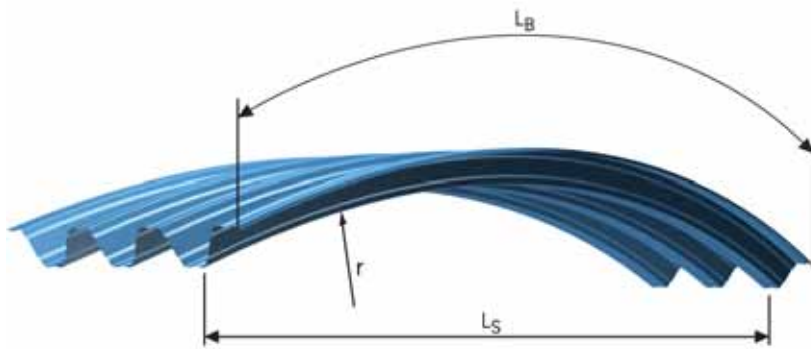
## For an architecture full of swing.

Innovative appearance combined with functionality. Hoesch Arched Roof is a free-span arched steel structure that meets the most exacting architectural demands. Whether for sports or shopping centres or for industrial buildings, Hoesch Arched Roof is the preferred concept for realizing aesthetic designs that were unimaginable a few years ago.

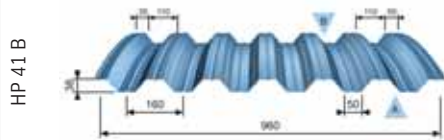


### Product description

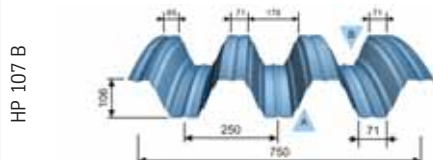
- Imposing visual appearance
- Individually adaptable to suit the building
- High stability
- Free spans of up to 20 m (double-sheet design)
- Economic as a result of industrialized prefabrication



Designation of building part	Material thickness $t_N$ mm	Min. arch radius $r$ m	Dead weight kg/m <sup>2</sup>	Arch length $L_B$ m
HP 41 B	0.75	8.00	7.81	max. 16.00 <sup>1)</sup>
	0.88	6.00	9.17	
	1.00	4.50	10.42	
	1.25	4.00	13.02	
	1.50	4.00	15.63	



Designation of building part	Material thickness $t_N$ mm	Min. arch radius <sup>2)</sup> m	Dead weight kg/m <sup>2</sup>	Arch length $L_B$ m
HP 107 B	0.75	30.00	10.00	max. 24.00
	0.88	22.00	11.73	
	1.00	13.00	13.33	
	1.25	11.00	16.67	
	1.50	10.00	20.00	



Please indicate the A and the B sides in the case of different coatings

<sup>1)</sup> Arch length up to 16 m available on request

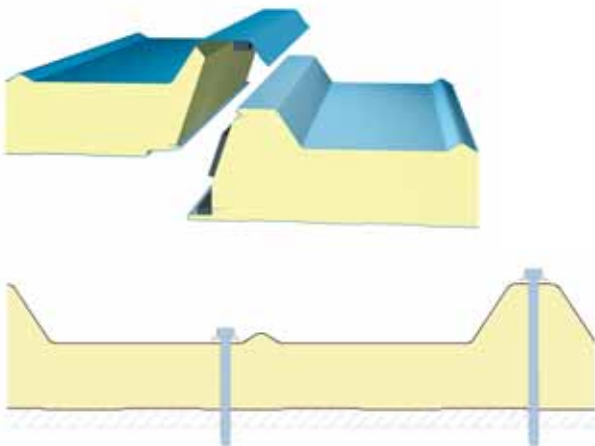
<sup>2)</sup> Please note the maximum arch radius of 35 m

# Hoesch Thermodach.

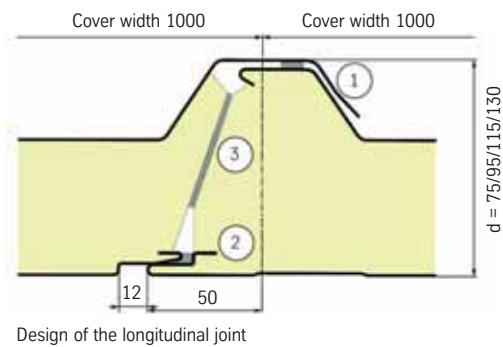
The well proven, ecological sandwich roof element with visible fastening features, excellent static values and the best heat transfer coefficients.

## Product description

- Easy and rapid installation due to optimised joint design
- Vapour-tight inner steel sheet
- Joint sealing using the triplex system
  1. Outer seal to prevent surface water from penetrating
  2. Inner seal to complete the vapour barrier
  3. Intermediate seal to compensate for tolerances of the thermal insulation
- Low dead weight combined with high load-bearing capacity achieved by the three-rib design of the outer sheet
- Many variations available
- Elements available with thicknesses of 75, 95, 115 or 130 mm
- Core layer free from HCFC and FCC
- Laying is possible without using a pressing device



Through bolts can be used in the lower and upper chords



Designation of building part	Overall thickness d	Material thickness		Max. length supplied	Weight	Thermal resistance R	Heat transfer coefficient U
		outer steel sheet $t_N$	inner steel sheet $t_N$				
	mm	mm	mm	m	kg/m <sup>2</sup>	m <sup>2</sup> K/W	W/m <sup>2</sup> K
Hoesch Thermodach	75	0.50	0.40	24	9.9	1.89	0.49
	95				10.7	2.78	0.34
	115				11.5	3.66	0.26
	130				12.1	4.32	0.22

Other sheet thicknesses available on request.

# Hoesch Trapezoidal profiles.

The classical, versatile material for roofs and walls, which may be used in the single or double-sheet version, available with or without perforation, an economic solution for large surfaces.



Trapezoidal steel profiles to DIN 18 807

Profile Please note the A and B sides!	Max. length supplied	Material thickness $t_N$	Weight
	m	mm	kg/m <sup>2</sup>
	18	0.63	6.01
		0.75	7.16
		0.88	8.40
		1.00	9.55
	18	0.63	6.09
		0.75	7.25
		0.88	8.50
	18	0.63	6.80
		0.75	8.10
		0.88	9.50
		1.00	10.80
	18	0.63	6.89
		0.75	8.20
		0.88	9.62
	18	0.75	8.10
		0.88	9.50
		1.00	10.80
	18	0.63	6.30
		0.75	7.50
		0.88	8.80
		1.00	10.00
		1.25	12.50
		1.50	15.00

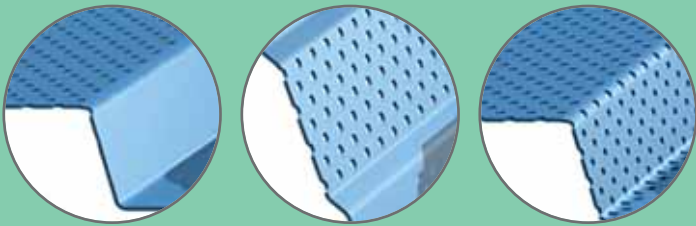
Please indicate the A and the B sides in the case of different coatings.

Trapezoidal steel profiles to DIN 18 807

Profile Please note the A and B sides!	Max. length supplied	Material thickness $t_N$	Weight
	m	mm	kg/m <sup>2</sup>
	24	0.75	8.03
		0.88	9.42
		1.00	10.70
		1.25	13.40
		1.50	16.10
	24	0.75	9.10
		0.88	10.70
		1.00	12.10
		1.25	15.20
		1.50	18.20
	24	0.75	10.00
		0.88	11.70
		1.00	13.30
		1.25	16.70
		1.50	20.00
	24	0.75	9.74
		0.88	11.40
		1.00	13.00
		1.25	16.20
		1.50	19.50
	24	0.75	10.70
		0.88	12.60
		1.00	14.30
		1.25	17.90
		1.50	21.50
	24	0.75	12.10
		0.88	14.20
		1.00	16.10
		1.25	20.10
		1.50	24.20

Please indicate the A and the B sides in the case of different coatings.

Hole patterns for acoustic profiles



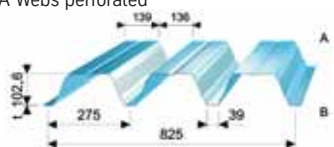
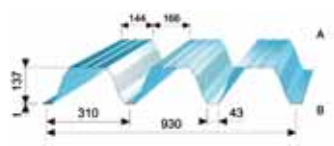
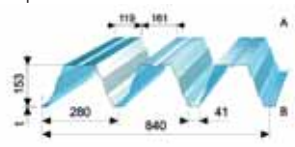
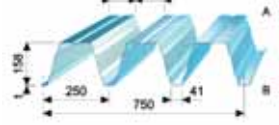
Upper chords perforated

Webs perforated

Entire surface perforated

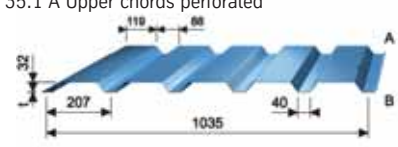
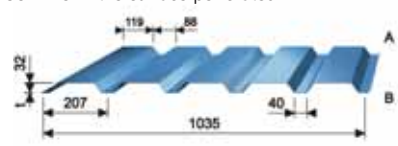
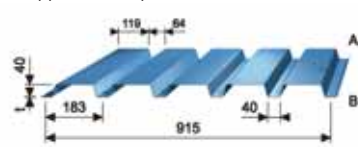
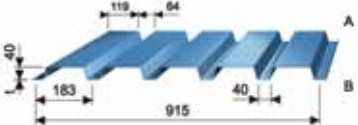


Acoustic profiles to DIN 18 807

Profile Please note the A and B sides!	Max. length supplied m	Material thickness $t_N$ mm	Weight kg/m <sup>2</sup>
T 100.1 A Webs perforated 	24	0.75	8.23
		0.88	9.66
		1.00	11.00
Percentage of perforation 15.9 %*			
T 135.1 A Webs perforated 		0.75	8.89
		0.88	10.43
		1.00	11.85
Percentage of perforation 11,3 %*			
T 150.1 A Webs perforated 		0.75	9.8
		0.88	11.5
		1.00	13.0
		1.25	16.3
		1.50	19.5
Percentage of perforation 12,5 %*			
T 160.1 A Webs perforated 		0.75	11.00
		0.88	12.90
		1.00	14.70
		1.25	18.40
		1.50	22.00
Percentage of perforation 14 %*			

\* referring to the cover width  
Please indicate the A and the B sides in the case of different coatings.

Acoustic profiles for walls

Profile Please note the A and B sides!	Max. length supplied m	Material thickness $t_N$ mm	Weight kg/m <sup>2</sup>
T 35.1 A Upper chords perforated 	18	0.75	5.76
Percentage of perforation 22.3 %*			
T 35.1 AG Entire surface perforated 			
Percentage of perforation 32.3 %*			
T 40.1 A Upper chords perforated 			6.51
Percentage of perforation 25.3 %*			
T 40.1 AG Entire surface perforated 			5.71
Percentage of perforation 36.5 %*			

\* referring to the cover width  
Please indicate the A and the B sides in the case of different coatings.

**ThyssenKrupp Bausysteme GmbH**  
Hammerstrasse 11  
D-57223 Kreuztal, Germany  
Phone: +49 / 27 32 / 599 1 221  
Fax: +49 / 27 32 / 599 1 219  
E-Mail: [export.tks-bau@thyssenkrupp.com](mailto:export.tks-bau@thyssenkrupp.com)  
Internet: [www.tks-bau.com](http://www.tks-bau.com)



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