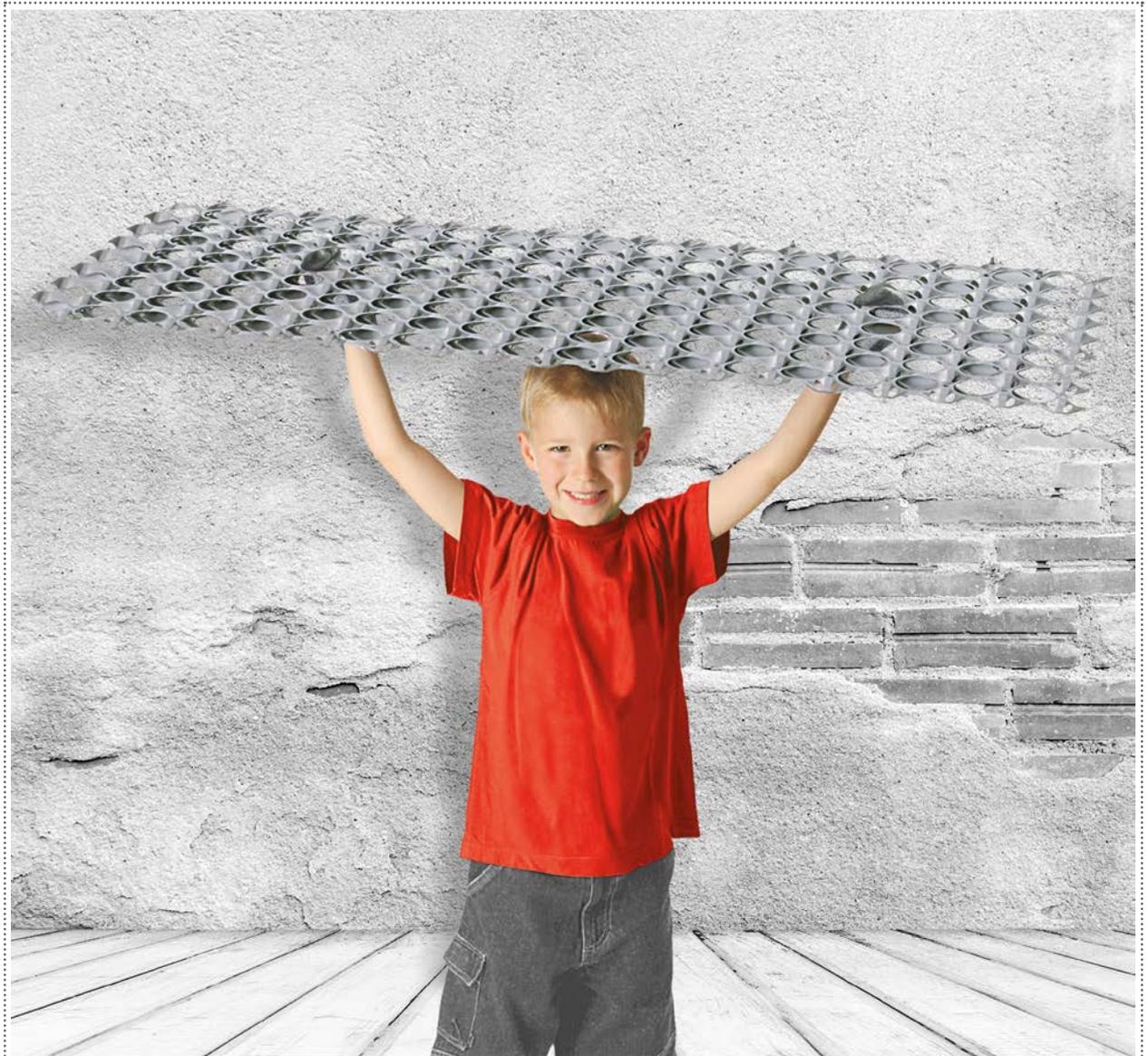


THE FLOOR RENOVATION SYSTEM WP 900

INTRODUCTION

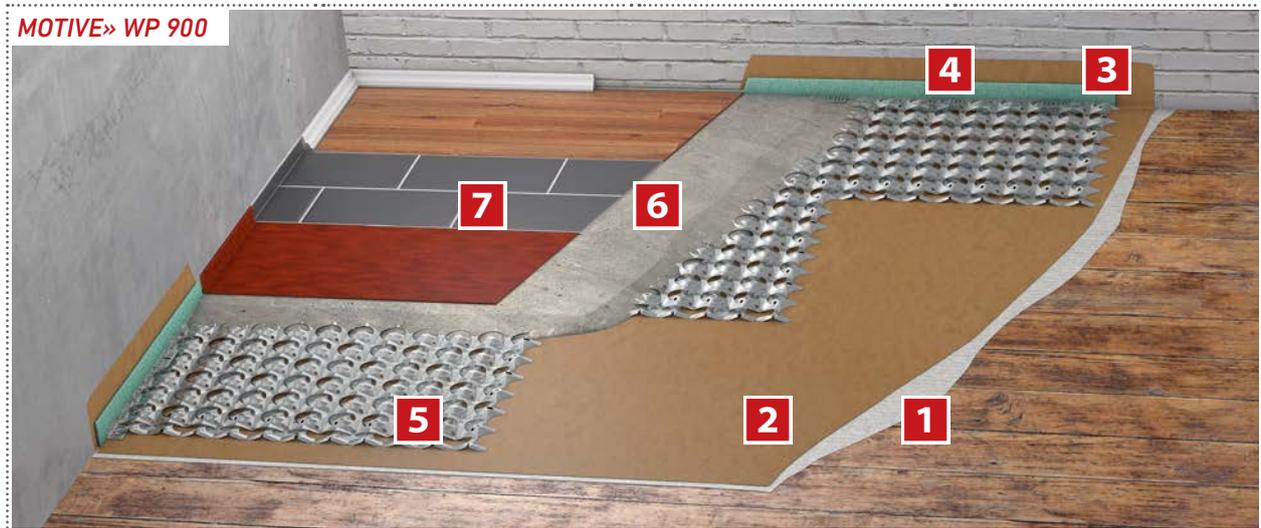


BASIC PRINCIPLE OF COMB PANELS

EFFIDUR floor systems WP consist of two preformed steel sheets that are firmly connected to each other to form a honeycomb shaped panel. These comb panels (WP) are fit as floating floor area without connection to the sub-floor, if necessary equipped with pipes and backfilled with screed with a minimum overlap in height of only 5 mm. This way an innovative, highly stable floor system is created, that can be used as floor reinforcement or equipped with pipe for heating or cooling just as required.

THE COMB PANEL SYSTEM CONSISTS OF THREE TYPES

WP 900 [14 mm total]	WP 1000 [15 mm total]	WP 2000 [25 mm total]
BASIS WITHOUT HEATING	CLIMATE HEATING / COOLING	CLIMATE HEATING / COOLING
<p>14 mm SYSTEM HEIGHT 9 mm + 5 mm SYSTEM SCREED</p>	<p>15 mm SYSTEM HEIGHT 10 mm + 5 mm SYSTEM SCREED</p>	<p>25 mm SYSTEM HEIGHT 20 mm + 5 mm SYSTEM SCREED</p>
<p>system height 9 mm [+ 5 mm SFM] Applicable for reinforcement of the old sub-floor without heating of the new floor.</p>	<p>system height 10 mm [+ 5 mm SFM] Especially suited for the retrofit of old buildings, where an underfloor heating is only feasible with a low building height.</p>	<p>system height 20 mm [+ 5 mm SFM] Advantage here» Heating pipes \varnothing 8 mm can be crossed and other media might be integrated.</p>



- 1** Impact Sound Insulation
- 2** Separation Layer
- 3** Border Insulation Tape
- 4** Bracket
- 5** Comb Panel
- 6** System Screed
- 7** Floor Covering

Each comb panel type is delivered to the building site in handy measurements of 1192 x 556 mm (length x width) or in a specific case with a variable length including all components through qualified wholesalers / craftsmen. The packages containing 10 comb panels can easily be carried to the building site (1200 x 560 x 1 resp. 200 mm) weighing about 30 kg.

ADVANTAGES AT A GLANCE

- » Low building height from 9 mm* flush floor finish possible for barrier-free access.
- » widely independent from sub-floor - unevenness of up to 20 mm can be balanced out without further works.
- » Reinforcement of sub-floor - highly load-bearing traffic areas feasible.
- » Excellent controllability - comparable to radiators through fast heat spreading of the steel panel and heating pipe close to the surface this way very short heating-up periods, ideal for temporarily used rooms, fast reaction to external heat input (solar irradiation).
- » Homogeneous head spreading - low temperature ripple at the floor surface already from a system size of only 15 mm, confirmed through testing according to DIN CERTCO Nr. 7F257.
- » Highly energy-efficient through low flow temperatures - up to 5 K lower than conventional underfloor heating, i.e. savings on heating costs of up to 10 %
- » Low material input - this way low static impact on the building through weight of the floor system.
- » Quickly ready for floor covering already after 5 days, when using system WP1000 heated, system screed SFM with a thickness of 10 mm* and under ideal ambient conditions.
- » Ideal for modern low temperature heating facilities, condensing boiler technology and heat pumps.

[*without screed overlap flushed for flooring with tiles and flags in middle-bed method, see detailed information at installation instructions under chapter "Backfilling with system screed SFM".]

PARAMETER	WP 900	WP 1000	WP 2000	NOTES
system height	9 mm	10 mm	20 mm	without screed (SFM) overlap and sub- or super-structure
building height	14 mm	15 mm	25 mm	comb panel with 5 mm screed (SFM) overlap
dimensions in mm	1080 x 480 ≈ 0,52 m ²	1080 x 480 ≈ 0,52 m ²	1080 x 480 ≈ 0,52 m ²	usable area per comb panel
weight without screed	approx. 5 kg/m ²	approx. 5 kg/m ²	approx. 5 kg/m ²	one packing unit = 5 m ² (10 comb panels)
weight with screed	approx. 29 kg/m ²	approx. 30 kg/m ²	approx. 45 kg/m ²	comb panel with 5 mm screed (SFM) overlap, at even subfloor
heat flow density	---	60 - 90 W/m ²	60 - 90 W/m ²	at a pipe distance of 120 mm and a pipe ø 8 - 10 mm for $\vartheta_i = 20\text{ °C}$
cooling flow density	---	20 - 40 W/m ²	20 - 40 W/m ²	at a pipe distance of 120 mm and a pipe ø 8 - 10 mm for $\vartheta_i = 26\text{ °C}$ einem Rohr ø 8 - 10 mm für $\vartheta_i = 26\text{ °C}$
maximum field size without joints	up to 200 m ² for heated areas up to 300 m ² for unheated areas			using system screed SFM

LOAD-BEARING BEHAVIOUR OF THE FLOOR SYSTEMS (EXCERPT FROM SURVEY REPORT OF MPA STUTT GART)

effidur comb panel in combination with effidur system screed upon separation layer / various insulation	licit traffic loads in kN/m ² ***		licit point loads in kN***
	15 mm made of 10 mm WP 1000 with 5 mm system screed SFM overlap, directly borne on reinforced concrete floor	up to 5,0	up to 4,0
15 mm made of 10 mm WP 1000 with 5 mm system screed SFM overlap, upon acoustic fleece 4 mm (CP 2)	up to 2,0	up to 2,0	
25 mm made of 20 mm WP 2000 with 5 mm system screed SFM overlap, upon acoustic panel 25 mm (CP 5)	up to 2,0	up to 1,0	
25 mm made of 20 mm WP 2000 with 5 mm system screed SFM overlap, upon acoustic fleece 4 mm (CP 2)	up to 3,0	up to 3,0	
35 mm made of 20 mm WP 2000 with 15 mm system screed SFM overlap, upon acoustic fleeces 4 mm (CP 2)	up to 5,0	up to 4,0	
When avoiding point loads in corner and border areas and subject to the applied insulation material load-bearing capacity of up to 8 kN/m ² feasible			

** ϑ_i = Indoor temperature / *** application fields acc. to DIN 1055 part 3, edition 2002

APPLICATION FIELD OF THE COMB PANEL WP 900

RETROFIT OF OLD BUILDINGS

- » system can be fit upon old, but load-bearing floor boards and other floorings.
- » system can be fit upon worn-out and contaminated sub-floors.
- » imperfections of up to 0,2 m² per m² can be covered with the effidur floor system (for larger imperfections please contact us).
- » unevenness of up to 20 mm can be balanced out by backfilling with system screed without further works.
- » considerable improvement of sound insulation of the floor feasible.

INDUSTRIAL BUILDINGS

- » highly load-bearing traffic areas with low heights.

NEW BUILDINGS / PRE-FABRICATED BUILDINGS

- » floors with comfortable sound insulation feasible in spite of lightweight construction.
- » ceramic and natural stone floorings in combination with the comb panel system feasible upon nearly all kinds of sub-floors.

PUBLIC BUILDINGS / CHURCHES

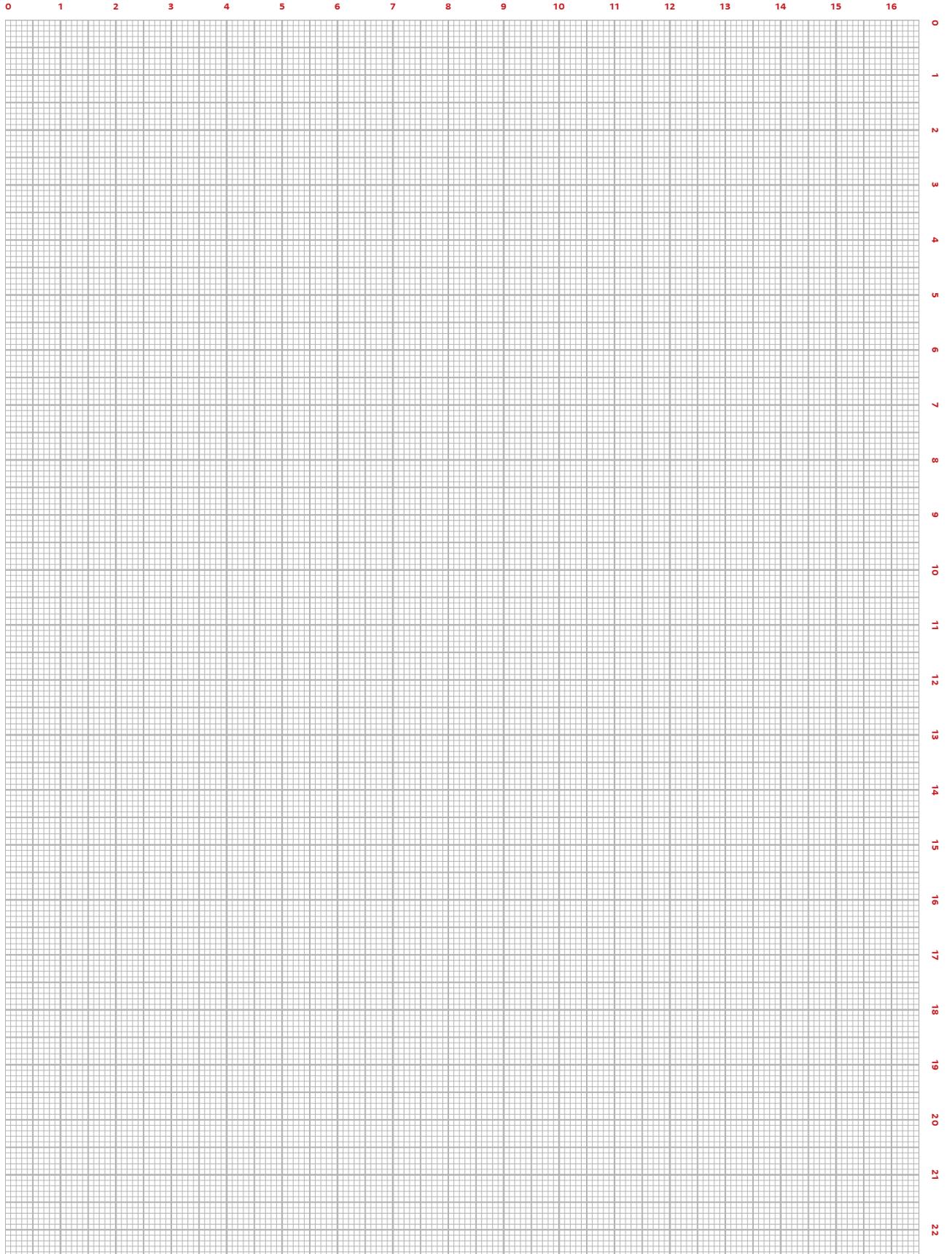
- » barrier-free building feasible (e.g. hospitals, homes for the elderly).

APPLICATION FILEDS ACC. TO LICIT AREA AND POINT LOADS

APPLICATION FIELD (EXAMPLE)			work load kN/m ²	point load kN
A1	attic	non-suited for residential purposes, but accessible attic with clear height of up to 1.80 m	1,0	1,0
A2	loungue areas	rooms with sufficient lateral distribution of loads, rooms and hallways in residential buildings bed rooms in hospitals, hotel rooms incl. kitchen and bath rooms	1,5	-
A3		as A2, but without sufficient lateral distribution of loads	2,0	1,0
B1	offices, working areas, hallways	hallways in office buildings, offices, medical practice, waiting rooms, lounges incl. hallways, barns for small domestic animals	2,0	2,0
B2		hallways in hospitals, hotels, home for the elderly, boarding schools etc. kitchens, medical treatment rooms incl. operating rooms without heavy devices	3,0	3,0
B3		as B2, but with heavy devices	5,0	4,0
C1	rooms, meeting rooms and areas suited for meetings (except for categories A, B, D and E)	areas with tables e.g. class rooms, cafés, restaurants, dining halls, reading halls, entrance halls	3,0	4,0
C2		areas with firm seating, e.g. areas in churches, theatres or cinemas, convention halls, auditorium, waiting rooms	4,0	4,0
C3		freely accessible areas, e.g. museum areas, exhibition areas etc. entrance areas of public buildings and hotels, impassable yard cellar ceilings	5,0	4,0
C4		sports and play areas, e.g. dancing halls, sports halls, gymnastics and power sports areas, stages	5,0	7,0
C5		areas for large gatherings, e.g. in buildings as concert halls, terraces, entrance halls as well as tribunes with firm seating	5,0	4,0
D1	sales rooms	sales rooms up to 50 m ² net area within residential or office buildings or similar	2,0	2,0
D2		areas in retail and department stores	5,0	4,0
D3		as D2, but with increased point loads due to high storage racks	5,0	7,0

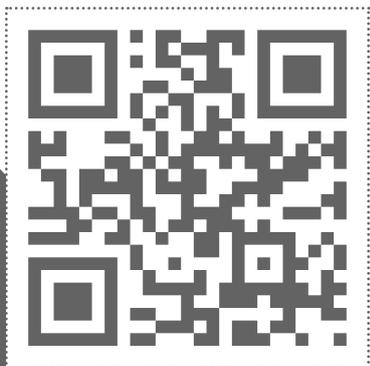
excerpt from survey report of MPA Stuttgart, on the basis of DIN 1055 part 3, edition 2002

The matching especially with the according current edition of DIN EN 1991-1-1 and DIN EN 1991-1-1/NA is necessary!





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