



**The innovative  
product line with**

More functions

More performance

More security



# fischer DUO-Line

More power, more intelligence



# DUO-Line – Intelligent combinations for more power and intelligence.



## More component technology

The component materials used are selected to optimally support the appropriate functional requirements.



## More function

Various product functions are combined in one product. The most suitable function for the specific building material is always automatically activated.



## More benefits

The innovative combination of materials and functions provides new and additional applications compared to standard products.



## More colourful

The red colour completes the functional design and makes the DUO-Line easily recognizable.



## More ease of installation

Installation is always easily done, without special tools and so saving time and costs.



## More performance

The clever combination of materials and functions leads to higher loads and so more security.



» Cleverly combined, very well rewarded «

*Due to its convincing innovative performance in regards to design and expertise in plastic technology, DUOPOWER has already received numerous awards.*







## DUOPOWER

The plug with superior performance  
in a wide variety of building materials

- Two component materials create even more expansion volume and an optimally coordinated screw-in and tightening torque.
- Expands in solid building materials, folds open in hollow building materials and knots in panel building materials.
- Automatically adapts itself to the requirements of the respective building material and therefore is extremely versatile to use.
- Due to the compact and short shape, it needs significantly less drilling effort and shorter screws can be used.
- A plug for numerous applications with top load values in a wide variety of building materials.



Intelligent self-activating functions depending on the base material.





» Simply clever, the combination  
of two components guarantees  
even better performance. «

Long version

## DU»POWER

The long versions for even more bite  
in problematic building materials

- Two component materials for even more expansion volume and an optimally coordinated screw-in and tightening torque despite deeper anchorage.
- Three plug zones: Tip, shaft and base with differently arranged expansion and fold out functions for more bite and higher pull-out values.
- Automatically adapts itself to the requirements of each building material. Ensures excellent holding thanks to its longer anchorage depth.
- A plug for numerous applications with high load capacity in problematic building materials, e.g. perforated building materials, aerated concrete or for plaster bridging.



Long versions with additional bite in problematic building materials.





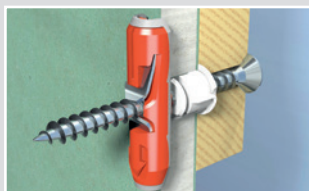


» Intelligent combination for high loads in all panel building materials.«

## DUOTEC 10

Solves difficult installation tasks in drywall building materials

- Two component toggle element (hard / soft) and flange sleeve made of glass fibre-reinforced plastics ensure high tensile and transverse loads.
- Folds out in cavities behind panel building materials, even in ones insulated with mineral wool. Expands in solid building materials such as wood or concrete.
- Due to its flexible screw insert suitable for screws and hooks with different thread types.
- Simple installation with the aid of a standard diameter 10 mm drill bit.
- A cavity toggle with high load bearing capability in dry wall materials, especially gypsum plasterboard and gypsum fibreboard.



Ideal toggle plug for drywall building panels, or also as expansion plug in solid materials.





## Additional features of DUOTEC 12



Metal insert for higher  
tensile loads.



Scale to determine the  
necessary screw length.



Release button for quick  
installation of long screws.

## Metal reinforced version

# DUOTEC 12

Extra strong for all panel building  
materials

- The two component toggle element (hard / soft) and flange sleeve made of glass fibre-reinforced plastics ensure high tensile and transverse loads.
- Extra strong because of its metal skeleton insert.
- Folds out in cavities behind panel building materials, even in ones insulated with mineral wool, or hollow concrete blocks. Expands in solid building materials such as wood or concrete.
- Due to its flexible screw insert suitable for screws and hooks with different thread types.
- Simple installation with the aid of a standard diameter 12 mm drill bit.
- A cavity toggle with high load bearing capability in all panel building materials but also hollow blocks made of lightweight concrete.



Strong toggle plug for all board materials able to handle high loads, or hollow bricks made from concrete.

## Recommendations

### DUOPOWER building material recommendation



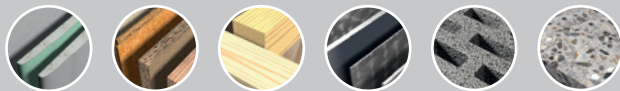
- Suitable for concrete, solid brick, solid sand-lime brick, aerated concrete, vertically perforated brick, perforated sand-lime brick, gypsum plasterboard, gypsum plasterboard and gypsum fibreboard, hollow block made of lightweight concrete, cavity floor slabs made of brick, prestressed hollow-core concrete floor slab, or similar, natural stone, chipboard, solid gypsum panels, solid brick made from lightweight concrete.

### DUOPOWER material properties



- Two component injection moulding for thermal combining of hard and soft plastic.

### DUOTEC building material recommendation












- Suitable for all panel building materials, for example: gypsum plasterboard, gypsum fibreboard, OSB boards, chipboard, MDF sheets, plywood boards, steel panels, plastic boards etc. Hollow blocks made of lightweight concrete.
- Also suitable for drill-holes in wood substructures or concrete.

### DUOTEC material properties



- The plastics of all components are extra glass-fibre reinforced.

### Examples of highest recommended loads [kg] DUOPOWER and DUOTEC

	Solid brick						Panel building materials		
									
Type	Concrete	Wood	Solid brick	Perforated brick	Hollow blocks made of lightweight concrete	Aerated concrete	OSB-plates	Gypsum fibreboard	Gypsum plasterboard
							18 mm <sup>2)</sup>	12,5 mm <sup>2)</sup>	12,5 mm <sup>2)</sup>
<b>DUOPOWER 8 x 40 <sup>1)</sup></b>	110	-	62	25	-	10	-	35	15
<b>DUOTEC 10 with screw Ø 5 mm</b>	75	75	-	-	-	-	75	51	20
<b>DUOTEC 12 with screw Ø 6 mm</b>	75	65	-	-	100	-	130	51	20

<sup>1)</sup> The load bearing values are reference values of the DUOPOWER 8 x 40 and dependent on building material and its processing.

Valid in combination with wood screws having a diameter of 6 mm.

<sup>2)</sup> Recommended loads in the respective base material for plate span 625 mm.



# Applications

## DUOPOWER and DUOTEC applications



Kitchen cabinets



Shower cubicles



Washbasins



Handrails



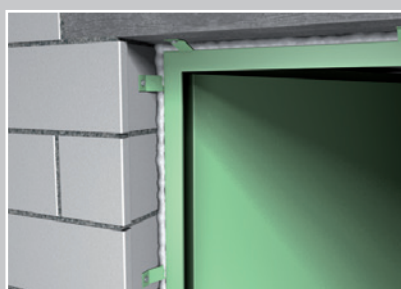
Wardrobes



Radiators



Lamps



Steel doors



Shelves



Pictures



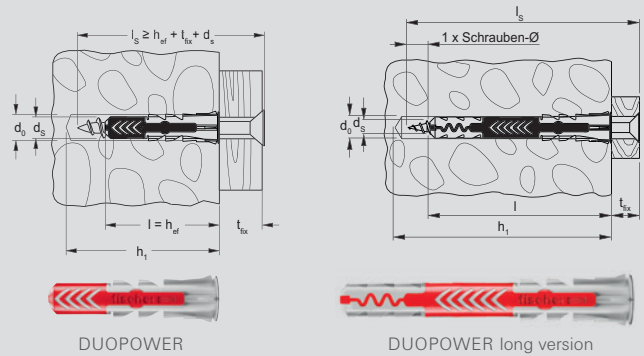
TV consoles



Hanging baskets

# Product selection and loads

## DUOPOWER



Item	Without screw	With screw	Drill hole diameter	Min. drill hole depth	Min. panel thickness	Anchor length	Wood and chip-board screws	Max. fixture thickness	Sales unit
	Art-No.	Art-No.	d <sub>0</sub>	h <sub>1</sub>	d <sub>p</sub>	l	d <sub>s</sub> / d <sub>s</sub> x l <sub>s</sub>	t <sub>fix</sub>	
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[pcs]
<b>DUOPOWER 5 x 25</b>	555005		5	35	12,5	25	3 - 4	-	100
<b>DUOPOWER 5 x 25 S</b>	-	555105	5	35	12,5	25	4 x 35	6	50
<b>DUOPOWER 6 x 30</b>	555006	-	6	40	12,5	30	4 - 5	-	100
<b>DUOPOWER 6 x 30 S</b>	-	555106	6	40	12,5	30	4,5 x 40	5	50
<b>DUOPOWER 6 x 50</b>	538240	-	6	60	12,5	50	4 - 5	-	100
<b>DUOPOWER 6 x 50 S</b>	-	538245	6	75	12,5	50	4,5 x 70	15	50
<b>DUOPOWER 8 x 40</b>	555008	-	8	50	12,5	40	4,5 - 6	-	100
<b>DUOPOWER 8 x 40 S</b>	-	555108	8	60	12,5	40	5 x 60	15	50
<b>DUOPOWER 8 x 65</b>	538241	-	8	75	2 x 12,5	65	4,5 - 6	-	50
<b>DUOPOWER 8 x 65 S</b>	-	538246	8	85	2 x 12,5	65	5 x 80	10	25
<b>DUOPOWER 10 x 50</b>	555010	-	10	60	-	50	6 - 8	-	50
<b>DUOPOWER 10 x 50 S</b>	-	555110	10	70	-	50	7 x 70	13	25
<b>DUOPOWER 10 x 80</b>	538242	-	10	90	-	80	6 - 8	-	25
<b>DUOPOWER 10 x 80 S</b>	-	538247	10	112	-	80	7 x 107	20	10
<b>DUOPOWER 12 x 60</b>	538243	-	12	70	-	60	8 - 10	-	25
<b>DUOPOWER 12 x 60 S</b>	-	538248	12	85	-	60	8 x 80	12	10
<b>DUOPOWER 14 x 70</b>	538244	-	14	80	-	70	10 - 12	-	25
<b>DUOPOWER 14 x 70 S</b>	-	538249	14	100	-	70	10 x 95	15	10

### Highest recommended loads<sup>1)</sup> for a single anchor

The given loads are valid for screws with the specified diameter.

Type			5 x 25	6 x 30	6 x 50	8 x 40	8 x 65	10 x 50	10 x 80	12 x 60	14 x 70
<b>Screw diameter <sup>3)</sup></b>	<b>Ø</b>	<b>[mm]</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>8</b>	<b>8</b>	<b>10</b>	<b>12</b>
<b>Min. edge distance concrete</b>	<b>c<sub>min</sub></b>	<b>[mm]</b>	<b>30</b>	<b>35</b>	<b>35</b>	<b>50</b>	<b>50</b>	<b>65</b>	<b>65</b>	<b>80</b>	<b>100</b>
<b>Recommended load in building material F<sub>rec</sub><sup>2)</sup></b>											
Concrete	≥ C20/25	[kN]	0.40	0.95	1.65	1.10	2.30	2.15	4.20	3.30	5.30
Solid brick	≥ Mz 12	[kN]	0.30	0.50	0.55	0.62	0.69	1.20	1.45	1.30	1.35
Solid sand-lime brick	≥ KS 12	[kN]	0.50	1.00	1.60	1.25	2.25	2.20	3.85	2.80	4.50
Aerated concrete	≥ PB2, PP2 (G2)	[kN]	0.05	0.10	0.15	0.10	0.16	0.20	0.30	0.24	0.35
Aerated concrete	≥ PB4, PP4 (G4)	[kN]	0.25	0.38	0.55	0.42	0.60	0.60	1.10	1.00	1.45
Vertically perforated brick	≥ Hlz 12 (ρ ≥ 0.9 kg/dm³)	[kN]	0.13	0.15	0.17	0.25	0.40	0.25	0.40	0.35	0.40
Perforated sand-lime brick	≥ KSL 12 (ρ ≥ 1.6 kg/dm³)	[kN]	0.40	0.60	0.60	0.70	1.00	0.70	2.00	0.75	1.50
Gypsum plasterboard	(ρ ≥ 0.9 kg/dm³)	[kN]	0.10	0.18	0.37	0.25	0.50	0.35	0.65	0.50	0.50
Gypsum fibreboard	12.5 mm	[kN]	0.24	0.33	0.35	0.35	-	0.50	-	-	-
Gypsum plasterboard	12.5 mm	[kN]	0.12	0.15	0.15	0.15	-	0.15	-	-	-
Gypsum plasterboard	2x12.5 mm	[kN]	0.13	0.15	0.24	0.20	0.32	0.30	-	-	-

<sup>1)</sup> Required safety factor taken into account.

<sup>2)</sup> The load data are valid for tension load, shear load and diagonal pull at every angle.

<sup>3)</sup> Wood screw

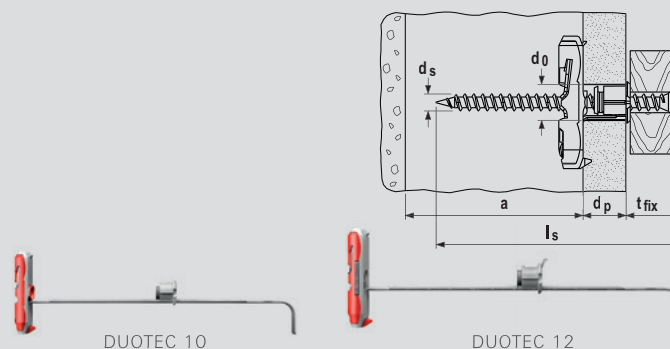
<sup>4)</sup> Load calculation done on plastered wall.



# Product selection and loads

## DUOTEC

### Panel building materials



Item	Art.-No.	Drill hole diameter $d_0$ [mm]	Min. panel thickness $d_p$ [mm]	Max. panel thickness $d_p$ [mm]	Min. cavity depth $a$ [mm]	Screw diameter $d_s$ [mm]	Screw length $l_s$ [mm]	Sales unit [pcs]
<b>DUOTEC 10</b>	537258	10	9,5	55	40	4,5 – 5	$\geq d_p + t_{fix} + 20$	50
<b>DUOTEC 10 S</b>	537259 <sup>1)</sup>	10	9,5	55	40	5	70	25
<b>DUOTEC 10 S PH</b>	539025 <sup>2)</sup>	10	9,5	55	40	5	70	25
<b>DUOTEC 12</b>	542796	12	9,5	55	50	5 – 6 / M6	$\geq d_p + t_{fix} + 20$	10
<b>DUOTEC 12 S PH</b>	542797 <sup>3)</sup>	12	9,5	55	50	M6	70	10
<b>DUOTEC 12 RH</b>	542798 <sup>4)</sup>	12	9,5	55	50	5,5	55	10

<sup>1)</sup> DUOTEC S – with chipboard screw countersunk head

<sup>2)</sup> DUOTEC S PH – with chipboard screw panhead

<sup>3)</sup> DUOTEC S PH – with machine screw panhead

<sup>4)</sup> DUOTEC RH – with screw with round hook

### Solid building materials

Item	Art.-No.	Drill hole diameter $d_0$ [mm]	Min. drill hole depth $h_1$ [mm]	Screw diameter $d_s$ [mm]	Screw length $l_s$ [mm]	Anchor length $l$ [mm]	Max. fixture thickness $t_{fix}$ [mm]	Sales unit [pcs]
<b>DUOTEC 10</b>	537258	10	$l_s + 10$	4,5 – 5	$\geq t_{fix} + 60$	50	$l_s - 60$	50
<b>DUOTEC 10 S</b>	537259	10	80	5	70	50	10	25
<b>DUOTEC 10 S PH</b>	539025	10	80	5	70	50	10	25
<b>DUOTEC 12</b>	542796	12	80	5-6 / M6	$\geq t_{fix} + 70$	58	$l_s - 70$	10
<b>DUOTEC 12 S PH</b>	542797 <sup>1)</sup>	–	–	–	–	–	–	10
<b>DUOTEC 12 RH</b>	542798	12	80	5,5	55	58	–	10

<sup>1)</sup> Installation with panhead screws in solid construction materials not possible.

### Highest recommended loads<sup>1) 4)</sup> for a single anchor

Type			DUOTEC 10				DUOTEC 12			
			Chipboard screw		Metrical screw	fischer Hook	Chipboard screw		Metrical screw	fischer Hook
Screw diameter	[mm]		4,5	5	5	5	5	6	6	5,5
<b>Recommended loads in the respective base material <math>F_{rec}^{2)}</math> for a span in the construction <math>b = 625</math> mm</b>										
Gypsum plasterboard	9,5 mm	[kN]	0,17	0,17	0,17	0,17	0,17	0,17	0,17	0,17
Gypsum plasterboard	12,5 mm	[kN]	0,20	0,20	0,20	0,20	0,20	0,20	0,20	0,20
Gypsum plasterboard	2 x 12,5 mm	[kN]	0,43	0,43	0,43	0,30 <sup>3)</sup>	0,43	0,43	0,43	0,43
Gypsum plasterboard	12,5 mm	[kN]	0,51	0,51	0,51	0,30 <sup>3)</sup>	0,51	0,51	0,51	0,50 <sup>3)</sup>
Chipboard	16 mm	[kN]	0,71	0,71	0,71	0,30 <sup>3)</sup>	0,75	0,80	0,80	0,50 <sup>3)</sup>
OSB board	18 mm	[kN]	0,75	0,75	0,75	0,30 <sup>3)</sup>	0,75	1,30	1,20	0,50 <sup>3)</sup>
<b>Recommended loads in the respective base material <math>F_{rec}^{2)}</math> for a span in the construction <math>b = 120</math> mm</b>										
Gypsum plasterboard	9,5 mm	[kN]	0,20	0,20	0,20	0,20	0,20	0,20	0,20	0,20
Gypsum plasterboard	12,5 mm	[kN]	0,36	0,36	0,36	0,30 <sup>3)</sup>	0,36	0,36	0,36	0,20
Gypsum plasterboard	2 x 12,5 mm	[kN]	0,59	0,59	0,59	0,30 <sup>3)</sup>	0,70	0,80	0,80	0,50 <sup>3)</sup>
Gypsum fibreboard	12,5 mm	[kN]	0,75	0,75	0,75	0,30 <sup>3)</sup>	0,80	1,10	1,10	0,50 <sup>3)</sup>
Chipboard	16 mm	[kN]	0,75	0,75	0,75	0,30 <sup>3)</sup>	0,80	1,40	1,30	0,50 <sup>3)</sup>
OSB board	18 mm	[kN]	0,75	0,75	0,75	0,30 <sup>3)</sup>	0,80	1,50	1,40	0,50 <sup>3)</sup>
<b>Recommended loads in solid building materials <math>F_{rec}^{2)}</math></b>										
Concrete	$\geq C20/25$	[kN]	0,45	0,75	–	0,30 <sup>3)</sup>	0,40	0,75	–	0,30
Wood		[kN]	0,30	0,75	–	0,30 <sup>3)</sup>	0,20	0,65	–	0,30
<b>Recommended loads in the respective base material <math>F_{rec}^{2)}</math></b>										
Hollow block of lightweight aggregate concrete „Sapa Parpaing“	$fb \geq 8$ N/mm <sup>2</sup>	[kN]	–	–	–	–	0,65	1,00	1,00	0,50 <sup>3)</sup>
Pre-stressed hollow-core concrete slabs			–	–	–	–	1,00	1,40	1,30	0,50 <sup>3)</sup>
Hollow block of lightweight aggregate concrete Hbl acc. EN 771-3	$fb \geq 2$ N/mm <sup>2</sup>	[kN]	–	–	–	–	0,90	1,00	1,00	0,50 <sup>3)</sup>

<sup>1)</sup> Required safety factors are considered.

<sup>2)</sup> Valid for tensile load, shear load and oblique load under any angle.

<sup>3)</sup> Bending of the hook is decisive. Only for tension load.

<sup>4)</sup> The recommended loads are reference values and depending to the building material and the workmanship. The values are only valid for the given screw diameter.

# fischer FIXPERIENCE

## The design and information software suite



- The modular design program includes engineering software and application modules.
- The software is based on international design standards (ETAG 001 and EC2, such as EC1, EC3 and EC5), including the national application documents. All common force and measurement units are available.
- Incorrect input will be recognized and the software gives tips to get a correct result. This ensures a safe and reliable design every time.
- The graphical display can easily be rotated through 360°, panned, tilted or zoomed as required.
- The 3D display gives a detailed and realistic image.
- The "live update" feature helps to keep the program up to date ensuring you are always working with the latest version.
- Free download and updates at [www.fischer.de/fixperience-en](http://www.fischer.de/fixperience-en)

## Our service to you



We are available to you at any time as a reliable partner to offer technical support and advice:

- Our products range from chemical resin systems to steel anchors through to nylon anchors.
- Competence and innovation through own research, development and production.
- Global presence and active sales service in over 100 countries.
- Qualified technical consulting for economical and compliant fastening solutions. Also on-site at the construction site if requested.
- Training sessions, some with accreditation, at your premises or at the fischer ACADEMY.
- Design and construction software for demanding applications.

## This is what fischer stands for



FIXING SYSTEMS



AUTOMOTIVE SYSTEMS



FISCHERTECHNIK



CONSULTING

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