

fischer 

DuoLine.
The Duo of Power
and Intelligence.



NEW! DuoHM. One panel plug for all common building material thicknesses.

DuoLine – Intelligent combinations for more power and intelligence.



More component technology

The used materials are selected in such way that the respective functional requirements are optimal supported.



More function

Different functional principles were combined in one product in a way that the most suitable function for the building material activates itself always automatically.



More benefits

From the innovative combination of materials and functions, there are always new and additional application possibilities compared to conventional solutions.



More colourful

The colour combination red-grey highlights the functionally optimized design and creates a high recognition value.



More ease of installation

The installation occurs always in an easy way, without any special tools and saves therefore time and costs.



More performance

The clever combination of materials and functions leads to more holding force and therefore also to more safety.

»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 in red and grey for even more expansion volume and an optimally coordinated screw-in and tightening torque.
- Expands in solid building materials, folds 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.
- A plug for numerous applications with top load values in a wide variety of building materials.
- European Technical Assessment (ETA) for certain DuoPower dimensions for maximum safety in concrete and masonry (see load table).
- Due to the compact and short shape, it needs significantly less drilling effort and shorter screws can be used.



Intelligent self-activating functions depending on the base material.

Certificates / Features



ETA-22/0512 for multiple non-structural systems in concrete and masonry



The long versions for even more bite in problematic building materials.

- Two component materials in red and grey 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 folding 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.

Certificates / Features



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



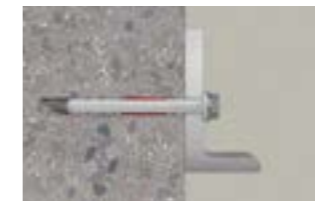
» Anchoring with a smart bite, thanks to innovative combination of material and design.«

DuoXpand



Clever combination of material and design.

- The special lamella geometry expands gently in the respective building material. This avoids fractures in porous building materials and enables anchoring close to the edge.
- The European Technical Assessment (ETA) for multiple use for non-structural applications ensures secure hold in all building material classes.
- The DuoXpand is suitable for push-through installation.
- In perforated bricks, the lamellas expand at the stone web and form an undercut in the cavity. The anchor geometry ensures that the force is transferred evenly to the material, so that porous stone webs are not destroyed.
- The version with countersunk screw is particularly suitable for fastening timber to concrete and masonry. For fixing metal, the version with a wide sleeve rim and a hexagon head screw with moulded washer is recommended.
- The frame fixing DuoXpand 10 with lengths 80, 100, 180 und 200 mm is suitable for anchoring under seismic influence in hollow brick masonry.



Application in solid material



Application in perforated material

Certificates / Features



ETA-21/0324 for redundant non-structural systems in concrete and masonry



ETA-22/0186 Seismic action





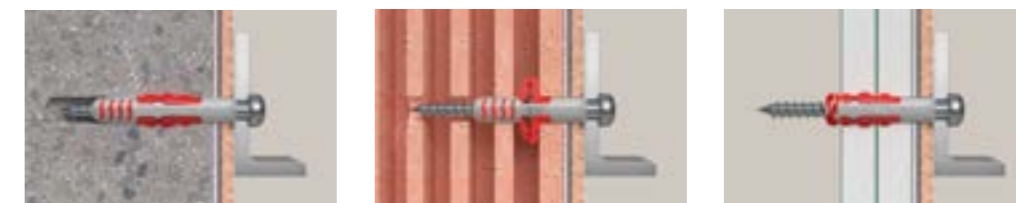
DuoSeal



Reliable sealing in wet areas is mandatory in accordance with the requirements of DIN 18534 and ETAG 022. Until now, these drill holes have always been sealed with silicone or other sealing compounds at great expense. This not only causes additional costs, but is also very time-consuming. In addition, silicone does not comply with the above-mentioned sealing standards, as this is only a temporary solution and must be regularly reworked. With the fischer DuoSeal and the matching stainless steel screw, drill holes can be sealed watertight in wet areas for the first time without additional sealant.

The sealing plug for wet areas.

- The DuoSeal completely seals drill holes in tiles without additional sealing compound and thus prevents structural damage caused by moisture in the building material.
- The DuoSeal is ideally suited for tiled surfaces which are exposed to very frequent splash water and temporarily accumulated water. In any case, please take note of the general national regulations on the use of plugs in wet areas.
- The universal plug can be installed gently on tiles with very little effort.
- Its red component ensures a secure hold in all building materials. Thus, the DuoSeal achieves the same load values as conventional nylon plugs.
- The stainless steel screw included in the set is ideally suited for installations in wet areas and avoids rusting.
- The soft plastic rim closes the drill hole completely and flexibly adapts to the shape of the attachment part.



Excellent for many building materials with tiled surfaces.

» The sealing plug for wet areas.«

Certificates / Features





fischer DuoTec 10



Solves difficult installation tasks in drywall building materials.

- Two component toggle element in red and grey (hard/soft) and flange sleeve made of glass fibre-reinforced plastics ensure high tensile and transverse loads.
- Folds in cavities behind panel building materials, even in ones insulated with mineral wool. Expands in solid building materials such as wood or concrete.
- Suitable for screws and hooks with different thread types due to its flexible screw insert.
- 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 in gypsum plasterboard and gypsum fibreboard.



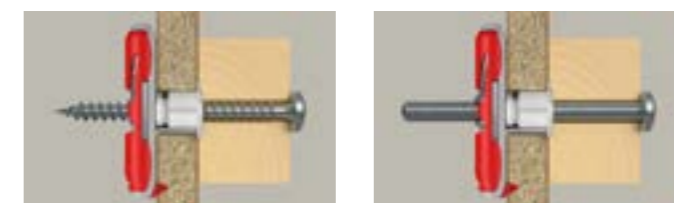
Ideal toggle plug for drywall building panels, or also as expansion plug in solid materials.

fischer DuoTec 12



Extra strong for all panel building materials.

- The two component toggle element in red and grey (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 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.
- Suitable for screws and hooks with different thread types due to its flexible screw insert.
- 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.

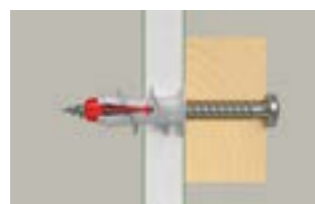
» Intelligent combination for high loads in all panel building materials.«



DuoBlade

The self-drilling plasterboard plug for fast and easy installation.

- The self-drilling fischer DuoBlade allows fast and easy installation in gypsum plasterboard and gypsum fibreboard.
- PZ2 drive – same drive for plug and screw.
- High torque when anchor is installed for the feelgood-factor and an optimum feeling when setting.
- The black metal tip guarantees simple and safe installation.
- The fischer DuoBlade is adapted for wood, metal and chipboard screws from 4 to 5 mm thickness as well as different hooks like the EasyHook.
- In gypsum fibreboard, pre-drilling with a drill \varnothing 8mm is recommended.



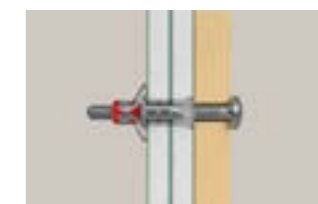
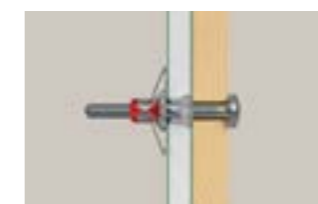
Fixing in plasterboard.



DuoHM






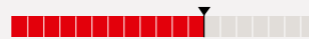






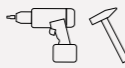
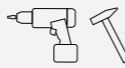



The panel plug for all common building material thicknesses.








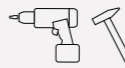

- The DuoHM is suitable for panel thicknesses from 9.5 – 30 mm.
- The metal sleeve folds behind the building material and presses against the back of the panel, the nylon base body knots in the building material.
- Installation is only complete when the tightening torque is clearly noticeable and the metal sleeve is fully pressed against the panel.
- Thanks to the metric internal thread, the attachment can be fastened and unfastened several times and released again.



One plug length covers all common building material thicknesses from 9.5 - 30 mm, for flexible and cost-efficient application.

Recommendation

Selection guide	DuoXpand	DuoPower	DuoSeal
			
Product features	The clever frame fixing plug	The universal plug for all building materials	The sealing plug
Building materials	Concrete ≥ C12/15 Solid brick Solid sand-lime brick Solid block made of lightweight and normal concrete Vertically perforated brick Perforated sand-lime brick Hollow block made of lightweight concrete Aerated concrete	Concrete Solid brick Aerated concrete Vertically perforated brick Plasterboard Chipboard Plywood board Hardboard Gypsum fibreboard	Concrete Solid brick Solid sand-lime brick Perforated brick Perforated sand-lime brick Aerated concrete Gypsum plasterboard Gypsum fibreboard Chipboard
Loads solid building material			
Loads hollow building material			
Loads panel building materials	-		
Application in outdoor areas	Yes, with stainless steel screw	Yes, with stainless steel screw	Yes
Connection type / head shape	Countersunk head screw Hexagon head screw with moulded-on washer	Chipboard screw	Countersunk head screw
Installation type	Push-through installation	Push-through and pre-insert installation	Pre-insert installation
Installation tool			
Disassembly	-	Flush surface disassembly	Flush surface disassembly
Approval			

DuoTec	DuoHM	DuoBlade
		
The strong panel plug	The efficient cavity plug	The fast plasterboard plug
Gypsum plasterboard Gypsum fibreboard Chipboard Plywood board Hardboard Gypsum fibreboard OSB board Steel panels Plastic panels	Plasterboard Chipboard Plywood board Hardboard Gypsum fibreboard OSB board	Gypsum plasterboard Gypsum fibreboard Lightweight cement board
-	-	-
-	-	-
		
-	-	-
Chipboard screw Metric screw	Metric screw	Chipboard screw
Pre-insert installation	Pre-insert installation	Pre-insert installation
		
Flush surface disassembly	Flush surface disassembly	Yes
-	-	-

Applications

DuoPower



Consoles



Pipe fastenings



Radiators

DuoHM



TV brackets

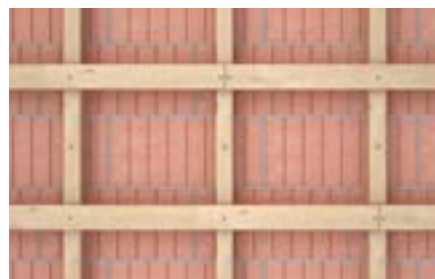


Shelves



Mirror cabinets

DuoXpand



Timber substructures



Carports



TV brackets

fischer DuoTec



Kitchen cabinets



Mirrors



TV-Board

fischer DuoBlade



Smoke detectors



Lamps



Curtain rods

DuoSeal · Tiled surfaces with frequent exposure to water



Furnishing of bathrooms

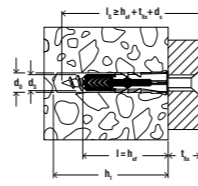


Wall fixings in garages



Accessories inside the shower

Assortment DuoPower



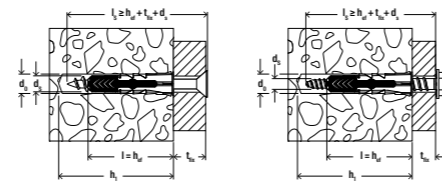
DuoPower



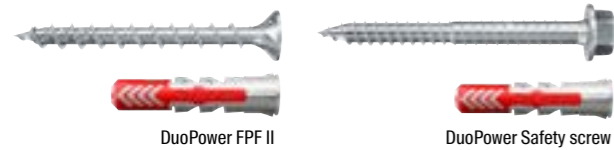
DuoPower DuoPower long

Item	Without screw Item No.	With screw Item No.	Drill hole diameter	Min. drill hole depth	Min. panel thickness	Min. bolt penetration	Anchor length	Screws	Drive	Max. fixture thickness	Sales unit
			d ₀ [mm]	h ₁ [mm]	d _p [mm]	l _{E,min} [mm]	l [mm]	d _S / d _S x l _S [mm]	t _{fix} [mm]	[pcs]	
DuoPower 5 x 25	555005	-	5	35	12,5	29	25	3 - 4	-	-	100
DuoPower 6 x 30	555006	-	6	40	12,5	35	30	4 - 5	-	-	100
DuoPower 6 x 50	538240	-	6	60	12,5	55	50	4 - 5	-	-	100
DuoPower 8 x 40	555008	-	8	50	12,5	46	40	4,5 - 6	-	-	100
DuoPower 8 x 65	538241	-	8	75	2x 12,5	71	65	4,5 - 6	-	-	50
DuoPower 10 x 50	555010	-	10	70	12,5	58	50	6 - 8	-	-	50
DuoPower 10 x 80	538242	-	10	100	-	88	80	6 - 8	-	-	25
DuoPower 12 x 60	538243	-	12	80	-	70	60	8 - 10	-	-	25
DuoPower 14 x 70	538244	-	14	90	-	82	70	10 - 12	-	-	20
DuoPower 5 x 25 S	-	555105	5	40	12,5	29	25	3,5 x 35	PZ2	6	50
DuoPower 6 x 30 S	-	555106	6	45	12,5	35	30	4,5 x 40	PZ2	5	50
DuoPower 6 x 30 S PH TX	-	545838 ¹⁾	6	45	12,5	35	30	4,5 x 40	TX 20	5	100
DuoPower 6 x 50 S	-	538245	6	65	12,5	55	50	4,5 x 60	PZ2	15	50
DuoPower 8 x 40 S	-	555108	8	65	12,5	45	40	5,0 x 55	PZ2	10	50
DuoPower 8 x 65 S	-	538246	8	85	2x 12,5	70	65	5,0 x 80	PZ2	10	25
DuoPower 10 x 50 S	-	555110	10	74	12,5	57	50	7,0 x 69	SW 13/TX 40	12	25
DuoPower 10 x 80 S	-	538247	10	112	-	87	80	7,0 x 107	SW 13	20	10
DuoPower 12 x 60 S	-	538248	12	85	-	68	60	8,0 x 80	SW 13	12	10

¹⁾ DuoPower S PH TX with chipboard screw panhead



DuoPower ETA



DuoPower FPF II DuoPower Safety screw

Item	Item No.	Approval ETA	Drill hole diameter	Min. drill hole depth ¹⁾	Min. bolt penetration	Anchor length	Screw	Drive	Max. fixture thickness ²⁾	Sales unit
			d ₀ [mm]	h ₁ [mm]	l _{E,min} [mm]	l [mm]	d _S / d _S x l _S [mm]	t _{fix} [mm]	[pcs]	
DuoPower ETA 8 x 40 FPF II ³⁾	564789	●	8	69	46	40	6,0 x 60	TX 30	14	50
DuoPower ETA 8 x 40 Safety screw	564790	●	8	76	46	40	6,0 x 66,5	SW 10/TX 30	20	50
DuoPower ETA 10 x 50 Safety screw	564792	●	10	78	57	50	7,0 x 69	SW 13/TX 40	12	50

¹⁾ Min. drill hole depth h₁ [mm] = l_S - t_{fix} + 10

²⁾ Max. fixture thickness t_{fix} [mm] = l_S - l - d_S

³⁾ Power Fast II screw

Loads DuoPower

DuoPower

Highest recommended loads¹⁾ for a single anchor. The given loads are valid for wood 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	
Wood screw diameter	[mm]	4	5	5	6	6	8	8	10	12	
Min. edge distance concrete	c _{min} [mm]	30	35	35	50	50	65	65	80	100	
Recommended loads in the respective base material F _{rec} ²⁾											
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	≥ AAC 2 (G2)	[kN]	0.05	0.10	0.15	0.10	0.16	0.20	0.30	0.24	0.35
Aerated concrete	≥ AAC 4 (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/dm ³)	[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/dm ³)	[kN]	0.40	0.60	0.60	0.70	1.00	0.70	2.00	0.75	1.50
Gypsum block	(ρ ≥ 0,9 kg/dm ³)	[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	2 x 12.5 mm	[kN]	0.13	0.15	0.24	0.20	0.32	0.30	-	-	-
Mattone Forato Typ F8		[kN]	0.30	0.30	-	0.25	-	0.25	-	-	-
Tramezza Doppio UNI 19		[kN]	0.15	0.15	0.23	0.15	0.30	0.20	0.52	0.35	0.35
Sepa Parpaing		[kN]	0.30	0.45	0.25 ³⁾	0.45	0.45 ³⁾	0.45	0.45 ³⁾	0.60 ³⁾	0.60 ³⁾

¹⁾ Required safety factors are considered.

²⁾ Valid for tensile load, shear load and oblique load under any angle.

³⁾ Load determination on plastered wall.

Universal plug DuoPower

Permissible loads¹⁾²⁾³⁾ of a single anchor as part of a multiple fixing of non-structural systems. For the design the complete current assessment ETA-22/0512 of 04.11.2022 has to be considered.

Type		DuoPower ETA 8x40 Power Fast II	DuoPower ETA 8x40 special screw	DuoPower ETA 10x50 special screw	
Anchor diameter	d ₀	[mm]	8	8	10
Screw diameter	d	[mm]	6	6	7
Anchorage depth	h _{nom}	[mm]	40	40	50
Anchorage in concrete ≥ C16/20 ⁴⁾					
Permissible tensile load N _{perm}		[kN]	0.12	0.79	0.79
Permissible shear load V _{perm}	zinc coated screws (gvz)	[kN]	3.10	4.23	5.98
	stainless steel screw (R)	[kN]	-	3.93	5.98
Minimum member thickness	h _{min}	[mm]	150	150	150
Characteristic edge distance	c _{cr,N}	[mm]	55	90	80
Characteristic spacing	a resp. s _{cr,N}	[mm]	15	50	50
Minimum spacing with an edge distance	s _{min}	[mm]	50	50	50
Minimum edge distance with a spacing	c ≥	[mm]	100	100	100
Minimum edge distance with a spacing	s ≥	[mm]	100	160	160
Anchorage in masonry					
Permissible load ⁵⁾ F _{perm} in solid brick	≥ Mz 10/2; NF	[kN]	-	-	0.40
	≥ Mz 16/2; NF	[kN]	-	-	0.57
	≥ Mz 20/2; NF	[kN]	-	-	0.71
Permissible load ⁵⁾ F _{perm} in solid sand-lime brick	≥ KS 8/2; 2DF	[kN]	-	-	0.60
	≥ KS 12/2; 2DF	[kN]	-	-	0.60
Permissible load ⁵⁾ F _{perm} in perforated clay brick	≥ Hlz 10/1.2; 9 DF	[kN]	-	-	0.17
	≥ Hlz 12/1.2; 9 DF	[kN]	-	-	0.21
Minimum member thickness	h _{min}	[mm]	-	-	115
Minimum spacing (single anchor)	a _{min}	[mm]	-	-	250
Minimum spacing (anchor group)	s _{min}	[mm]	-	-	50
Minimum edge distance (anchor group)	c _{min}	[mm]	-	-	80

¹⁾ Valid for zinc coated (gvz) Power Fast II and special screw and as well as for special screw made of stainless steel (R). For exterior use of the zinc coated screws measures against incoming humidity have to be taken.

²⁾ The required partial safety factors for material resistance as well as a partial safety factor for load actions γ_L = 1.4 are considered. As a single anchor counts e.g. an anchor with a minimum spacing according to Annex B 2 or B 3 of the assessment.

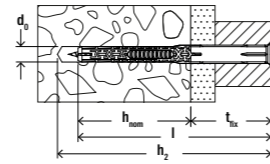
³⁾ Valid for temperatures in the substrate up to +24 °C (resp. short term up to +40 °C).

⁴⁾ For values in concrete C12/15 see assessment.

⁵⁾ Valid for tensile load, shear load and oblique load under any angle. For combinations of tensile loads, shear loads and bending moments see assessment. Bulk density of stone in [kg/dm³] and minimum compressive strength in [N/mm²] according to EN 771.

⁶⁾ Only valid for c_{1min} 110 mm and c_{2min} 165 mm.

Assortment DuoXpand

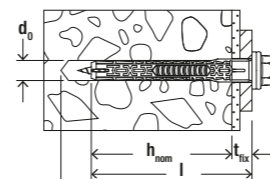


DuoXpand-T – with fischer countersunk head safety screw



DuoXpand T

Item	Item No.	Item No.	Approval	Drill hole diameter	Min. drill hole depth for through fixings	Usable length at anchorage depth				Anchor length	Drive	Sales unit	
						h _{nom} = 50 mm	h _{nom} = 70 mm	h _{nom} = 140 mm	h _{nom} = 160 mm				
Description	Zinc-plated steel	Stainless steel	ETA	d ₀	h ₂	t _{fix}					l		
	gvz	R		[mm]	[mm]							[pcs]	
DuoXpand 8x80 T	562149	-	●	8	90	30	10	-	-	80	T30	50	
DuoXpand 8x100 T	562150	-	●	8	110	50	30	-	-	100	T30	50	
DuoXpand 8x120 T	562151	-	●	8	130	70	50	-	-	120	T30	50	
DuoXpand 10x80 T	562155	562163	●	10	90	30	10	-	-	80	T40	50	
DuoXpand 10x100 T	562156	562164	●	10	110	50	30	-	-	100	T40	50	
DuoXpand 10x120 T	562157	562165	●	10	130	70	50	-	-	120	T40	50	
DuoXpand 10x140 T	562158	562166	●	10	150	90	70	-	-	140	T40	50	
DuoXpand 10x160 T	562159	-	●	10	170	110	90	20	-	160	T40	50	
DuoXpand 10x180 T	562160	-	●	10	190	130	110	40	20	180	T40	50	
DuoXpand 10x200 T	562161	-	●	10	210	150	130	60	40	200	T40	50	
DuoXpand 10x230 T	562162	-	●	10	240	180	160	90	70	230	T40	50	



DuoXpand-FUS – with fischer hexagon head safety screw with moulded washer and integrated bit recess



Item	Item No.	Item No.	Approval	Drill hole diameter	Min. drill hole depth for through fixings	Usable length at anchorage depth				Anchor length	Drive	Sales unit
						h _{nom} = 50 mm	h _{nom} = 70 mm	h _{nom} = 140 mm	h _{nom} = 160 mm			
Description	Zinc-plated steel	Stainless steel	ETA	d ₀	h ₂	t _{fix}					l	
	gvz	R		[mm]	[mm]							[pcs]
DuoXpand 8x80 FUS	562152	-	●	8	90	30	10	-	-	80	TX30/SW10	50
DuoXpand 8x100 FUS	562153	-	●	8	110	50	30	-	-	100	TX30/SW10	50
DuoXpand 8x120 FUS	562154	-	●	8	130	70	50	-	-	120	TX30/SW10	50
DuoXpand 10x80 FUS	562167	562175	●	10	90	30	10	-	-	80	TX40/SW13	50
DuoXpand 10x100 FUS	562168	562176	●	10	110	50	30	-	-	100	TX40/SW13	50
DuoXpand 10x120 FUS	562169	562177	●	10	130	70	50	-	-	120	TX40/SW13	50
DuoXpand 10x140 FUS	562170	562178	●	10	150	90	70	-	-	140	TX40/SW13	50
DuoXpand 10x160 FUS	562171	-	●	10	170	110	90	20	-	160	TX40/SW13	50
DuoXpand 10x180 FUS	562172	-	●	10	190	130	110	40	20	180	TX40/SW13	50
DuoXpand 10x200 FUS	562173	-	●	10	210	150	130	60	40	200	TX40/SW13	50
DuoXpand 10x230 FUS	562174	-	●	10	240	180	160	90	70	230	TX40/SW13	50

Loads DuoXpand

Frame fixing DuoXpand

Permissible loads¹⁾²⁾³⁾ of a single anchor as part of a multiple fixing of non-structural systems. For the design the complete current assessment ETA-21/0324 has to be considered.

Type		DuoXpand 8		DuoXpand 10	
Anchor diameter	d	[mm]			
Anchorage in concrete ≥ C16/20 ⁴⁾					
Anchorage depth	h _{nom} ≥	[mm]	50	70	50
Permissible tensile load N _{perm}		[kN]	1.39	1.59	1.59
Permissible shear load V _{perm}	zinc coated screws (gvz)	[kN]	4.23	4.23	5.98
	stainless steel screw (R)	[kN]	3.93	3.93	5.98
Minimum member thickness	h _{min}	[mm]	80	100	80
Characteristic edge distance	c _{cr,N}	[mm]	50	50	50
Characteristic spacing	a resp. s _{cr,N}	[mm]	65	70	70
Minimum spacing	s _{min}	[mm]	50	50	50
with an edge distance	c ≥	[mm]	100	100	100
Minimum edge distance	c _{min}	[mm]	50	50	50
with a spacing	s ≥	[mm]	100	100	100
Anchorage in masonry ⁵⁾⁶⁾					
Anchorage depth	h _{nom}	[mm]	50	70	50
Permissible load F _{perm} in solid brick Mz, e.g. Ziegelwerk Nordhausen	≥ NF; ≥ 10 [N/mm ²] / ρ ≥ 1.8 [kg/dm ³]	[kN]	0.43	0.43	0.26
	≥ NF; ≥ 20 [N/mm ²] / ρ ≥ 1.8 [kg/dm ³]	[kN]	0.86	1.00	0.57
Permissible load F _{perm} in solid sand-lime brick KS, e.g. Wemding	≥ NF; ≥ 10 [N/mm ²] / ρ ≥ 2.0 [kg/dm ³]	[kN]	0.43	0.57	0.57
	≥ NF; ≥ 20 [N/mm ²] / ρ ≥ 2.0 [kg/dm ³]	[kN]	1.00	1.14	1.14
Permissible load ⁷⁾ F _{perm} in lightweight concrete block Vbl, e.g. KLB	≥ 2 DF; ≥ 2 [N/mm ²] / ρ ≥ 1.4 [kg/dm ³]	[kN]	0.11	0.17	0.09
	≥ 2 DF; ≥ 4 [N/mm ²] / ρ ≥ 1.4 [kg/dm ³]	[kN]	0.21	0.34	0.17
Permissible load ⁷⁾ F _{perm} in vertically perforated brick HLz, e.g. Schlagmann	3 DF; ≥ 10 [N/mm ²] / ρ ≥ 0.9 [kg/dm ³]	[kN]	0.21	0.34	0.21
	3 DF; ≥ 12 [N/mm ²] / ρ ≥ 0.9 [kg/dm ³]	[kN]	0.26	0.43	0.26
Permissible load F _{perm} in perforated sand-lime brick KSL, e.g. Wemding	3 DF; ≥ 8 [N/mm ²] / ρ ≥ 1.4 [kg/dm ³]	[kN]	0.26	0.21	0.17
	3 DF; ≥ 16 [N/mm ²] / ρ ≥ 1.4 [kg/dm ³]	[kN]	0.43	0.43	0.34
Permissible load ⁷⁾ F _{perm} in hollow lightweight concrete blocks Hbl, e.g. Knobel, DE	16 DF; ≥ 2 [N/mm ²] / ρ ≥ 0.7 [kg/dm ³]	[kN]	0.14	0.14	0.21
	16 DF; ≥ 4 [N/mm ²] / ρ ≥ 0.7 [kg/dm ³]	[kN]	0.26	0.26	0.43
Permissible load ⁷⁾ F _{perm} in hollow lightweight concrete blocks Hbl, eg. Sepa Parpaing, FR	≥ 2 [N/mm ²] / ρ ≥ 1.0 [kg/dm ³]	[kN]	0.09	-	0.14
	≥ 4 [N/mm ²] / ρ ≥ 1.0 [kg/dm ³]	[kN]	0.21	0.14	0.26
Minimum member thickness	h _{min}	[mm]	115	115	115
Minimum spacing (single anchor)	a _{min}	[mm]	250	250	250
Minimum spacing (anchor group)	s _{min}	[mm]	100	100	100
Minimum edge distance (anchor group)	c _{min}	[mm]	100	100	100
Anchorage in aerated concrete ⁸⁾					
Anchorage depth	h _{nom} ≥	[mm]	70	-	70
Permissible load F _{perm} in aerated concrete, acc. to EN 771-4:2011+A1:2015	AAC 2	[kN]	0.11	-	0.14
	AAC 4	[kN]	0.27	-	0.21
	AAC 6	[kN]	0.54	-	0.32
Permissible load F _{perm} in reinforced aerated concrete, acc. to EN 12602:2016	AAC 4; f _{ck} ≥ 4 N/mm ²	[kN]	-	-	0.18
	AAC 6; f _{ck} ≥ 6 N/mm ²	[kN]	-	-	0.32
Minimum member thickness	h _{min}	[mm]	100 / 175 ⁸⁾	-	100 / 175 ⁸⁾
Minimum spacing (single anchor)	a _{min}	[mm]	250	-	250
Minimum spacing (anchor group)	s _{min}	[mm]	100 / 80 ⁸⁾	-	100 / 80 ⁸⁾
Minimum edge distance (anchor group)	c _{min}	[mm]	100	-	100

¹⁾ Valid for zinc coated screws (gvz) and for screws made of stainless steel (R). For exterior use of the zinc coated screws measures against incoming humidity according to assessment have to be taken.

²⁾ The required partial safety factors for material resistance as well as a partial safety factor for load actions γ_L = 1.4 are considered.

As a single anchor counts e.g. an anchor with a minimum spacing a according to the ETA.

³⁾ Valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). For long term temperatures up to +30 °C higher permissible loads may be possible.

⁴⁾ For concrete specifications in C12/15, see ETA.

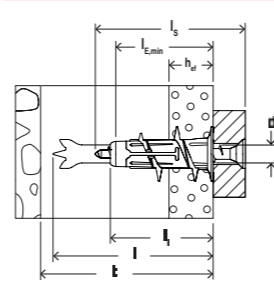
⁵⁾ Stone property data in min. compressive strength [N/mm²] and bulk density [kg/dm³]. Corresponding mean compressive strengths according to EN 771 and other brick variants or brick geometries are listed in the ETA.

⁶⁾ Load data are valid for tensile load, shear load and oblique load under any angle. For bending moments and invisible or not mortar-filled joints the design specifications of the ETA must be observed.

⁷⁾ Rotary drilling method.

⁸⁾ Only valid for groups of anchors in AAC with compression strength ≥ 6 N/mm².

Assortment & Loads DuoBlade



Plasterboard plug DuoBlade



DuoBlade

Item	Item no.	Min. thickness to first supporting layer t [mm]	Anchor length l [mm]	Anchor length without drill tip l ₁ [mm]	Anchorage depth h _{ef} [mm]	Min. bolt penetration l _{E,min} [mm]	Screw d _s /d _s x l _s [mm]	Drive	Sales unit [Stück]
DuoBlade	545675	50	44	29	9.5 - 25	28	4 - 5	PZ2	50
DuoBlade S	545676 ¹⁾	50	44	29	9.5 - 25	28	4.5 x 40	PZ2	25
DuoBlade K NV	545683	50	44	29	9.5 - 25	28	4 - 5	-	10
DuoBlade S K NV	545684 ¹⁾	50	44	29	9.5 - 25	28	4.0 x 46	PZ2	6
DuoBlade RH K NV	545686 ²⁾	50	44	29	9.5 - 25	28	4.5 x 40	-	6
DuoBlade WH K NV	545685 ³⁾	50	44	29	9.5 - 25	28	4.2 x 40	-	6

¹⁾ DuoBlade S - with chipboard screw countersunk head.

²⁾ DuoBlade RH - with round hook.

³⁾ DuoBlade WH - with angled hook.

Plasterboard fixing DuoBlade

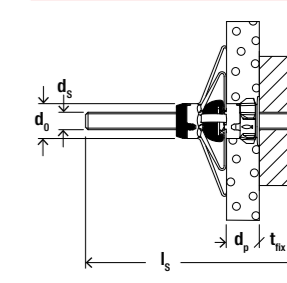
Recommended loads¹⁾ for a single anchor.

Type	Chipboard screw diameter [mm]	DuoBlade 4.0-5.0
Recommended loads in the respective base material F _{rec} ²⁾		
Gypsum plasterboard	9.5 mm	[kN] 0.08
Gypsum plasterboard	12.5 mm	[kN] 0.10
Gypsum plasterboard (e.g. Knauf Diamant board or Rigips Die Harte)	12.5 mm	[kN] 0.18
Gypsum plasterboard	2x 12.5 mm	[kN] 0.20
Lightweight cement board	12.5 mm	[kN] 0.08
Gypsum fibreboard	12.5 mm	[kN] 0.34

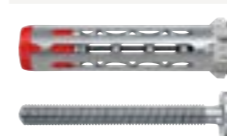
¹⁾ Required safety factors are considered. The given loads are valid for chipboard screws with the specified diameters.

²⁾ Valid for tensile load, shear load and oblique load under any angle.

Assortment & Loads DuoHM



DuoHM



DuoHM

Item	Item.-No.	Drill hole diameter d _o [mm]	Min. drill hole depth h ₁ [mm]	Anchor length l [mm]	Screw dimension d _s x l _s	Panel thickness d _p [mm]	Drive	Sales unit [pcs]
DuoHM 4x55 S PZ	572920	8	55	55	M 4x55	9,5 - 30	PZ2	25
DuoHM 5x55 S PZ	572921	10	55	55	M 5x55	9,5 - 30	PZ2	25
DuoHM 6x55 S PZ	572922	12	55	55	M 6x55	9,5 - 30	PZ3	25
DuoHM 4x55 S TX	572923	8	55	55	M 4x55	9,5 - 30	TX20	25
DuoHM 5x55 S TX	572924	10	55	55	M 5x55	9,5 - 30	TX25	25
DuoHM 6x55 S TX	572925	12	55	55	M 6x55	9,5 - 30	TX30	25

Cavity fixing DuoHM

Recommended loads¹⁾²⁾ for a single anchor.

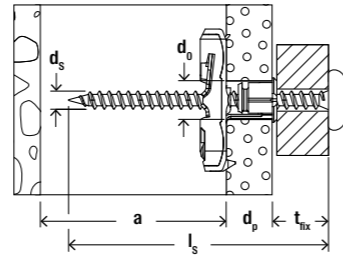
Type	DuoHM 4x55	DuoHM 5x55	DuoHM 6x55
Thread size			
	M4	M5	M6
Recommended loads in the respective base material F _{rec} ³⁾			
Gypsum plasterboard	9.5 mm	[kN] 0.15	0.15
Gypsum plasterboard	2 x 9.5 mm	[kN] 0.25	0.25
Gypsum plasterboard	12.5 mm	[kN] 0.20	0.20
Gypsum plasterboard	2 x 12.5 mm	[kN] 0.36	0.38
Gypsum plasterboard (e.g. Knauf Diamant or Rigips Die Harte)	12.5 mm	[kN] 0.36	0.38
Gypsum fiberboard	12.5 mm	[kN] 0.38	0.40
Chipboard	16 mm	[kN] 0.48	0.52
OSB-Board	15 mm	[kN] 0.52	0.54
OSB-Board	18 mm	[kN] 0.58	0.60
Gypsum plasterboard + OSB-Board	12.5 mm + 15 mm	[kN] 0.58	0.60

¹⁾ Required safety factors are considered.

²⁾ The recommended loads are reference values and depending to the building material and the workmanship.

³⁾ Valid for tensile load, shear load and oblique load under any angle.

Assortment fischer DuoTec



fischer DuoTec in gypsum board wall



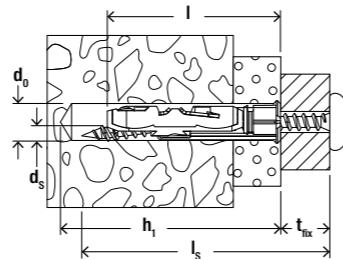
Item	Item no.	Drill hole diameter	Min. panel thickness	Max. panel thickness	Min. cavity depth	Screw diameter	Screw length	Sales unit
		d_0 [mm]	d_p [mm]	d_p [mm]	a [mm]	d_s [mm]	l_s [mm]	
fischer DuoTec 10 S	537259 ¹⁾	10	12	55	40	5.0	60	25
fischer DuoTec 10	537258	10	12	55	40	4.5 - 5	$\geq d_p + t_{fix} + 20$	50
fischer DuoTec 10 S PH	539025 ²⁾	10	12	55	40	5.0	60	25
fischer DuoTec 12	542796	12	12	55	50	5 - 6/M6	$\geq d_p + t_{fix} + 20$	10
fischer DuoTec 12 RH	542798 ⁴⁾	12	12	55	50	5.5	70	10

¹⁾ fischer DuoTec S – with chipboard screw countersunk head

²⁾ fischer DuoTec S PH – with chipboard screw Panhead

³⁾ fischer DuoTec S PH M – with machine screw Panhead

⁴⁾ fischer DuoTec RH – with screw with round hook



fischer DuoTec in solid brick



Item	Item no.	Drill hole diameter	Min. drill hole depth	Screw diameter	Min. screw length	Anchor length	Max. fixture thickness	Sales unit
		d_0 [mm]	h_1 [mm]	d_s [mm]	l_s [mm]	l [mm]	t_{fix} [mm]	
fischer DuoTec 10 S	537259 ¹⁾	10	65	5.0	60	50	27	25
fischer DuoTec 10	537258	10	$l_s - t_{fix} + 10$	4.5 - 5	$t_{fix} + 55$	50	$l_s - 55$	50
fischer DuoTec 10 S PH	539025 ²⁾	10	65	5.0	60	50	27	25
fischer DuoTec 12	542796	12	$l_s - t_{fix} + 10$	5 - 6	$t_{fix} + 65$	60	$l_s - 65$	10

¹⁾ fischer DuoTec S – with chipboard screw countersunk head

²⁾ fischer DuoTec S PH – with chipboard screw Panhead

³⁾ fischer DuoTec RH – with screw with round hook

Loads fischer DuoTec

Nylon toggle DuoTec

Recommended loads^{1) 2)} for a single anchor.

Type	[mm]	fischer DuoTec 10			fischer DuoTec 12		
		Chipboard screws		Metrical screw	Chipboard screws		Metrical screw
Screw diameter	[mm]	4.5	5.0	5.0	5.0	6.0	6.0
Recommended loads in the respective base material $F_{rec}^{3)}$ for a span in the construction $b = 625$ mm							
Gypsum plasterboard	9.5 mm	[kN]	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
Gypsum plasterboard	2x 12.5 mm	[kN]	0.43	0.43	0.43	0.43	0.43
Gypsum fibreboard	12.5 mm	[kN]	0.51	0.51	0.51	0.51	0.51
Chipboard	16 mm	[kN]	0.71	0.71	0.75	0.80	0.80
OSB board	18 mm	[kN]	0.75	0.75	0.75	1.30	1.30
Recommended loads in the respective base material $F_{rec}^{3)}$ for a span in the construction $b = 120$ mm							
Gypsum plasterboard	9.5 mm	[kN]	0.20	0.20	0.20	0.20	0.20
Gypsum plasterboard	12.5 mm	[kN]	0.36	0.36	0.36	0.36	0.36
Gypsum plasterboard	2x 12.5 mm	[kN]	0.59	0.59	0.70	0.80	0.80
Gypsum fibreboard	12.5 mm	[kN]	0.75	0.75	0.80	1.10	1.10
Chipboard	16 mm	[kN]	0.75	0.75	0.80	1.40	1.30
OSB board	18 mm	[kN]	0.75	0.75	0.80	1.50	1.40
Recommended loads in solid building materials $F_{rec}^{3)}$							
Concrete	$\geq C20/25$	[kN]	0.45	0.75	-	0.40	0.75
Wood		[kN]	0.30	0.75	-	0.20	0.65
Recommended loads in the respective base material $F_{rec}^{3)}$							
Hollow block of lightweight aggregate concrete 'Sapa Parpaing'	$f_b \geq 8$ N/mm ²	[kN]	-	-	-	0.65	1.00
Pre-stressed hollow-core concrete slabs		[kN]	-	-	-	1.00	1.40
Lightweight concrete hollow block Hbl acc. to EN 771-3	$f_b \geq 2$ N/mm ²	[kN]	-	-	-	0.90	1.00

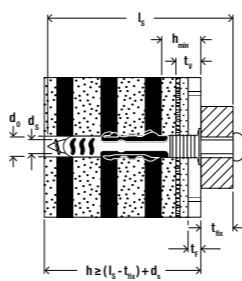
¹⁾ Required safety factors are considered.

²⁾ 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.

³⁾ Valid for tensile load, shear load and oblique load under any angle.

⁴⁾ Bending of the hook is decisive. Only for tension load.

Assortment & Loads DuoSeal



DuoSeal



DuoSeal

Item	Item No.	Drill-diameter d ₀ [mm]	Drill hole diameter tolerance [mm]	Minimum drill hole depth h ₁ [mm]	Minimum building material thickness h _{min} [mm]	Plug length l [mm]	Screw length l _s [mm]	Screw diameter d _s [mm]	Drive [TX]	Sealing depth t _v [mm]	Tile thickness t _f [mm]	Maximum thickness of the attachment t _{fix} [mm]	Sales unit [Stück]
DuoSeal 6 x 38 S A2	557727	6	6.0 – 6.40	65 - t _{fix}	22	38	60	4.5	20	5 – 14	5 – 10	12	50
DuoSeal 8 x 48 S A2	557728	8	8.0 – 8.45	75 - t _{fix}	25	48	70	6.0	30	5 – 14	5 – 10	16	25
DuoSeal 6 x 38 S A2 K (4)	557733	6	6.0 – 6.40	65 - t _{fix}	22	38	60	4.5	20	5 – 14	5 – 10	12	4
DuoSeal 8 x 48 S A2 K (2)	557734	8	8.0 – 8.45	75 - t _{fix}	25	48	70	6.0	30	5 – 14	5 – 10	16	2

DuoSeal

Recommended loads¹⁾ for a single anchor.

Type		DuoSeal 6	DuoSeal 8
Diameter stainless steel wood screw	[mm]	4.5	6.0
Recommended loads in the respective base material F _{rec} ^{2) 3)}			
Concrete	≥ C20/25	[kN] 0.40	0.60
Solid brick	≥ Mz 12	[kN] 0.20	0.30
Solid sand-lime brick	≥ KS 12	[kN] 0.30	0.40
Aerated concrete	≥ PB2, PP2	[kN] 0.10	0.10
Vertically perforated brick	≥ HLZ 12	[kN] 0.20	0.30
Perforated sand-lime brick	≥ KSL 12	[kN] 0.30	0.40
Gypsum plasterboard impregnated GKBI (green)	12.5 mm	[kN] 0.10 ⁴⁾	0.10 ⁵⁾
Gypsum plasterboard impregnated GKBI (green)	2x 12.5 mm	[kN] 0.15	0.15
Gypsum plasterboard fire resistant and impregnated GKFI	12.5 mm	[kN] 0.15 ⁴⁾	0.15 ⁴⁾
Gypsum plasterboard fire resistant and impregnated GKFI	2x 12.5 mm	[kN] 0.20	0.20
Gypsum fibreboard	12.5 mm	[kN] 0.20 ⁴⁾	0.20 ⁴⁾
Gypsum block ρ ≥ 0.85 kg/dm ³	100 mm	[kN] 0.10	0.10

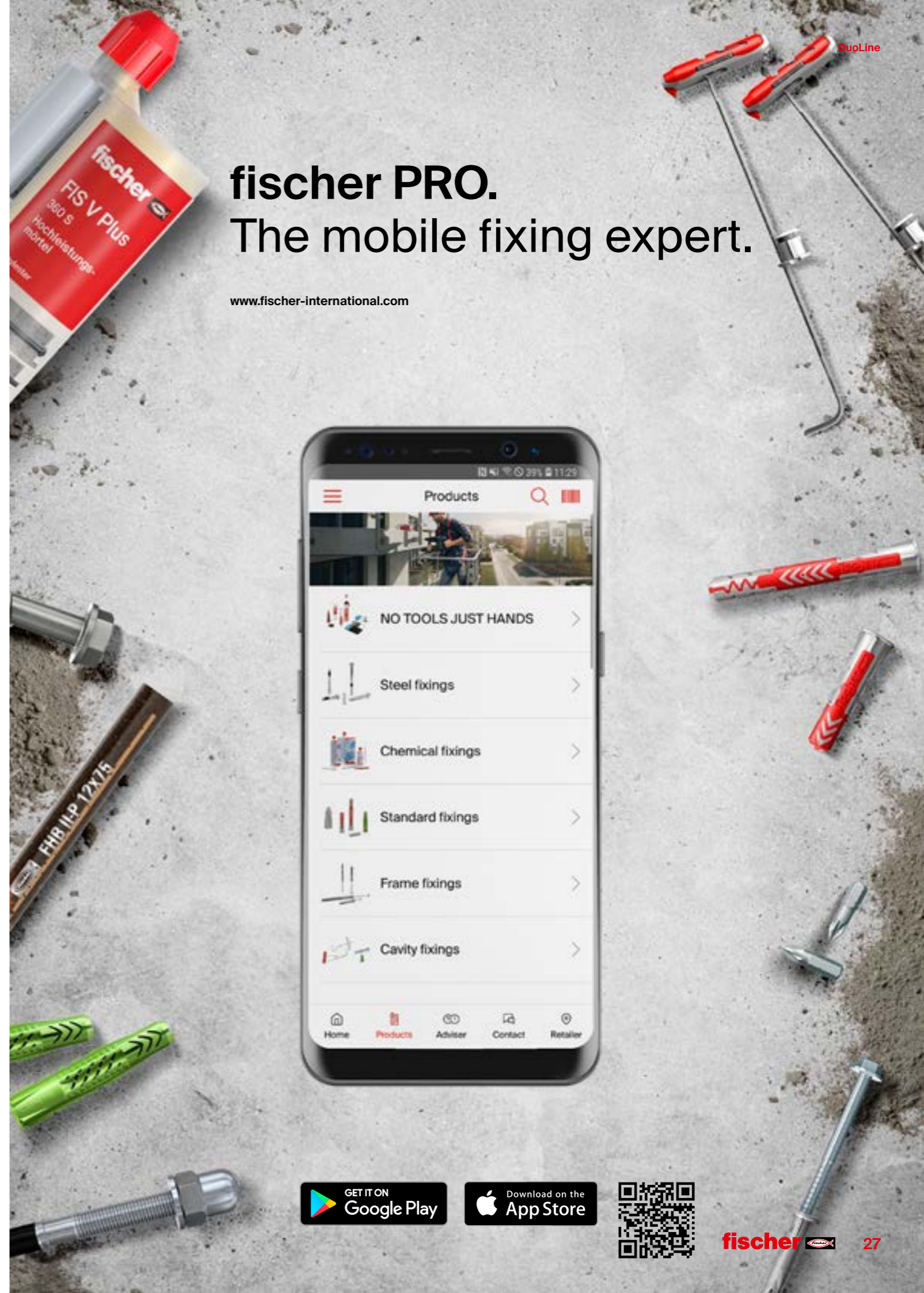
¹⁾ Required safety factor is considered. Load values are valid for using the supplied stainless steel wood screws with the specified diameters according to DIN 7998.

²⁾ Valid for tensile load, shear load and oblique load under any angle.

³⁾ Values apply to tile thickness 5 – 10 mm.

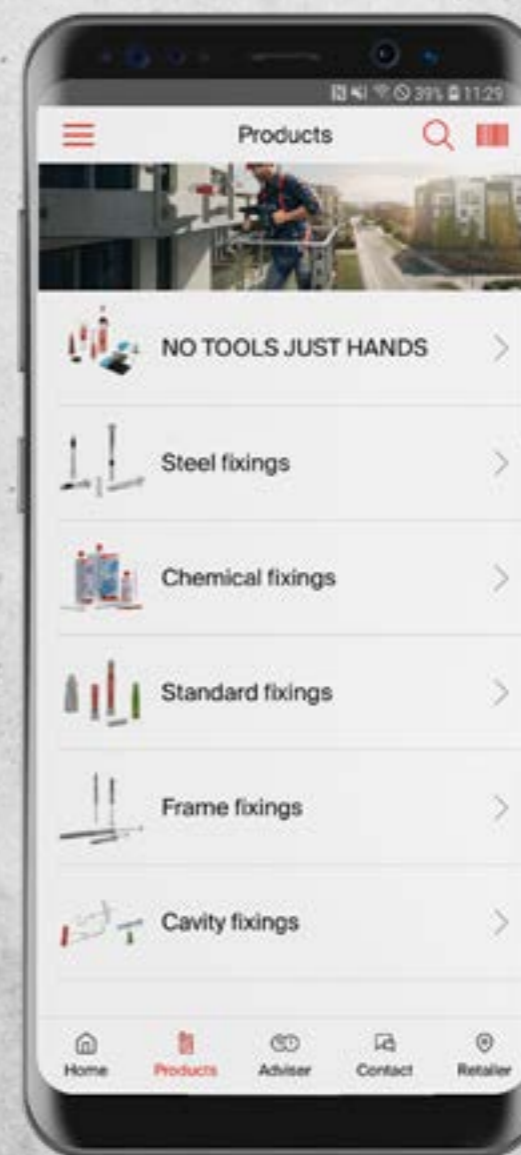
⁴⁾ Values apply to tile thickness 5 – 10 mm and total tile thickness 9.5 – 14.5 mm.

⁵⁾ Values apply to tile thickness 8 – 10 mm and total tile thickness 12.5 – 14.5 mm.



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