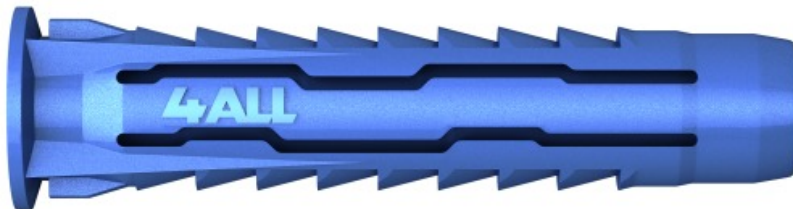


4ALL Universal Plug

High performance nylon plug for all types of substrates



Product information

Features and benefits

- Unique internal design provides positive grip for screws
- Anti-rotational lugs promote grip in wide range of substrates including soft masonry materials.
- Rib detail at plug head provides added grip.
- Expanding section designed to collapse in hollow materials and provide positive grip behind surfaces.
- Unique 4 way expansion allowing application in any substrate material and type.
- Solid head design provides strength whilst plug is installed.

Applications

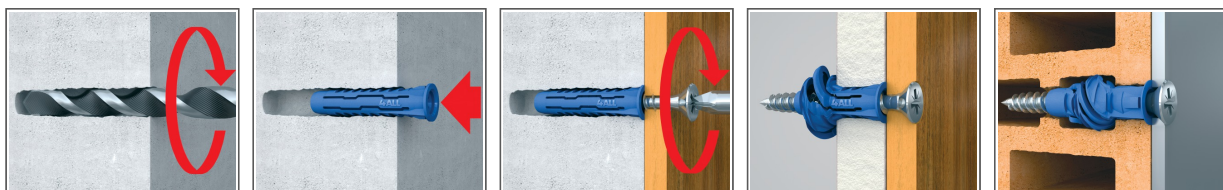
- Lighting
- Wall cabinets
- Wardrobes
- Letterboxes
- TV brackets
- Bathroom fittings
- Electrical fittings
- Shelves

Base materials

Suitable for use in

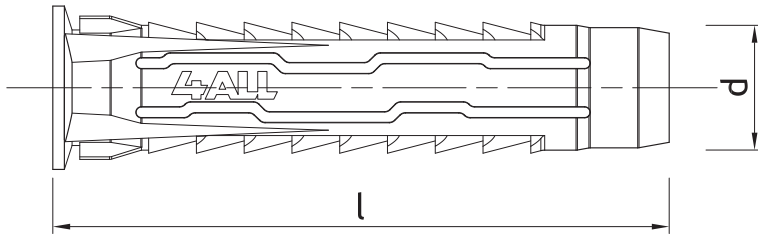
- Concrete
- Solid Brick
- Solid Sand-lime Brick
- Vertically-perforated Clay Block
- Hollow Sand-lime Brick
- Aerated Concrete Block
- Plasterboard

Installation guide



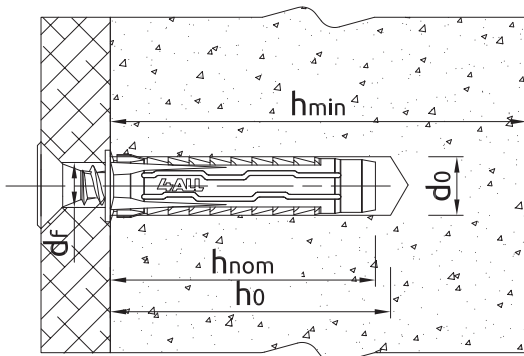
1. Drill a hole of required diameter.
2. Insert 4ALL plug into hole and tap home.
3. Insert screw of required diameter into plug through fixture and tighten.

Product information

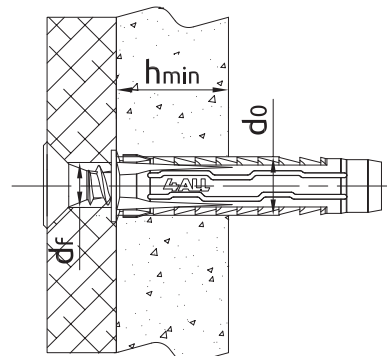


Size	Product Code	Plug		Screw		Fixture
		Diameter	Length	Diameter	Length	Hole diameter
		d	l	D	L	d _f
[mm]						
Ø05	4ALL-05	5	25	3,0 - 4,0	min. 25	4,0 - 5,0
Ø06	4ALL-06	6	30	4,0 - 5,0	min. 30	5,0 - 6,0
	4ALL-06050	6	50	4,0 - 5,0	min. 60	5,0 - 6,0
Ø08	4ALL-08	8	40	4,5 - 6,0	min. 40	6,0 - 8,0
	4ALL-08065	8	65	4,5 - 6,0	min. 70	6,0 - 8,0
Ø10	4ALL-10	10	50	6,0 - 8,0	min. 50	7,0 - 9,0
Ø12	4ALL-12	12	60	8,0 - 10,0	min. 60	9,0 - 11,0
Ø14	4ALL-14	14	70	10,0	min. 70	11,0

Installation data



Installation data in solid substrates



Installation data in hollow substrates

Size			Ø5	Ø6	Ø6L	Ø8	Ø8L	Ø10	Ø12	Ø14
Fixing diameter	d	[mm]	5	6	6	8	8	10	12	14
Hole diameter in substrate	d ₀	[mm]	5	6	6	8	8	10	12	14
Min. hole depth in substrate	h _o	[mm]	35	40	60	50	75	60	70	80
Min. installation depth	h _{nom}	[mm]	25	30	50	40	65	50	60	70
Min. substrate thickness	h _{min}	[mm]	80	80	80	80	95	80	90	105
Min. spacing	s _{min}	[mm]	50	60	100	80	130	100	120	140
Min. edge distance	c _{min}	[mm]	50	60	100	80	130	100	120	140

Basic performance data

Performance data for single fixing without influence of edge distance and spacing

Substrate		Concrete C20/25 - C50/60	Solid clay brick min 20MPa (eg MZZ0/2.0)	Sand-lime solid brick	Perforated ceramic brick	Perforated brick 15MPa	Sand-lime hollow block min. 20MPa	Silicate hollow block class 15	Autoclaved aerated concrete AAC 6	Plasterboard min. 12.5 mm	Plasterboard min. 2x12.5 mm	Lightweight concrete hollow block	
		CHARACTERISTIC LOAD											
		TENSION LOAD N_{Rk}											
Ø5, Embedment depth 25mm	[kN]	0.10	-	0.20	0.20	0.15	0.50	-	0.20	0.11	-	0.20	
Ø6, Embedment depth 30mm	[kN]	0.20	0.15	0.60	0.30	0.30	0.60	-	0.30	0.21	-	0.60	
Ø6, Embedment depth 50mm	[kN]	0.30	0.60	0.90	0.50	-	-	0.90	0.60	-	0.60	0.60	
Ø8, Embedment depth 40mm	[kN]	0.50	0.75	0.90	0.30	1.20	0.75	-	0.50	0.15	-	0.40	
Ø8, Embedment depth 65mm	[kN]	0.50	0.50	0.60	0.90	-	-	0.90	0.50	-	0.75	0.60	
Ø10, Embedment depth 50mm	[kN]	0.50	0.90	1.20	0.60	0.60	0.75	-	0.60	0.26	-	0.90	
Ø12, Embedment depth 60mm	[kN]	4.50	4.00	7.00	0.60	3.00	4.50	-	3.50	-	0.66	1.50	
Ø14, Embedment depth 70mm	[kN]	5.50	6.00	10.50	1.20	1.20	5.00	-	5.50	-	0.74	2.00	
		SHEAR LOAD V_{Rk}											
Ø5, Embedment depth 25mm	[kN]	0.10	-	0.20	0.20	0.15	0.50	-	0.20	0.11	-	0.20	
Ø6, Embedment depth 30mm	[kN]	0.20	0.15	0.60	0.30	0.30	0.60	-	0.30	0.12	-	0.60	
Ø6, Embedment depth 50mm	[kN]	0.30	0.60	0.90	0.50	-	-	0.90	0.60	-	0.60	0.60	
Ø8, Embedment depth 40mm	[kN]	0.50	0.75	0.90	0.30	1.20	0.75	-	0.50	0.15	-	0.40	
Ø8, Embedment depth 65mm	[kN]	0.50	0.50	0.60	0.90	-	-	0.90	0.50	-	0.75	0.60	
Ø10, Embedment depth 50mm	[kN]	0.50	0.90	1.20	0.60	0.60	0.75	-	0.60	0.26	-	0.90	
Ø12, Embedment depth 60mm	[kN]	4.50	4.00	7.00	0.60	3.00	4.50	-	3.50	-	0.66	1.50	
Ø14, Embedment depth 70mm	[kN]	5.50	6.00	10.50	1.20	1.20	5.00	-	5.50	-	0.74	2.00	
		DESIGN LOAD											
		TENSION LOAD N_{Rd}											
Ø5, Embedment depth 25mm	[kN]	0.06	-	0.08	0.08	0.06	0.20	-	0.10	0.06	-	0.08	
Ø6, Embedment depth 30mm	[kN]	0.11	0.06	0.24	0.12	0.12	0.24	-	0.15	0.06	-	0.24	
Ø6, Embedment depth 50mm	[kN]	0.17	0.24	0.36	0.20	-	-	0.36	0.30	-	0.30	0.24	
Ø8, Embedment depth 40mm	[kN]	0.28	0.30	0.36	0.12	0.48	0.30	-	0.25	0.08	-	0.16	
Ø8, Embedment depth 65mm	[kN]	0.28	0.20	0.24	0.36	-	-	0.36	0.25	-	0.38	0.24	
Ø10, Embedment depth 50mm	[kN]	0.28	0.36	0.48	0.24	0.24	0.30	-	0.30	0.13	-	0.36	
Ø12, Embedment depth 60mm	[kN]	2.50	1.60	2.80	0.24	1.20	1.80	-	1.75	-	0.33	0.60	
Ø14, Embedment depth 70mm	[kN]	3.06	2.40	4.20	0.48	0.48	2.00	-	2.75	-	0.37	0.80	
		SHEAR LOAD V_{Rd}											
Ø5, Embedment depth 25mm	[kN]	0.08	-	0.16	0.16	0.12	0.40	-	0.16	0.09	-	0.16	
Ø6, Embedment depth 30mm	[kN]	0.16	0.12	0.48	0.24	0.24	0.48	-	0.24	0.10	-	0.48	
Ø6, Embedment depth 50mm	[kN]	0.24	0.48	0.72	0.40	-	-	0.72	0.48	-	0.48	0.48	
Ø8, Embedment depth 40mm	[kN]	0.40	0.60	0.72	0.24	0.96	0.60	-	0.40	0.12	-	0.32	
Ø8, Embedment depth 65mm	[kN]	0.40	0.40	0.48	0.72	-	-	0.72	0.40	-	0.60	0.48	
Ø10, Embedment depth 50mm	[kN]	0.40	0.72	0.96	0.48	0.48	0.60	-	0.48	0.21	-	0.72	
Ø12, Embedment depth 60mm	[kN]	3.60	3.20	5.60	0.48	2.40	3.60	-	2.80	-	0.53	1.20	
Ø14, Embedment depth 70mm	[kN]	4.40	4.80	8.40	0.96	0.96	4.00	-	4.40	-	0.59	1.60	

Basic performance data

Substrate		Concrete C20/25 - C50/60	Solid clay brick min 20MPa (eg Mzz0/2.0)	Sand-lime solid brick	Perforated ceramic brick	Perforated brick 15MPa	Sand-lime hollow block min. 20MPa	Silicate hollow block class 15	Autoclaved aerated concrete AAC 6	Plasterboard min. 12.5 mm	Plasterboard min. 2x12.5 mm	Lightweight concrete hollow block	
		RECOMMENDED LOAD											
		TENSION LOAD N _{rec}											
Ø5, Embedment depth 25mm	[kN]	0.04	-	0.06	0.06	0.04	0.14	-	0.07	0.04	-	0.06	
Ø6, Embedment depth 30mm	[kN]	0.08	0.04	0.17	0.09	0.09	0.17	-	0.11	0.04	-	0.17	
Ø6, Embedment depth 50mm	[kN]	0.12	0.17	0.26	0.14	-	-	0.26	0.21	-	0.21	0.17	
Ø8, Embedment depth 40mm	[kN]	0.20	0.21	0.26	0.09	0.34	0.21	-	0.18	0.05	-	0.11	
Ø8, Embedment depth 65mm	[kN]	0.20	0.14	0.17	0.26	-	-	0.26	0.18	-	0.27	0.17	
Ø10, Embedment depth 50mm	[kN]	0.20	0.26	0.34	0.17	0.17	0.21	-	0.21	0.09	-	0.26	
Ø12, Embedment depth 60mm	[kN]	1.79	1.14	2.00	0.17	0.86	1.29	-	1.25	-	0.24	0.43	
Ø14, Embedment depth 70mm	[kN]	2.18	1.71	3.00	0.34	0.34	1.43	-	1.96	-	0.26	0.57	
		SHEAR LOAD V _{rec}											
Ø5, Embedment depth 25mm	[kN]	0.06	-	0.11	0.11	0.09	0.29	-	0.11	0.06	-	0.11	
Ø6, Embedment depth 30mm	[kN]	0.11	0.09	0.34	0.17	0.17	0.34	-	0.17	0.07	-	0.34	
Ø6, Embedment depth 50mm	[kN]	0.17	0.34	0.51	0.29	-	-	0.51	0.34	-	0.34	0.34	
Ø8, Embedment depth 40mm	[kN]	0.29	0.43	0.51	0.17	0.69	0.43	-	0.29	0.09	-	0.23	
Ø8, Embedment depth 65mm	[kN]	0.29	0.29	0.34	0.51	-	-	0.51	0.29	-	0.43	0.34	
Ø10, Embedment depth 50mm	[kN]	0.29	0.51	0.69	0.34	0.34	0.43	-	0.34	0.15	-	0.51	
Ø12, Embedment depth 60mm	[kN]	2.57	2.29	4.00	0.34	1.71	2.57	-	2.00	-	0.38	0.86	
Ø14, Embedment depth 70mm	[kN]	3.14	3.43	6.00	0.69	0.69	2.86	-	3.14	-	0.42	1.14	

Product commercial data

Product Code	Plug	Quantity [pcs]			Weight [kg]			Bar Codes
	Diameter [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
4ALL-05	5	100	3200	179200	0.06	1.76	128.6	5906675028408
4ALL-06	6	100	3200	153600	0.08	2.5	151.3	5906675028903
4ALL-06050	6	50	1600	38400	0.07	2.3	86.1	5906675383477
4ALL-08	8	100	1600	76800	0.19	3.1	176.7	5906675028910
4ALL-08065	8	50	800	19200	0.16	2.5	91.1	5906675383484
4ALL-10	10	50	800	38400	0.17	2.8	162.9	5906675028927
4ALL-12	12	20	320	15360	0.13	2.0	126.0	5906675159454
4ALL-14	14	10	160	3840	0.11	1.68	70.3	5906675159478