

## R-FF1-L-DT Nylon frame fixing countersunk in corrosion-resistant coating

Universal frame fixing with countersunk screw in corrosion-resistant coating for many applications



### Approvals and Reports

- ETA-12/0398



### Product information

#### Features and benefits

- Special zinc flake corrosion-resistant coating for anti-corrosion protection
- The countersunk plug for flush fixing of soft material (eg. timber)
- Specially-formulated nylon allows best performance installation for use in all base material categories according to ETAG 020 (A, B, C, D)
- Internal plug geometry designed to fit the screw head
- Plug design ensures multi-axis expansion

#### Applications

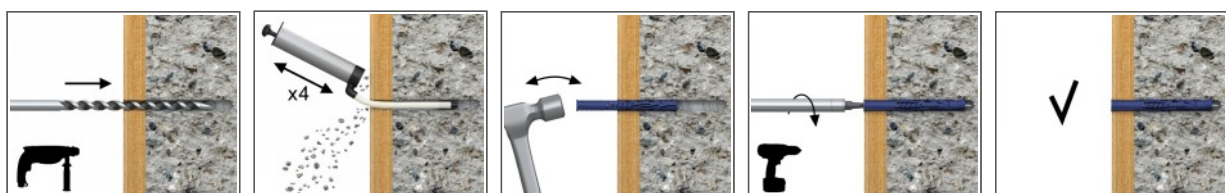
- Door and window frames
- Garage doors
- Gates
- Industrial doors
- Facade (substructures made of wood and metal)
- Wall cabinets
- Satellite dishes
- Shelves
- Handrails
- Cable trays

#### Base materials

##### Approved for use in:

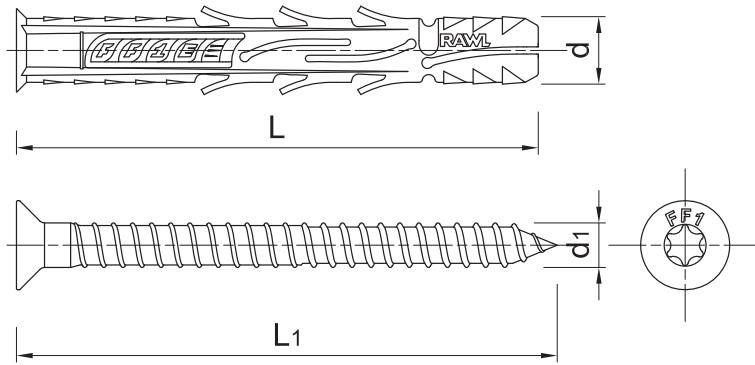
- Concrete  $\geq$  C12/15 (Use category A)
- Solid Brick (Use category B)
- Solid Sand-lime Brick (Use category B)
- Hollow Brick (Use category C)
- Hollow Sand-lime Brick (Use category C)
- Hollow Lightweight Concrete Block (Use category D)
- Aerated Concrete Block (Use category D)
- Concrete  $\geq$  C12/15 (Use category A)
- Solid Brick (Use category B)
- Solid Sand-lime Brick (Use category B)
- Hollow Brick (Use category C)
- Hollow Sand-lime Brick (Use category C)

### Installation guide



1. Drill a hole of required diameter and depth
2. With a hammer, lightly tap the plug through the fixture into hole until fixing depth is reached
3. Tighten the FF1 screw

**Product information**



Size	Product Code	Plug		Screw		Fixture			Screw drive
		Diameter	Length	Diameter	Length	Max. thickness		Hole diameter	
		d	l	d <sub>1</sub>	L1	t <sub>fix</sub> 50	t <sub>fix</sub> 70	d <sub>f</sub>	
[mm]									
Ø8	R-FF1-N-08L080/ZF	7.8	80	5.8	87	30	10	8	T30
	R-FF1-N-08L100/ZF	7.8	100	5.8	107	50	30	8	T30
	R-FF1-N-08L120/ZF	7.8	120	5.8	127	70	50	8	T30
	R-FF1-N-08L140/ZF	7.8	140	5.8	147	90	70	8	T30
	R-FF1-N-08L160/ZF	7.8	160	5.8	167	110	90	8	T30
Ø10	R-FF1-N-10L080/DT	9.8	80	7	87	30	10	10	T40
	R-FF1-N-10L100/DT	9.8	100	7	107	50	30	10	T40
	R-FF1-N-10L120/DT	9.8	120	7	127	70	50	10	T40
	R-FF1-N-10L140/DT	9.8	140	7	147	90	70	10	T40
	R-FF1-N-10L160/DT	9.8	160	7	167	110	90	10	T40
	R-FF1-N-10L200/DT	9.8	200	7	207	150	130	10	T40
	R-FF1-N-10L240/DT	9.8	240	7	247	190	170	10	T40
	R-FF1-N-10L300/DT	9.8	300	7	307	250	230	10	T40

**Installation data**

Substrate			A, B, C	D	A, B, C	A, B, C	D
Diameter	d	[mm]	8	8	10	10	10
Effective embedment depth	h <sub>ef</sub>	[mm]	50	70	50	70	70
Hole diameter in substrate	d <sub>0</sub>	[mm]	8	8	10	10	10
Min. hole depth in substrate	h <sub>0</sub>	[mm]	60	80	60	80	80
Min. installation depth	h <sub>nom</sub>	[mm]	50	70	50	70	70
Min. substrate thickness	h <sub>min</sub>	[mm]	100	100	100	100	100
Min. spacing	s <sub>min</sub>	[mm]	60	200	90	95	70
Min. edge distance	c <sub>min</sub>	[mm]	60	100	80	80	70
Max. installation torque	T <sub>inst</sub>	[Nm]	9	3.6	16	16	4.3
Screw drive	-	[-]	T30	T30	T40	T40	T40

## Basic performance data

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

Substrate		Concrete min. C12/15	Concrete min. C16/20	Solid brick min. 50MPa	Solid clay brick min 20MPa (eg	Sand-lime brick min. 30MPa	Solid silicate brick min 20MPa (eg KS	Perforated ceramic blocks min 15MPa	Perforated ceramic blocks min 15MPa	Sand-lime hollow block min. 20MPa	Lightweight concrete hollow block min	Hollow brick min. 12MPa	Hollow brick min. 15MPa	Hollow clay block min. 7.5MPa	Autoclaved aerated concrete AAC 2	Autoclaved aerated concrete AAC 6
		CHARACTERISTIC LOAD $F_{Rk}$														
Ø8, Effective embedment depth 50 mm	[kN]	1.50	2.00	-	1.50	-	1.50	0.75	0.40	0.50	0.90	0.60	1.20	-	-	-
Ø8, Effective embedment depth 70 mm	[kN]	-	-	-	-	-	-	-	-	-	-	-	-	-	0.40	0.90
Ø10, Effective embedment depth 50 mm	[kN]	1.20	2.00	-	-	1.50	-	-	-	-	-	-	-	-	-	-
Ø10, Effective embedment depth 70 mm	[kN]	4.00	5.50	5.00	-	-	-	1.50	1.50	3.50	0.90	0.90	0.75	0.75	0.40	0.90
DESIGN LOAD $F_{Rd}$																
Ø8, Effective embedment depth 50 mm	[kN]	0.83	1.11	-	0.60	-	0.60	0.30	0.16	0.20	0.36	0.24	0.48	-	-	-
Ø8, Effective embedment depth 70 mm	[kN]	-	-	-	-	-	-	-	-	-	-	-	-	-	0.20	0.45
Ø10, Effective embedment depth 50 mm	[kN]	0.67	1.11	-	-	0.60	-	-	-	-	-	-	-	-	-	-
Ø10, Effective embedment depth 70 mm	[kN]	2.22	3.92	2.00	-	-	-	0.60	0.60	1.40	0.36	0.36	0.30	0.30	0.20	0.45
RECOMMENDED LOAD $F_{rec}$																
Ø8, Effective embedment depth 50 mm	[kN]	0.60	0.79	-	0.43	-	0.43	0.21	0.11	0.14	0.26	0.17	0.34	-	-	-
Ø8, Effective embedment depth 70 mm	[kN]	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14	0.32
Ø10, Effective embedment depth 50 mm	[kN]	0.48	0.79	-	-	0.43	-	-	-	-	-	-	-	-	-	-
Ø10, Effective embedment depth 70 mm	[kN]	1.59	2.80	1.43	-	-	-	0.43	0.43	1.00	0.26	0.26	0.21	0.21	0.14	0.32

## Product commercial data

Product Code	Plug		Screw		Quantity [pcs]			Weight [kg]			Bar Codes
	Diameter [mm]	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet			
R-FF1-N-08L080/ZF <sub>1)</sub>	7.8	5.8	87	50	800	19200	0.91	14.5	378.1	5906675292878	
R-FF1-N-08L100/ZF <sub>1)</sub>	7.8	5.8	107	50	800	19200	1.12	17.9	459.6	5906675292885	
R-FF1-N-08L120/ZF <sub>1)</sub>	7.8	5.8	127	50	800	19200	1.35	21.6	549.0	5906675292892	
R-FF1-N-10L080/DT <sub>1)</sub>	9.8	7	87	50	400	9600	1.40	11.2	298.8	5906675039015	
R-FF1-N-10L100/DT <sub>1)</sub>	9.8	7	107	25	400	9600	0.87	13.9	363.5	5906675039022	
R-FF1-N-10L120/DT <sub>1)</sub>	9.8	7	127	25	300	7200	1.00	12.0	317.4	5906675039039	
R-FF1-N-10L140/DT <sub>1)</sub>	9.8	7	147	25	300	7200	1.21	14.5	378.6	5906675039046	
R-FF1-N-10L160/DT <sub>1)</sub>	9.8	7	167	25	300	7200	1.38	16.6	428.2	5906675039053	
R-FF1-N-10L200/DT <sub>1)</sub>	9.8	7	207	25	25	6000	1.70	1.70	439.0	5906675039060	
R-FF1-N-10L240/DT <sub>1)</sub>	9.8	7	247	25	25	3000	2.1	2.1	277.4	5906675039077	
R-FF1-N-10L300/DT <sub>1)</sub>	9.8	7	307	10	10	3120	1.08	1.08	365.4	5906675039084	
R-FF1-N-08L140/ZF <sub>1)</sub>	7.8	5.8	147	50	600	14400	1.54	18.5	474.1	5906675432977	
R-FF1-N-08L160/ZF <sub>1)</sub>	7.8	5.8	167	50	600	14400	1.75	21.0	534.0	5906675432984	

1) ETA-12/0398