

Anclajes metálicos de expansión con rosca externa para cargas altas

*Through bolt anchors for heavy loads*



DESA-FIX



DESA-FIX INOX A2-A4

### PROPIEDADES

Acero cincado electrolítico de 5 micras de espesor.  
Estampado.  
Arandela DIN 125 o DIN 9021.  
Disponible también en acero inoxidable A2 o A4.

### PROPERTIES

5 micron carbon steel zinc plated.  
Cold formed.  
DIN 125 or DIN 9021 washer.  
Also available in A2 and A4 stainless steel.



### APLICACIONES

Para fijación en hormigón y materiales duros  
Fijación de placas, maquinaria y puentes grúa  
Barandillas de alta resistencia, soportes y señalizaciones

### APPLICATIONS AND USES

Non-cracked concrete and hard materials  
Attaching structural steel, façade, hand rails, racks,  
mechanical equipment, pipe supports, elevators, etc

### VENTAJAS

Rosca larga permite adaptarse fácilmente a diversos espesores a fijar  
Clip de 3 tetones para mayor agarre  
Fácil instalación a través del taladro del elemento a fijar

### BENEFITS

Long thread allows increased flexibility regarding fastening thickness  
3-pieces wedge design allows higher loads and prevents anchor from spinning during installation  
Can be installed through the fixture hole, improving productivity

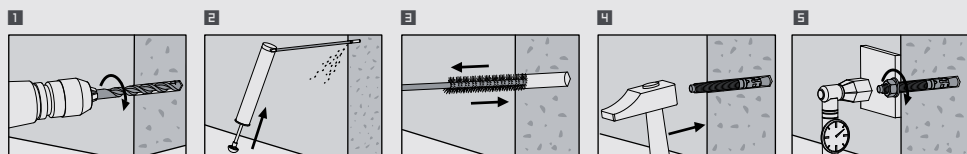
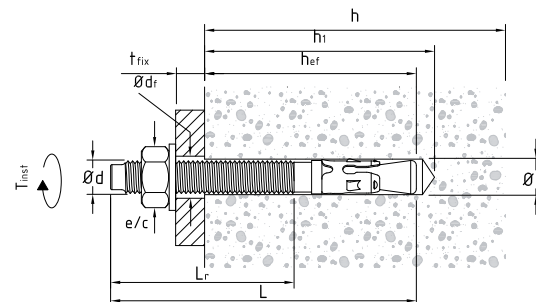


TABLA DE DATOS DE COLOCACIÓN PARA DESA-FIX | DESA-FIX TECHNICAL INFORMATION AND INSTALLATION DATA SHEET



CARACTERÍSTICAS TÉCNICAS Y DATOS DE COLOCACIÓN   TECHNICAL INFORMATION AND INSTALLATION DATA												
REF.	d (mm)	L (mm)	Altura tetón + Tuerca + Arandela Head + Nut + Washer (mm)	d <sub>0</sub> (mm)	*h <sub>1</sub> (mm)	d <sub>1</sub> (mm)	t <sub>fix</sub> (mm)	h <sub>tr</sub> (mm)	T <sub>res</sub> (N/m)	*Distancias mínimas Minimum distances		*h <sub>h</sub> (mm)
										S (mm)	C (mm)	
M6x45	M6	45	5 + 1,6 + 2	6	40	8	5	31,4	10	63	80	63
M6x65	M6	65	5 + 1,6 + 2	6	60	8	10	46,4	10	93	120	93
M6x100	M6	100	5 + 1,6 + 2	6	60	8	40	51,4	10	103	130	103
M6x120	M6	120	5 + 1,6 + 2	6	60	8	60	51,4	10	103	130	103
M6x140	M6	140	5 + 1,6 + 2	6	60	8	80	51,4	10	103	130	103
M6x150	M6	150	5 + 1,6 + 2	6	60	8	90	51,4	10	103	130	103
M8x55	M8	55	6,5 + 1,6 + 2	8	50	10	5	39,9	25	80	100	80
M8x75	M8	75	6,5 + 1,6 + 2	8	60	10	10	54,9	25	110	140	110
M8x90	M8	90	6,5 + 1,6 + 2	8	60	10	25	54,9	25	110	140	110
M8x110	M8	110	6,5 + 1,6 + 2	8	60	10	45	54,9	25	110	140	110
M10x75	M10	75	8 + 2 + 2,8	10	65	12	5	57,2	45	115	143	115
M10x90	M10	90	8 + 2 + 2,8	10	70	12	15	62,2	45	125	156	125
M10x120	M10	120	8 + 2 + 2,8	10	70	12	45	62,2	45	125	156	125
M10x150	M10	150	8 + 2 + 2,8	10	70	12	75	62,2	45	125	156	125
M12x75	M12	75	10 + 2,5 + 3,5	12	60	14	5	54	80	108	135	108
M12x90	M12	90	10 + 2,5 + 3,5	12	80	14	10	64	80	128	160	128
M12x110	M12	110	10 + 2,5 + 3,5	12	90	14	10	84	80	168	210	168
M12x150	M12	150	10 + 2,5 + 3,5	12	90	14	50	84	80	168	210	168
M12x180	M12	180	10 + 2,5 + 3,5	12	90	14	80	84	80	168	210	168
M14x80	M14	80	11 + 3 + 3,5	14	65	16	5	57,5	115	115	144	115
M14x100	M14	100	11 + 3 + 3,5	14	85	16	10	72,5	115	145	182	145
M14x120	M14	120	11 + 3 + 3,5	14	95	16	20	82,5	115	165	207	165
M14x145	M14	145	11 + 3 + 3,5	14	95	16	45	82,5	115	165	207	165
M16x110	M16	110	13 + 3 + 4	16	90	18	10	80	160	160	200	160
M16x125	M16	125	13 + 3 + 4	16	90	18	25	80	160	160	200	160
M16x145	M16	145	13 + 3 + 4	16	115	18	20	105	160	210	263	210
M16x170	M16	170	13 + 3 + 4	16	115	18	45	105	160	210	263	210
M16x220	M16	220	13 + 3 + 4	16	115	18	95	105	160	210	263	210
M20x120	M20	120	16 + 3 + 5	20	100	22	6	90	320	180	225	180
M20x170	M20	170	16 + 3 + 5	20	140	22	16	130	320	260	325	260
M20x215	M20	215	16 + 3 + 5	20	140	22	60	131	320	262	328	262
M20x270	M20	270	16 + 3 + 5	20	140	22	110	136	320	272	340	272

\*Distancias "S", "C", espesor "h" y profundidad de taladro "h<sub>1</sub>", indicadas para valores t<sub>fix</sub>, h<sub>tr</sub> de tabla. Recalcular "S", "C", "h" y "h<sub>1</sub>" en caso de aplicación de diferentes valores t<sub>fix</sub>, h<sub>tr</sub>. La longitud de rosca podrá ser modificada por DESA según las necesidades del mercado.  
\*Distances "S", "C", thickness "h" and hole depth "h<sub>1</sub>", indicated for values t<sub>fix</sub>, h<sub>tr</sub> from the table. Recalculate "S", "C", "h" and "h<sub>1</sub>" if different values of t<sub>fix</sub> and h<sub>tr</sub> are applied. Thread length can be modified by the manufacturer following market requests.

DESA-FIX

TECHNICAL INFORMATION AND INSTALLATION DATA

DESCR.	ANCHOR				INSTALLATION DATA								
	d (mm)	L <sub>r</sub> (mm)	L (mm)	nut+washer (mm)	d <sub>0</sub> (mm)	h <sub>1</sub> MIN.* (mm)	d <sub>f</sub> (mm)	t <sub>ex</sub> MAX. (mm)	h <sub>ef</sub> MIN. (mm)	Torque T <sub>inst</sub> (Nm)	*MIN.		h *MIN. (mm)
											S (mm)	C (mm)	
M6 x 45	M6	20	45	5+1,6+2	6	40	8	5	31,4	10	63	80	63
M6 x 65	M6	25	65	5+1,6+2	6	60	8	10	46,4	10	93	120	93
M6 x 100	M6	40	100	5+1,6+2	6	60	8	40	51,4	10	103	130	103
M6 x 120	M6	60	120	5+1,6+2	6	60	8	60	51,4	10	103	130	103
M6 x 140	M6	80	140	5+1,6+2	6	60	8	80	51,4	10	103	130	103
M6 x 150	M6	80	150	5+1,6+2	6	60	8	90	51,4	10	103	130	103
M8 x 55	M8	25	55	6,5+1,6+2	8	50	10	5	39,9	25	80	100	80
M8 x 75	M8	30	75	6,5+1,6+2	8	60	10	10	54,9	25	110	140	110
M8 x 90	M8	50	90	6,5+1,6+2	8	60	10	25	54,9	25	110	140	110
M10 x 75	M10	35	75	8+ 2+2,8	10	65	12	5	57,2	45	115	143	115
M10 x 90	M10	50	90	8+ 2+2,8	10	70	12	15	62,2	45	125	156	125
M10 x 120	M10	70	120	8+ 2+2,8	10	70	12	45	62,2	45	125	156	125
M10 x 150	M10	100	150	8+ 2+2,8	10	70	12	75	62,2	45	125	156	125
M12 x 75	M12	30	75	10+2,5+3,5	12	60	14	5	54	80	108	135	108
M12 x 90	M12	40	90	10+2,5+3,5	12	80	14	10	64	80	128	160	128
M12 x 110	M12	60	110	10+2,5+3,5	12	90	14	10	84	80	168	210	168
M12 x 150	M12	100	150	10+2,5+3,5	12	90	14	50	84	80	168	210	168
M12 x 180	M12	130	180	10+2,5+3,5	12	90	14	80	84	80	168	210	168
M14 x 100	M14	50	100	11+3+3,5	14	85	16	10	72,5	115	145	182	145
M14 x 120	M14	70	120	11+3+3,5	14	95	16	20	82,5	115	165	207	165
M16 x 110	M16	45	110	13+3+4	16	90	18	10	80	160	160	200	160
M16 x 145	M16	80	145	13+3+4	16	115	18	20	105	160	210	263	210
M16 x 170	M16	100	170	13+3+4	16	115	18	45	105	160	210	263	210
M16 x 220	M16	150	220	13+3+4	16	115	18	95	105	160	210	263	210
M20 x 170	M20	100	170	16+3+5	20	140	22	16	130	320	260	325	260
M20 x 215	M20	100	215	16+3+5	20	140	22	60	131	320	262	328	262
M20 x 270	M20	150	270	16+3+5	20	140	22	110	136	320	272	340	272

Distances "S", "C", thickness "h" and hole depth "h<sub>1</sub>", indicated for values t<sub>ex</sub> and h<sub>ef</sub> from the table.  
 Recalculate "S", "C", "h" and "h<sub>1</sub>" if different values of t<sub>ex</sub> and h<sub>ef</sub> are applied.  
 Thread length could be modified by DESA according to the market necessities.

RECOMMENDED TENSILE AND SHEAR LOAD ON CONCRETES WITH INDICATED RK

DESCR.	TENSION LOAD (daN)					SHEAR LOAD (daN)				
	Concrete					Concrete				
	150 Kg/cm <sup>2</sup>	175 Kg/cm <sup>2</sup>	200 Kg/cm <sup>2</sup>	250 Kg/cm <sup>2</sup>	350 Kg/cm <sup>2</sup>	150 Kg/cm <sup>2</sup>	175 Kg/cm <sup>2</sup>	200 Kg/cm <sup>2</sup>	250 Kg/cm <sup>2</sup>	350 Kg/cm <sup>2</sup>
M6 x 45	109	119	130	135	145	265	290	316	331	366
M6 x 65	260	294	320	340	380	265	290	316	331	366
M6 x 100	260	294	320	340	380	265	290	316	331	366
M6 x 120	260	294	320	340	380	265	290	316	331	366
M6 x 140	260	294	320	340	380	265	290	316	331	366
M6 x 150	260	294	320	340	380	265	290	316	331	366
M8 x 55	220	244	266	310	400	478	524	570	590	620
M8 x 75	400	442	480	490	510	478	524	570	590	620
M8 x 90	400	442	480	490	510	478	524	570	590	620
M10 x 75	400	442	480	490	510	609	667	725	785	900
M10 x 90	605	662	720	770	860	609	667	725	785	900
M10 x 120	605	662	720	770	860	609	667	725	785	900
M10 x 150	605	662	720	770	860	609	667	725	785	900
M12 x 75	420	460	500	612	833	977	1.164	1.266	1.300	1.366
M12 x 90	585	644	700	815	1.010	977	1.164	1.266	1.300	1.366
M12 x 110	795	874	950	1.035	1.230	977	1.164	1.266	1.300	1.366
M12 x 150	795	874	950	1.035	1.230	977	1.164	1.266	1.300	1.366
M12 x 180	795	874	950	1.035	1.230	977	1.164	1.266	1.300	1.366
M14 x 100	693	759	825	935	1.130	1.190	1.307	1.421	1.568	1.640
M14 x 120	870	957	1.040	1.145	1.350	1.190	1.307	1.421	1.568	1.640
M16 x 110	920	1.012	1.100	1.200	1.400	1.385	1.518	1.650	1.700	1.790
M16 x 145	1.344	1.472	1.600	1.700	1.880	1.385	1.518	1.650	1.700	1.790
M16 x 170	1.344	1.472	1.600	1.700	1.880	1.385	1.518	1.650	1.700	1.790
M16 x 220	1.344	1.472	1.600	1.700	1.880	1.385	1.518	1.650	1.700	1.790
M20 x 170	1.750	1.932	2.100	2.275	2.630	2.200	2.410	2.620	2.695	2.840
M20 x 215	1.750	1.932	2.100	2.275	2.630	2.200	2.410	2.620	2.695	2.840
M20 x 270	1.750	1.932	2.100	2.275	2.630	2.200	2.410	2.620	2.695	2.840

Attention: Use short anchors for NON critical loads.

Important: the indicated values for static load on the table belong to the report N° 15422, from the tests done by the Instituto Eduardo Torroja, of C.S.I.C., and based on the installation data showed in the "technical information and installation data" table.

REDUCTION FACTOR TO APPLY TO TENSILE AND SHEAR LOADS, FOR SPACINGS SHORTER THAN THE INDICATED ON THE INSTALLATION DATA TABLE

SPACING BETWEEN ANCHORS		DISTANCES BETWEEN CENTRE OF THE ANCHOR AND CONCRETE EDGE LOAD NOT ON THE EDGE	
Spacing S	Reduction Factor K <sub>s</sub>	Edge Distance C	Reduction Factor K <sub>c</sub>
0,75 h <sub>ef</sub>	0,65	1,00 h <sub>ef</sub>	0,5
1,00 h <sub>ef</sub>	0,72	1,25 h <sub>ef</sub>	0,58
1,30 h <sub>ef</sub>	0,80	1,50 h <sub>ef</sub>	0,66
1,60 h <sub>ef</sub>	0,90	1,75 h <sub>ef</sub>	0,75
1,80 h <sub>ef</sub>	0,94	2,00 h <sub>ef</sub>	0,84
1,90 h <sub>ef</sub>	0,96	2,25 h <sub>ef</sub>	0,92
2,00 h <sub>ef</sub>	1,00	2,50 h <sub>ef</sub>	1,00

Important: It is not allowed the use of anchors with distance between anchors or to the edge of the concrete, lower than the minimum showed in the reduction tables.

To establish exactly the embedded depth of an anchor, need to control previously its expansion area that for "DESA-FIX" is the end of the expansion plates. The distance from this end until just under the washer is the "h<sub>ef</sub>" of each of these products.

Recommended: Test 3% of the anchors, applying a test load of 1.4 x working load.