CAST-IN LIFTING LOOPS – TIL

Cast-in Lifting Loops are the most economical lifting system. They require relatively large edge distances. Take the exposure of steel wire loops after the installation of the concrete unit into consideration. Once the unit is set in the final position, protruding loops can be cut off, if necessary, but the cut ends must be protected against corrosion to prevent staining from rust. The steel wire rope is more suitable for forming a cast-in loop because it is flexible, and the lifting loop made from reinforcing bar is liable to fatigue, especially if bent during angled lift. The minimum dimensions for installation in reinforced concrete are indicated in the table below. Additional lateral reinforcement may be required for acute angled lifts. Cast-in Lifting Loops are made of a high-grade steel wire AISI 1010 (W 1.1121), swaged in a ferrule made of AIMg1.8, with a fixing strip in the middle with an identification label, which must not slide down the hoop during casting and should remain visible. Each lifting loop has a label attached, marked with the admissible load and the code number of the testing. Cast-in Lifting Loops are zinc plated for protection against corrosion. These lifting systems are suitable for use through a single cycle from production to final installation. They are not suitable for multiple use applications. To choose the correct size for any lift, it is important to consider the angle of lift, the crane factor and the adhesion to the formwork.

Cast-in lifting loops must be installed in the direction of the expected load. They should be suspended from supports attached to the formwork so that 2/3 of the loop will be cast in and 1/3 will remain exposed. The loops must be fastened to the reinforcement cage to avoid movement during concreting. Avoid bending the steel wire rope while the precast unit is in storage. Exposed loops can be attached to standard crane hooks, but the curvature radius of the crane hook should at least be equal to the diameter of the wire rope. It is essential to check that the wire rope is in good condition, with no broken, crushed or unravelled wire. Also, do not use if there are kinks in the loop or the wire rope is badly corroded! Cast-in Lifting Loops with any signs of damage should not be used.





	Product no.	Overall length	Wire rope	dimensions	Weight	Load group	
TIL		L	d	d L		f _{cu} > 30 MPa	
		[mm]	[mm]	[mm]	[kg/pc]	[t]	
TIL-008-210	44812	210	6	540	0.12	0.8	
TIL-012-225	44813	225	7	570	0.16	1.2	
TIL-016-235	44814	235	8	615	0.22	1.6	
TIL-020-275	44815	275	9	690	0.32	2.0	
TIL-025-315	44816	315	10	780	0.44	2.5	
TIL-040-340	44817	340	12	860	0.69	4.0	
TIL-052-360	43599	360	14	1010	0.99	5.2	
TIL-063-390	43600	390	16	1100	1.41	6.3	
TIL-080-440	43601	440	18	1250	2.08	8.0	
TIL-100-525	44818	525	20	1350	3.01	10.0	
TIL-125-570	43602	570	22	1500	3.90	12.5	
TIL-160-615	44819	615	26	1650	6.05	16.0	
TIL-200-730	44820	730	28	1900	8.00	20.0	
TIL-250-800	44821	800	32	2000	11.28	25.0	
TIL-320-770	46961	770	36	2225	13.40	32.0	
TIL-370-950	46962	950	36	2500	15.90	37.0	
TIL-470-1100	46963	1100	44	3000	28.20	47.0	

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TIL-520-1200	47324	1200	44	3350	31.05	52.0
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Terwa reserves the right to March-2019	o make changes to the	e documentation at a	any time			Page 47

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Longitudinal installation

Transversal installation

Installation details and reinforcement required for TIL - Cast-in lifting system

	Dimensions cast-in		Reinforcement dimension		Minimum wic eler	Load group		
TIL	f e		Min Is Min I		S	2xb	f _{cu} > 30 MPa	
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[t]	
TIL-008-210	60	150	250	400	140	80	0.8	
TIL-012-225	65	160	300	450	150	100	1.2	
TIL-016-235	70	165	350	500	170	120	1.6	
TIL-020-275	75	200	350	550	180	140	2.0	
TIL-025-315	85	230	450	650	190	160	2.5	
TIL-040-340	100	240	500	700	220	200	4.0	
TIL-052-360	100	260	550	800	300	240	5.2	
TIL-063-390	110	280	600	950	320	280	6.3	
TIL-080-440	120	320	700	1050	410	300	8.0	
TIL-100-525	135	390	800	1200	440	320	10.0	
TIL-125-570	150	420	900	1300	570	360	12.5	
TIL-160-615	165	450	1000	1500	630	420	16.0	
TIL-200-730	180	550	1150	1700	680	450	20.0	
TIL-250-800	200	600	1300	1950	760	500	25.0	
TIL-320-770	220	550			800	540	32.0	
TIL-370-950	275	675	by the lifting des	ign engineer and	830	580	37.0	
TIL-470-1100	320	780	placed in acco	rdance with the	940	630	47.0	
TIL-520-1200	350	850		accign.	1050	690	52.0	

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30° 30° 2xb		Installation dimensions		Minimum width of precast element	
	TIL	a/2	а	S	2xb
a		[mm]	[mm]	[mm]	[mm]
	TIL-008-210	270	540	140	80
a/2	TIL-012-225	310	620	150	100
	TIL-016-235	345	690	170	120
	TIL-020-275	415	830	180	140
	TIL-025-315	445	890	190	160
	TIL-040-340	500	1000	220	200
	TIL-052-360	515	1030	300	240
	TIL-063-390	575	1150	320	280
300	TIL-080-440	645	1290	410	300
30	TIL-100-525	730	1460	440	320
a	TIL-125-570	810	1620	570	360
	TIL-160-615	930	1860	630	420
a/2 0	TIL-200-730	1060	2120	680	450
	TIL-250-800	1205	2410	760	500
	TIL-320-770	1350	2700	800	540
	TIL-370-950	1480	2960	830	580
	TIL-470-1100	1645	3290	940	630
	TIL-520-1200	1870	3740	1050	690

STORAGE REQUIREMENTS

Lifting systems and anchors must be stored and protected in dry conditions, under a roof. Large temperature variations, snow, ice, humidity, or salt and saltwater impact may cause damage to anchors and shorten the service life.



SAFETY INSTRUCTIONS

Lifting components must be used by trained, experienced personnel thereby reducing the risk of major damage and injury. Every lifting process must be made according to the instructions.

Obligatory instructions for safe working:

- All lifting anchors must be operated manually
- Inspect lifting anchors visually before use; check and clean all lifting inserts prior to use
- Hook in all lifting systems separately, without using force
- Respect local regulations for safe lifting and hoisting at all times.