

HLS ANCHOR



Description

The Macsim HLS produces the ultimate power from its heavy duty mechanical expansion design. The anchor is ideal for structural steel connections to concrete, heavy equipment location, tilt-up prop anchoring and any other concrete based connection that requires a high degree of safety. HLS can be used in areas where cracked concrete is a possibility as it will give a follow up expansion after slipping.

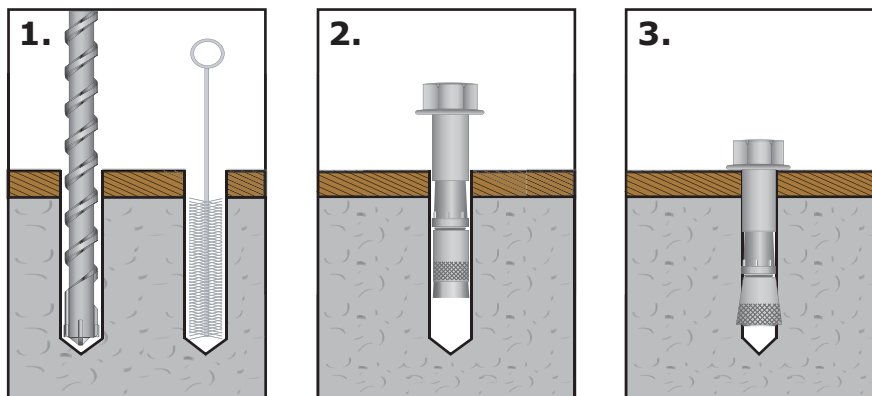
Features

- High load capacity.
- Two-level expansion mechanism
- Suitable for fatigue and shock loading
- Low profile head design

Typical Applications

- Mechanical equipment and column base plates.
- Overhead Anchoring
- Tilt-Up prop anchoring

Installation Procedures



1. Drill the correct diameter and depth of hole specified. Clean hole by brushing and blowing off dust carefully. Do not expand the anchor prior to installation.
2. Push Anchor through fixture and hammer down until flush with surface. Be sure the anchor is driven to the required embedment depth.
3. Using a calibrated torque wrench apply correct torque setting as specified. The torque setting is critical, under torque may lead to slipping of the anchor before load capacity is reached, over torque may lead to permanent damage to the anchor and potential critical failure under loads.

PRODUCT SPECIFICATION MANUAL

Installation Recommendations

Code	Thread Size (mm)	Anchor Diameter (mm)	Hole Diameter (mm)	Min. Hole Depth (mm)	Fixture Clearance Hole Diam. (mm)	Thickness Fastened Range (mm)	Min. Structural Thickness (mm)	Recommended Tight Torque (mm)
HLS08**	M8	12	12	80	14	10-50	110	25
HLS10**	M10	14	14	90	16	10-50	140	50
HLS12**	M12	18	18	105	20	10-50	160	80
HLS16**	M16	24	24	125	26	10-50	200	180
HLS20**	M20	28	28	160	30	10-50	250	400

Material Specification

Code	Thread Size (mm)	Anchor Diameter (mm)	Bolt Strength		Sleeve Strength	
			Yield (N/mm ²)	Ultimate (N/mm ²)	Yield (N/mm ²)	Ultimate (N/mm ²)
HLS08**	M8	12	640	800	410	510
HLS10**	M10	14	640	800	410	510
HLS12**	M12	18	640	800	410	510
HLS16**	M16	24	640	800	375	460
HLS20**	M20	28	640	800	375	460

Simple Load Characteristics

Loads are applicable to 30 MPa concrete and on the correct torque setting. Factors such as close edge or neighbouring anchor spacing may need to be applied.

A safety factor of 2:5:1 is included for M8 and 3:1 included for M10 to M20 of our recommended loads.

Thread Size (mm)	Hole Diameter (mm)	Min Embed. Depth (mm)	Ultimate Strength			Recommended		
			Tension (Kn)	Steel Tensile (Kn)	Tensile Working Load (kN)	Shear Working Load (kN)	Edge Distance (mm)	Anchor Spacing (mm)
M8	12	60	23.4	23.4	9.4	11.7	200	150
M10	14	70	37.1	37.1	12.3	16.1	235	175
M12	18	80	50.3	54.0	16.7	23.1	265	200
M16	24	100	75.6	100.5	25.2	43.5	330	250
M20	28	125	109.8	166.6	36.6	63.2	420	315