



## **Euro Accessories Pin Anchor safe working tolerances.**

### **Reduction in product diameter due to corrosion.**

The hot dip galvanised version of the pin anchor system should give a fifty year life expectancy in moderately exposed environments without needing to resort to actual checks on material deterioration due to corrosion. However in aggressive environments such as coastal placements the pins may need inspecting if the surface coating has fully oxidised and its sacrificial potential has been fully realised.

The crucial diameter to consider is the shaft diameter of the pin, this can be measured under the head of the pin with a pair of external callipers that will fit inside the hemispherical pocket the anchor sits in. The minimum shaft diameters are set out in table 1. These figures take into account minimum manufacturing tolerances with a 0.5mm allowance for reduction in diameter due to corrosion. They are an absolute minimum and should not be reduced without prior discussion with Euro Accessories, we can offer a proof loading test for any cast in anchors that you may feel are suspect or warrant retesting.

### **Material Elongation to creep strain.**

Any mild steel product subjected to continuous or repeated high loads are likely to suffer from creep strain over time, this in turn can lead to a reduction in cross sectional area of the material and ultimately product failure. (See figure A) With this in mind it is imperative that regular checks are carried out on pin anchors subjected to regular or repeated lifting. Elongation of the pin anchor can be checked by measuring the distance between the top of the anchor head and the concrete surface. This distance for various anchor capacities is set out in the table 1.



Figure A left hand image with anchor showing clear evidence of creep strain due to repeated use. Right hand image showing anchor set below concrete surface in newly manufactured concrete.

Table 1 Critical pin dimensions.

Load rating (tonnes)	Minimum shaft diameter (mm)	Minimum Head clearance (mm)
1.3	9.0	9.0
2.5	13.5	10.0
5.0	19.0	14.0
7.5	23.0	14.0
10.0	27.5	14.0
15.0	33.0	14.0
20.0	37.5	14.0
32.0	48.0	27.0

Any examples that fall outside these figures warrant immediate further investigation and any lifting procedures involving the anchors should be ceased.

The suitability of any lifting accessory, lifting point or procedure should be assessed by a competent person supervising the lifting operation. This document is a quick reference guidance document and as such it is not an exhaustive list of parameters affecting safe performance of the Pin Anchor system. It does not rule out additional requirements for thorough and routine examinations of any lifting system.

Damian Smith

Technical Manager

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damian@euroacc.co.uk