

Wire rope lifting hoops

Introduction

Cast-in wire rope lifting hoops are the most economic way of providing a crane hook attachment in precast units. However, they require relatively large edge distances. Consideration must also be given to the exposure of steel rope hoops after panel assembly. Once finally in position, protruding hoops can be cut off, if required, but consideration must still be given to the provision of corrosion protection to the cut ends to avoid rust staining.

The flexibility of steel rope makes it the safest method for forming a cast-in hoop. Lifting loops formed from reinforcement bars are liable to fatigue, particularly if bent during angled lifts.

Provided that hoops are installed in reinforced concrete and to the minimum dimensions in the table, no anchorage reinforcement is generally required. However, for acute angled lifts, additional lateral reinforcement may be required.

Description

Cast-in lifting hoops are manufactured from bright or galvanised mild steel rope. They have a swaged connecting ferrule and a tag that clearly identifies the SWL of the hoop. The tag is designed not to slide down the hoop during casting and should therefore remain visible.

Cast-in hoops are suitable for use through a single cycle from production to final installation but are not suitable for multi-use applications.

Selection

To select the correct size for any lift, carry out the calculation on pages 6 and 7. It is essential to take into account the angle of lift, the crane factor and any adhesion to the formwork.

Installation

Hoops should be installed in the direction of the expected load, with the ferrule directly opposite the direction of pull. They should be suspended from supports attached to the formwork so that $\frac{2}{3}$ of the hoop will be cast-in and $\frac{1}{3}$ remains exposed.

Carefully fasten the hoop to the cage to avoid movement during concreting. If fixed through the shuttering, the wire should be carefully sealed to the shuttering.

Storage

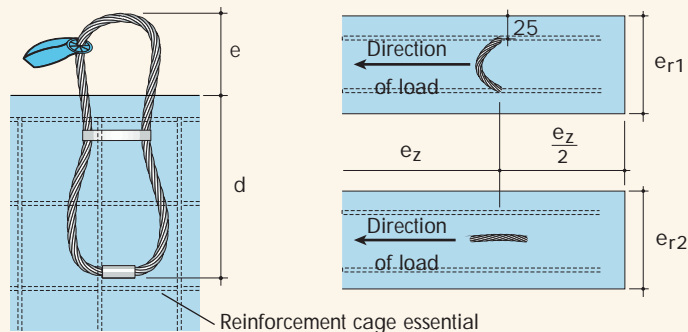
When storing concrete units, care should be taken to avoid bending of steel rope hoops. Hoops should be examined for damage as listed under Method of use below.

Crane linkage

Exposed hoops can be attached to standard crane hooks, provided that the curvature radius of the crane hook is at least equal to the diameter of the rope.

Sizes, availability and edge distances

Wire rope lifting hoops – Code PU



| SWL kg | Order code Mild steel bright galvanised | Dimensions | | Rope diam. mm | Minimum spacings | | | Colour code |
|-----------|---|------------|---------|---------------------|----------------------|-----------------------|-----------------------|----------------|
| | | e mm | d mm | | e _z mm | e _{r1} mm | e _{r2} mm | |
| 800 | PU1008 PU4008 | 60 | 150 | 6 | 540 | 140 | 80 | White |
| 1200 | PU1012 PU4012 | 65 | 160 | 7 | 620 | 150 | 100 | Red |
| 1600 | PU1016 PU4016 | 70 | 165 | 8 | 690 | 170 | 120 | Purple |
| 2000 | PU1020 PU4020 | 80 | 200 | 9 | 830 | 180 | 140 | Light green |
| 2500 | PU1025 PU4025 | 85 | 230 | 10 | 890 | 190 | 160 | Charcoal |
| 4000 | PU1040 PU4040 | 100 | 240 | 12 | 1000 | 220 | 200 | Dark green |
| 5200 | PU1052 PU4052 | 100 | 260 | 14 | 1030 | 300 | 240 | Orange |
| 6300 | PU1063 PU4063 | 110 | 280 | 16 | 1150 | 320 | 280 | Blue |
| 8000 | PU1080 PU4080 | 120 | 320 | 18 | 1290 | 410 | 300 | Light grey |
| 10,000 | PU1100 PU4100 | 135 | 390 | 20 | 1460 | 440 | 320 | Pink |
| 12,500 | PU1125 PU4125 | 150 | 420 | 22 | 1620 | 570 | 360 | Yellow |
| 16,000 | PU1160 PU4160 | 165 | 450 | 24 | 1860 | 630 | 420 | Lilac |
| 20,000 | PU1200 PU4200 | 180 | 550 | 28 | 2120 | 680 | 450 | Ochre |
| 25,000 | PU1250 PU4250 | 200 | 600 | 32 | 2410 | 760 | 500 | Brown |

Larger sizes are available up to 57,000 kg. Please contact Halfen Ltd for standard range of larger sizes.

Method of use

Before casting in, or lifting, check that the hoop is in good condition. A hoop should be discarded if any of the wires are broken, crushed or unravelling, or if there are kinks in the hoop. Also do not use if excessive corrosion is observed. Any cast-in hoop showing sign of damage should not be used.