Elite Concrete techical specifications

5 tonne lifting pin (Temporary Vertical Concrete Barrier TCVB V28) pull out calcs with dynamic loading to 50Kn

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Lift calculation

Project properties

Project description:	Temporary Vertical Concrete Barrier
Part:	TVCB 3150mm x 800mm x 450mm 2500kg
User/Advisor:	Damian Smith (Euro Accessories)
Customer/Applicant:	Elite Precast Concrete
Date:	1/2/2018

General information

Anchortype: hoist anchor

Anchor properties

Anchor type		T-050-0180
Anchor length	L	180 mm
Diameter	D	20 mm
Foot diameter	D_9	50 mm
Haeussler lengths	L_1	195 mm
	L_2	148 mm
	L_3	155 mm

Concrete properties

Concrete cube strength	f_{ck}	20MPa
Situation (at the time of hoisting) : assembly on construction site		
Cover on the foot of the anchor	c_{min}	10 mm
Length	$l_{concrete}$	3150 mm
Width	$w_{concrete}$	450 mm
Height	$h_{concrete}$	800 mm

Loads and load factors

Hoist angle factor	1.00
Bump factor	2.00
Adhesion factor	1.00
Number of anchors	1 st
Weight concrete element	25.0 kN
Force	50.0 kN

ELITE PRECAST CONCRETE

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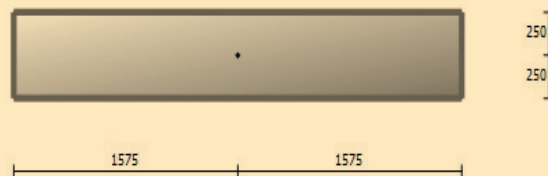### Calculation results Haeussler formulas

Design force formula 1:	N/A kN
Design force formula 2:	580.11 kN
Design force formula 3:	69.83 kN
Design force formula 4:	474.72 kN
Design force formula 5:	374.39 kN
Design force formula 6:	295.27 kN
Design force formula 7:	N/A kN
Design force formula 8:	N/A kN
Design force formula 9:	103.97 kN
Design force formula 11:	N/A kN

Connection with anchortype T-050-0180 is sufficient
(69.83 kN > 50.00 kN), in which 69.83 kN is the lowest capacity from the Haeussler formulas and 50.00 kN is the force on each anchor.
(50.00 kN < (!!) 50.00 kN), in which 50.00 kN is the capacity of the anchor type.

When erecting additional armorment is not taken into account

Remarks : Use 1 off 5.0t x 180mm Pin Anchor for site handling, maximum dynamic load factor 2.0