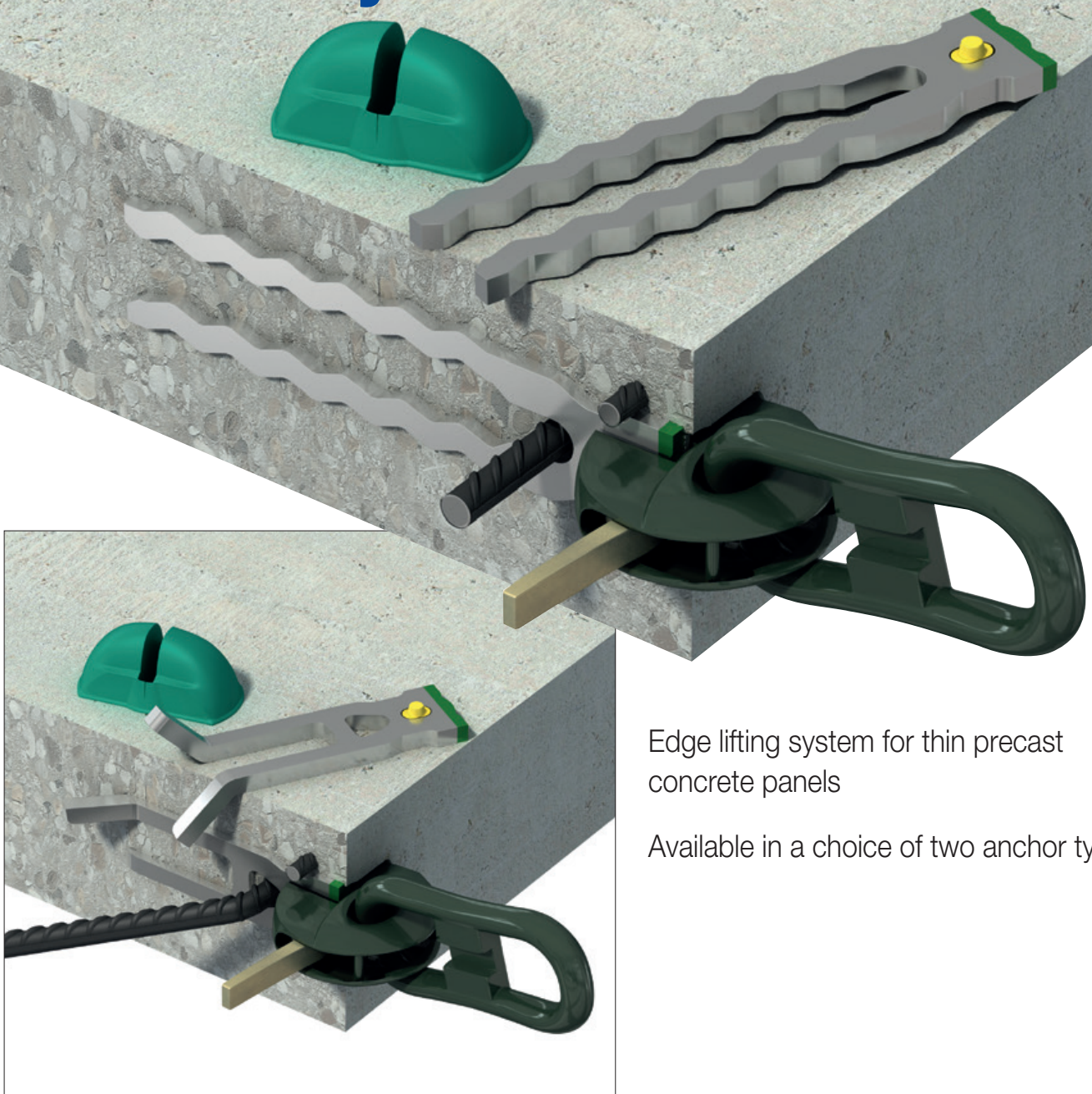


The Innovative **NEW EdjPro Narrow**



Edge lifting system for thin precast
concrete panels

Available in a choice of two anchor types



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Leviat is the new name of CRH's construction accessories companies worldwide.

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EdjPro Narrow Lifting System

NEW

- ✓ All the benefits of the original EdjPro lifting system with smaller recess and anchors
- ✓ Suitable for panel thicknesses from 120mm
- ✓ Ideal for thin panels with step-joint edges
- ✓ Two anchor designs available

STRONG

- ✓ Up to 8 tonnes WLL when used with a 20mm tension bar

VERSATILE

- ✓ Universal recess former and clutch
- ✓ Narrow Clutch may be used with standard EdjPro 8 anchors when lifting in tension e.g. transport and erection

SAFE

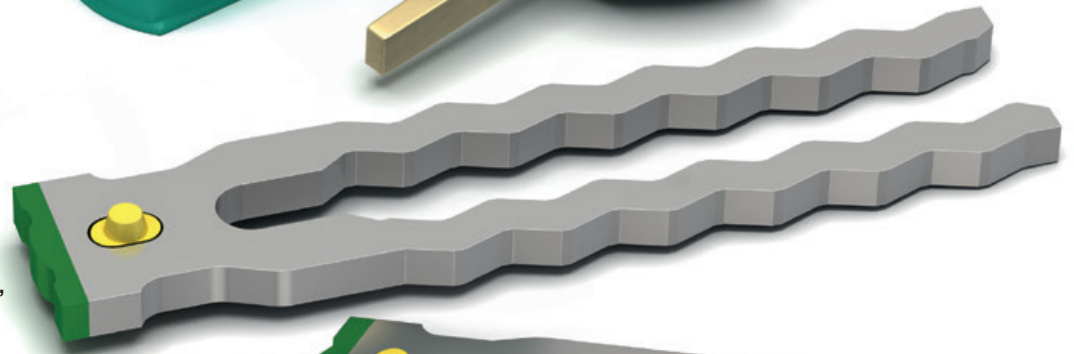
- ✓ Anchor code, WLL and batch number clearly visible when cast into concrete
- ✓ Conforms to WorkSafe NZ Good Practice Guidelines for Safe Work with Precast Concrete (Oct 2018)

EdjPro Narrow
Recess Former
(EPNRF10)

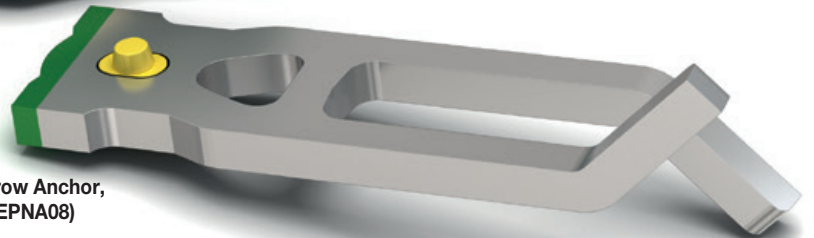


EdjPro
Narrow Clutch
(EPNLC10)

EdjPro Narrow Anchor,
Type 1 (EPNZ08)



EdjPro Narrow Anchor,
Type 2 (EPNA08)

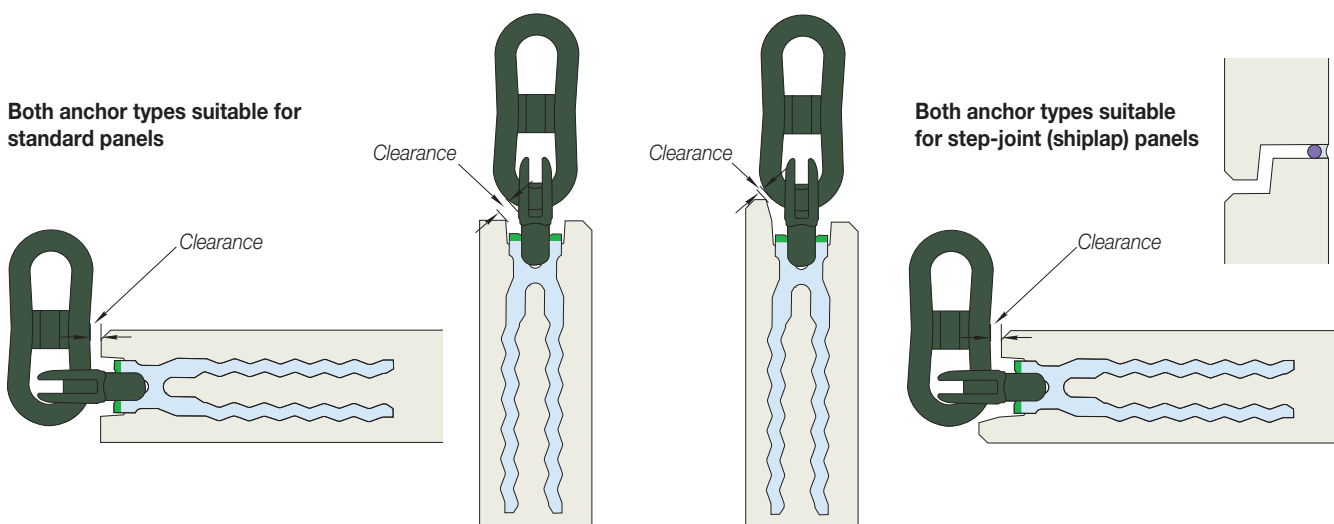


No cracks. No spalls. No patching. Just perfect factory-cast panels.

The EdjPro system was specifically developed to eliminate cracking and spalling around edge anchors. It is ideal for lifting thin factory-cast panels with high surface finish requirements e.g. exterior walls. EdjPro systems preserve panels in their perfect factory cast condition, avoiding remedial work and lowering overall costs.



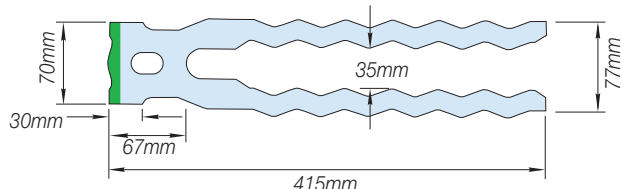
No clutch contact with panel.
Concrete clearance avoids cracking, to maintain perfect panel condition.



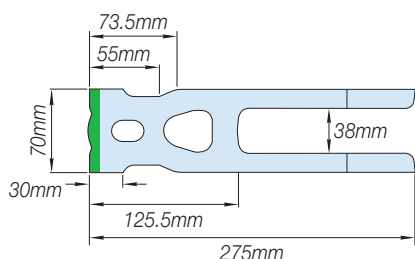
EdjPro Narrow Anchors

Reduced head width, perfect for thin panels

Anchor Type 1, EPNZ08

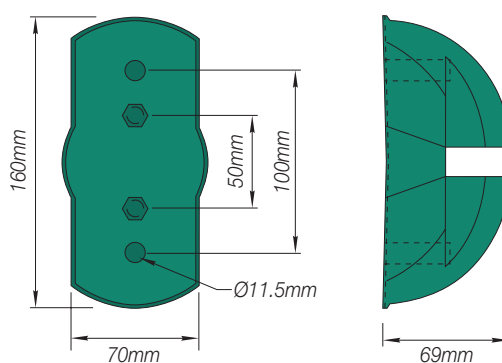


Anchor Type 2, EPNA08



Narrow Recess Former

Slender design, perfect for thin panels and suitable for both anchor types



Anchor Type 1, EPNZ08

Tension Design Capacity

Without Supplementary Reinforcement

| Panel Thickness (mm) | Main Reinforcement Layers | Supplementary Reinforcement | Anchor Working Load, FoS = 3, (Tonnes) | | | | | |
|----------------------|---------------------------|-----------------------------|--|-----|-----|-----|-----|-----|
| | | | Concrete Compressive Strength f_{cm} at time of lift (MPa) | | | | | |
| | | | 15 | 20 | 25 | 30 | 35 | 40 |
| 120 | single or double | None | 3.9 | 4.8 | 5.5 | 6.2 | 6.9 | 7.6 |
| 150 | single or double | None | 4.9 | 5.9 | 6.9 | 7.8 | 8.0 | 8.0 |
| 175 | single or double | None | 5.7 | 6.9 | 8.0 | 8.0 | 8.0 | 8.0 |
| 200 | single or double | None | 6.5 | 7.9 | 8.0 | 8.0 | 8.0 | 8.0 |

Minimal longitudinal reinforcement parallel to the anchor axis in accordance with NZS3101:2006 Cl 11.3.11.3

$$\rho_s = \sqrt{f_c} / 4f_y$$

Precast elements are usually demoulded at concrete strengths in the range f_{cm} 15-25MPa, depending upon curing conditions.

With Supplementary Reinforcement

EPNZ08 Anchors in Tension in Edge of Thin Panels, Reinforced in Accordance with NZS3101:2006

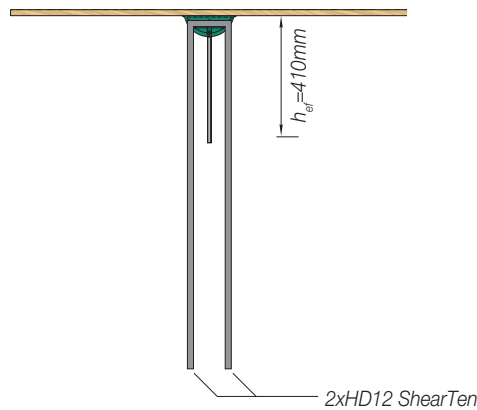
The following details show the minimum supplementary reinforcement, in addition to the minimum longitudinal reinforcement, required to provide the maximum 8t capacity of EdjPro EPNZ08 anchors.

HD10 and HD12 bar capacities based on AS/NZS 4671:2001 class E with $f_y=500$, $f_u=1.15f_y$

Development lengths in accordance with NZS3101 Chapter 8.

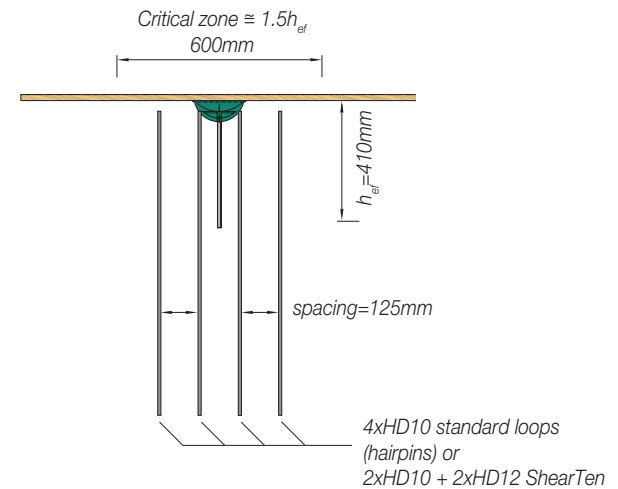
Anchors placed between two layers of main reinforcement

2xHD12 ShearTen or HD12 loops at 125mm spacing

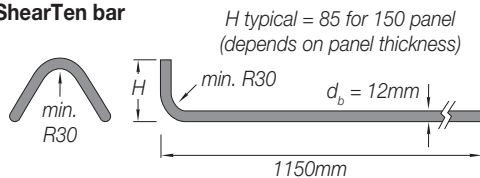


Anchors placed in centrally reinforced panels

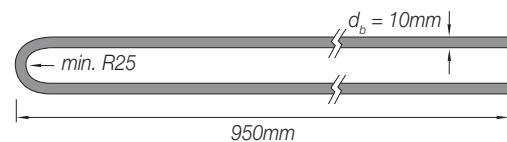
4xHD10 or 2xHD10 + 2xHD12 ShearTen at 125mm spacing



HD12 ShearTen bar



Standard HD10 loop (hairpin)



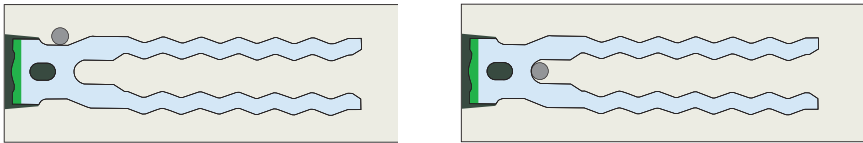
Anchor Type 1, EPNZ08

Shear Design Capacity

Without supplementary reinforcement (shear bars), HD16 edge perimeter bars only

| Panel Thickness (mm) | Anchor Shear Capacity (Tonnes) at Various Concrete Compressive Strengths (MPa) | | | | | |
|----------------------|--|-----|-----|-----|-----|-----|
| | 15 | 20 | 25 | 30 | 35 | 40 |
| 120 | 1.4 | 1.7 | 1.9 | 2.0 | 2.2 | 2.4 |
| 150 | 1.7 | 2.0 | 2.2 | 2.5 | 2.7 | 2.8 |
| 175 | 2.0 | 2.3 | 2.6 | 2.8 | 3.0 | 3.3 |
| 200 | 2.3 | 2.6 | 2.9 | 3.2 | 3.5 | 3.5 |

Edge bars either above the anchor or central

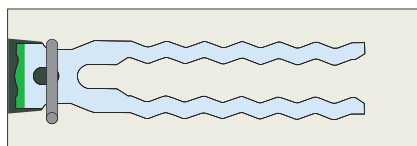
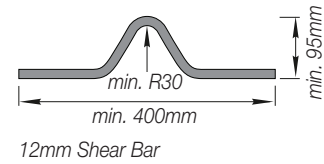


Side Elevations

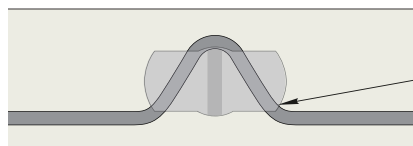
With HD12 shear bars or HD12 ShearTen bars and HD16 edge perimeter bars (not shown)

Consider using Hot Dip Galvanised bars according to cover requirements

| Panel Thickness (mm) | Anchor Shear Capacity (Tonnes) at Various Concrete Compressive Strengths (MPa) | | | | | |
|----------------------|--|-----|-----|-----|-----|-----|
| | 15 | 20 | 25 | 30 | 35 | 40 |
| 120 | 2.1 | 2.4 | 2.7 | 3.0 | 2.9 | 3.4 |
| 150 | 2.5 | 2.9 | 3.2 | 3.5 | 3.5 | 3.5 |
| 175 | 2.9 | 3.3 | 3.5 | 3.5 | 3.5 | 3.5 |
| 200 | 3.2 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |

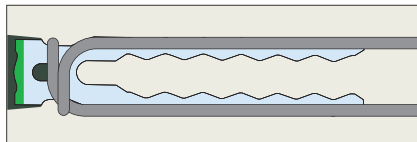


Side Elevation

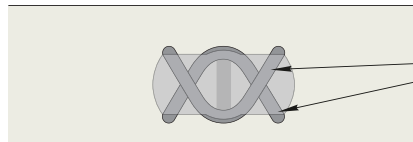


Front Elevation

HD12 Shear bar



Side Elevation



Front Elevation

2xHD12 ShearTen bars

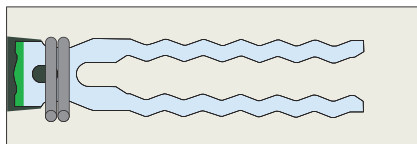
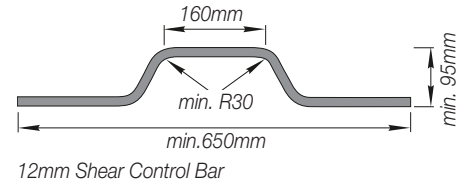
Anchor Type 1, EPNZ08

Shear Design Capacity

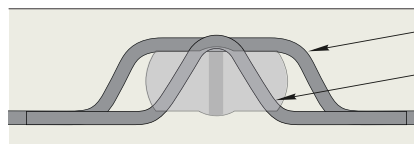
With HD12 shear bars or HD12 ShearTen plus an HD12 control bar and HD16 edge perimeter bars (not shown)

Consider using Hot Dip Galvanised bars according to cover requirements

| Panel Thickness (mm) | Anchor Shear Capacity (Tonnes) at Various Concrete Compressive Strengths (MPa) | | | | | |
|----------------------|--|-----|-----|-----|-----|-----|
| | 15 | 20 | 25 | 30 | 35 | 40 |
| 120 | 2.6 | 3.0 | 3.4 | 3.5 | 3.5 | 3.5 |
| 150 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 175 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 200 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |



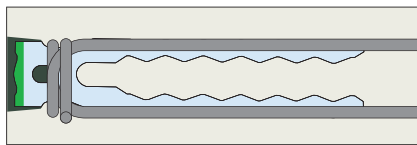
Side Elevation



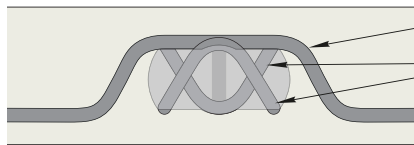
Front Elevation

HD12 Shear Control

HD12 Shear bar



Side Elevation



Front Elevation

HD12 Shear Control

2xHD12 ShearTen bars

Anchor Type 2, EPNA08

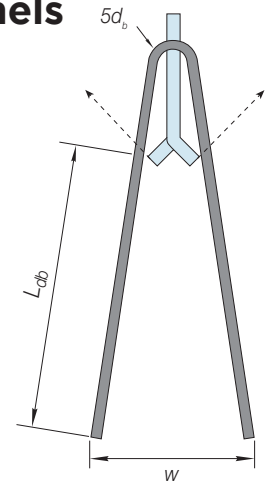
Tension Design Capacity in the Edges of Thin Panels

Type 2 EdjPro anchors are designed to be fitted with either HD16 or HD20 tension bars according to the required capacity.

| Tension Bar 15Mpa | Recommended Development Length (mm) L_{db} | Total Cut Length (mm) | Spread Width (mm) w | WLL Tension (Tonnes) |
|----------------------|---|-----------------------|--------------------------|----------------------|
| HD16 | 1035 | 2350 | 500 | 6 |
| HD20 | 1125 | 2560 | 550 | 8 |

HD16 and HD20 tension bar shear capacities are based on AS/NZS 4671:2001 class E with $f_y=500$, $f_u=1.15f_y$ and NZS3101 2.2.2.3 (d) $\phi = 0.75$.

Tension bar development lengths in accordance with NZS3101 Chapter 8

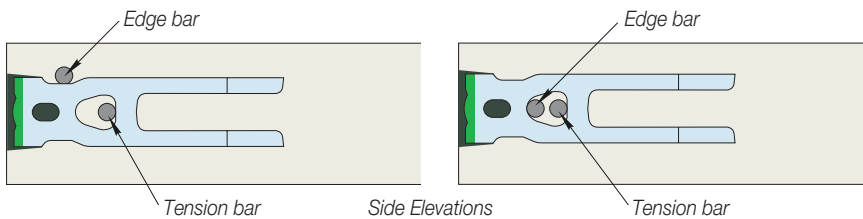


Shear Design Capacity

Without supplementary reinforcement (shear bars), HD16 edge perimeter bars only

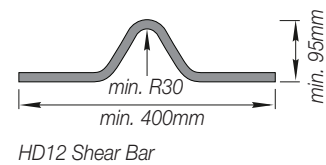
| Panel Thickness (mm) | Anchor Shear Capacity (Tonnes) at Various Concrete Compressive Strengths (MPa) | | | | | |
|----------------------|--|-----|-----|-----|-----|-----|
| | 15 | 20 | 25 | 30 | 35 | 40 |
| 120 | 1.4 | 1.7 | 1.9 | 2.0 | 2.2 | 2.4 |
| 150 | 1.7 | 2.0 | 2.2 | 2.5 | 2.7 | 2.8 |
| 175 | 2.0 | 2.3 | 2.6 | 2.8 | 3.0 | 3.3 |
| 200 | 2.3 | 2.6 | 2.9 | 3.2 | 3.5 | 3.5 |

Edge bars either above the anchor or centrally located



With HD12 shear bars and HD16 edge perimeter bars

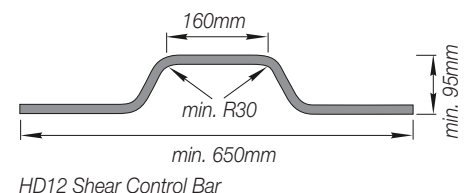
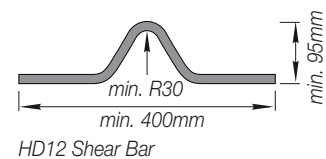
| Panel Thickness (mm) | Anchor Shear Capacity (Tonnes) at Various Concrete Compressive Strengths (MPa) | | | | | |
|----------------------|--|-----|-----|-----|-----|-----|
| | 15 | 20 | 25 | 30 | 35 | 40 |
| 120 | 2.1 | 2.4 | 2.7 | 2.9 | 3.2 | 3.4 |
| 150 | 2.5 | 2.9 | 3.2 | 3.5 | 3.5 | 3.5 |
| 175 | 2.9 | 3.3 | 3.5 | 3.5 | 3.5 | 3.5 |
| 200 | 3.2 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |



With HD12 shear bars or HD12 ShearTen plus and HD12 control bar and HD16 edge perimeter bar

Consider using Hot Dip Galvanised bars according to cover requirements

| Panel Thickness (mm) | Anchor Shear Capacity (Tonnes) at Various Concrete Compressive Strengths (MPa) | | | | | |
|----------------------|--|-----|-----|-----|-----|-----|
| | 15 | 20 | 25 | 30 | 35 | 40 |
| 120 | 2.6 | 3.0 | 3.4 | 3.5 | 3.5 | 3.5 |
| 150 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 175 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 200 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |



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