

HLA-S1

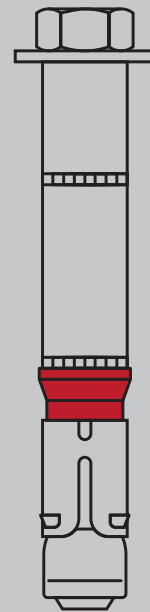
HIGH LOAD STRUCTURAL EXPANSION ANCHOR / 316 (A4) STAINLESS STEEL / C1 & C2 SEISMIC RATED

316

CERTIFICATION

TDS

Technical Data Sheet



NCC
COMPLIANT
AS 5216



For Install Support

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For Specification Support

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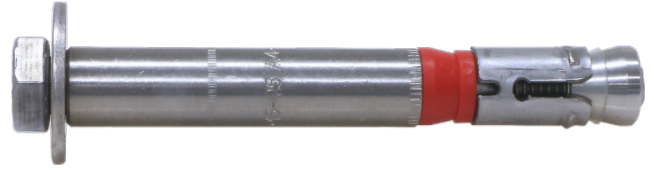
1800 255 349



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HIGH-LOAD EXPANSION ANCHOR / 316 (A4) STAINLESS STEEL / C1 & C2 SEISMIC RATED

HLA-S1

 High-Load Structural Expansion Anchor,
316 (A4) Stainless Steel, C1 & C2 Seismic Rated

 NCC
COMPLIANT
AS 5216


- High strength mechanical anchor, thick sleeve gives additional shear strength
- Connecting structural steel to concrete, temporary works, heavy loads, industrial
- A4 (316) stainless steel for corrosive environments, outdoors

AS 5216 Compliant

ETA Cracked and Uncracked Concrete

C1 & C2 Seismic Rated

R30 – R120 Fire Rated

Swiss Shock Load Approval

Supported by AFOS Anchor Design Software

Anchor Summary

| Part Number | Description, Dia-t _{fix} x L | Drill Dia, d ₀ | Max. Fixture Thickness, t _{fix} ¹⁾ | Bolt Thread Dia | Effective Anchor Depth, h _{ef,min} - h _{ef,max} | Embedment Depth, h _{nom} | Drill Hole Depth, h _i | Min. Concrete Thickness, h _{min} | Seismic C1 / C2 | Design Capacity in 32MPa Cracked Concrete ^{1) 2)} | | Indicative Price Per Fixing ³⁾ |
|--------------|---------------------------------------|---------------------------|--|-----------------|---|-----------------------------------|----------------------------------|---|-----------------|--|--------|---|
| | | | | | | | | | | Tension | Shear | |
| 1022.0150116 | 15-25 x 116mm | 15mm | 25mm | M10 | 71 - 96mm | h _{ef} + 14mm | h _{ef} + 24mm | h _{ef} + 69mm | ✓ / ✓ | 13.4kN | 27.2kN | \$29.95 |
| 1022.0150136 | 15-45 x 136mm | | 45mm | | 71 - 110mm | | | | | | | |
| 1022.0180127 | 18-20 x 127mm | 18mm | 20mm | M12 | 80 - 100mm | h _{ef} + 15mm | h _{ef} + 25mm | h _{ef} + 80mm | ✓ / ✓ | 20.7kN | 41.5kN | \$49.19 |
| 1022.0180147 | 18-40 x 147mm | | 40mm | | 80 - 120mm | | | | | | | |
| 1022.0240150 | 24-20 x 150mm | 24mm | 20mm | M16 | 100 - 120mm | h _{ef} + 20mm | h _{ef} + 30mm | h _{ef} + 100mm | ✓ / ✓ | 29.0kN | 58.0kN | \$97.89 |
| 1022.0240180 | 24-50 x 180mm | | 50mm | | 100 - 150mm | | | | | | | |

 1) At minimum anchor depth, h_{ef,min}

2) Without concrete edge or anchor spacing influence. Static and quasi-static load such as wind. To consider all design inputs and details, please refer to our AFOS Anchor Design Software or the ETA.

3) Based on a volume of 100+ to 200+ fixings, as of March 2026.

Example 1

- Using AFOS "HLA-S1 M12, h_{ef} = 80mm" was specified. There is a 10mm thick base plate without packing or grout under, giving a total fixture thickness of 10mm.
- 18-20 x 127mm HLA-S1 is the correct anchor to use. The 147mm long anchor can be used also, but it would be unnecessarily more costly or could be too long for the concrete thickness.

Example 2

- Using AFOS "HLA-S1 M12, h_{ef} = 90mm" was specified. There is 20mm of packing and a 10mm thick base plate, giving a total fixture thickness of 30mm.
- 18-40 x 147mm HLA-S1 is the correct anchor to use. The maximum fixture thickness is 40mm at h_{ef} = 80mm. So at h_{ef} = 90mm the 147mm long anchor can accommodate a fixture thickness of 40mm-(90-80)=30mm.

HLA-S1

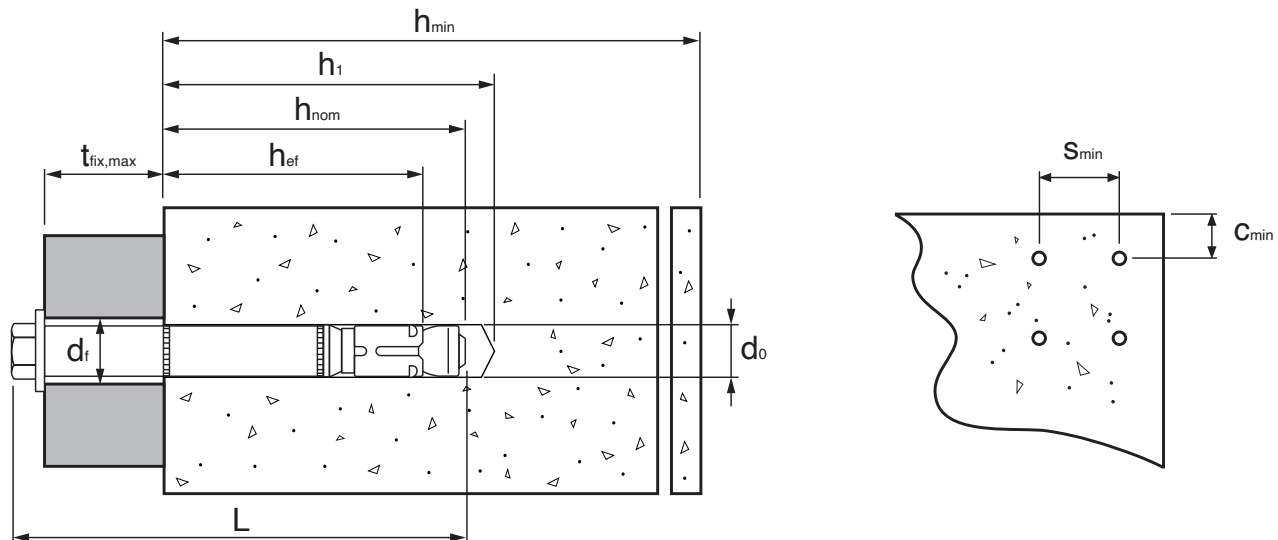
HIGH-LOAD EXPANSION ANCHOR / 316 (A4) STAINLESS STEEL / C1 & C2 SEISMIC RATED

Installation Parameters

| Anchor Size | | [mm/M] | 15/M10 | 18/M12 | 24/M16 |
|---|---------------|--------|---------------|---------------|----------------|
| Bolt Thread Diameter | | | M10 | M12 | M16 |
| Minimum effective anchorage depth | $h_{ef, min}$ | [mm] | 71 | 80 | 100 |
| Maximum effective anchorage depth | $h_{ef, max}$ | [mm] | 110 | 130 | 150 |
| Embedment depth | h_{nom} | [mm] | $h_{ef} + 14$ | $h_{ef} + 15$ | $h_{ef} + 20$ |
| Drill hole diameter | d_0 | [mm] | 15 | 18 | 24 |
| Depth of drill hole | $h_1 \geq$ | [mm] | $h_{ef} + 24$ | $h_{ef} + 25$ | $h_{ef} + 30$ |
| Diameter of clearance hole in the fixture | $d_f \leq$ | [mm] | 17 | 20 | 26 |
| Installation torque | T_{inst} | [Nm] | 50 | 80 | 170 |
| Minimum thickness of member | h_{min} | [mm] | $h_{ef} + 69$ | $h_{ef} + 80$ | $h_{ef} + 100$ |
| Minimum spacing ^{1) 2)} cracked concrete | s_{min} | [mm] | 60 | 70 | 80 |
| | for $c \geq$ | [mm] | 120 | 140 | 180 |
| Minimum edge distance ^{1) 2)} cracked concrete | c_{min} | [mm] | 60 | 70 | 80 |
| | for $s \geq$ | [mm] | 120 | 160 | 200 |
| Minimum spacing ^{1) 2)} uncracked concrete | s_{min} | [mm] | 60 | 70 | 80 |
| | for $c \geq$ | [mm] | 120 | 140 | 180 |
| Minimum edge distance ^{1) 2)} uncracked concrete | c_{min} | [mm] | 85 | 70 | 180 |
| | for $s \geq$ | [mm] | 185 | 160 | 80 |

1) Intermediate values by linear interpolation

2) For fire exposure from more than one side $c \geq 300\text{mm}$ or $c_{min} \geq 300\text{mm}$ applies.



Installation Instructions

| Drill hole preparation and cleaning | | Install expansion anchor | | | |
|-------------------------------------|--|---|---|--|---|
| 1 | | Drill hole perpendicular to concrete surface. Using a vacuum drill, continue with step 3. | 3 | | Drive in anchor. |
| 2 | | Blow out dust or alternatively vacuum clean down to the bottom of the hole. | 4 | | Apply installation torque T_{inst} by using a calibrated torque wrench. |

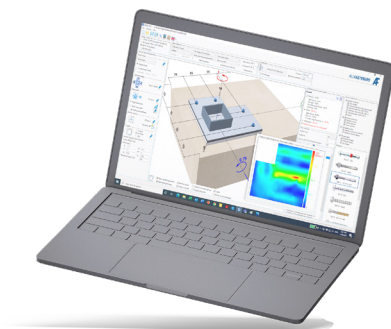
For other anchor properties, please refer to the ETA on our website.



AFOS[®]
Anchor Design Software

DOWNLOAD

allfasteners.com.au/afos



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