

AEFAC STANDARD PART I

DESIGN OF POST-INSTALLED AND CAST-IN FASTENINGS TO CONCRETE

The standard is closely based on prEN 1992-4:2013 but with adaptations to reflect the Australian climate (terminology, Australian Standard references, etc.).

This standard will effect all “safety critical” fastening applications to concrete, i.e. those which failure could result in injury / fatality.

AEFAC STANDARD PART II

TESTING AND ASSESSMENT OF POST INSTALLED AND CAST-IN FASTENERS TO
CONCRETE

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It is expected that such design work will need to be done via software rather than design manuals.

The standard is based on use of only “approved or certified” anchors. Products already certified with the European ETAG will automatically be approved. Local testing and certification will be possible though for products not currently carrying European ETAG.

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Scope

a) Post-installed fasteners –

- i. Mechanical anchors (e.g. expansion anchors, undercut anchors and concrete screws)
- ii. Chemical anchors (e.g. bonded anchors, bonded expansion anchors)

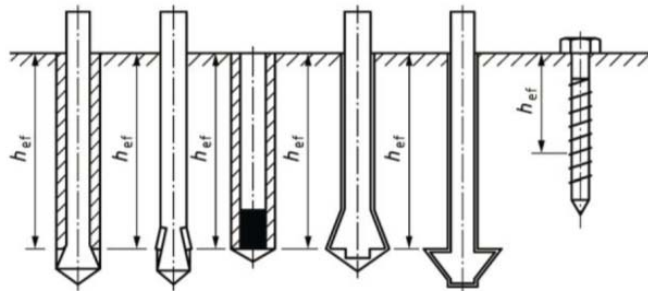
b) Cast-in fasteners –

- i. Headed fasteners
- ii. Anchor channel with rigid connection (e.g. forged or welded) between the channel and anchor

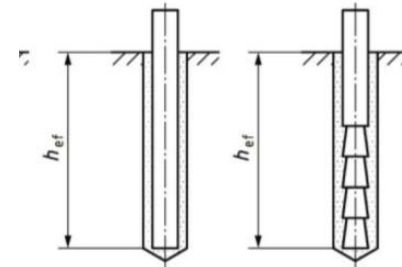
1.1.1 Scope

This Standard provides the minimum requirements for the design of individual fasteners or fastener groups used to transmit loads to concrete.

Post-Installed

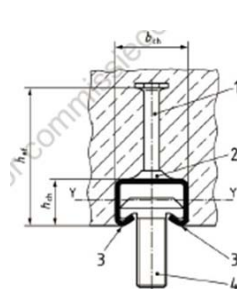


Mechanical Anchors

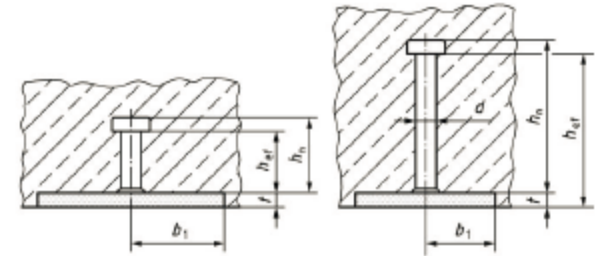
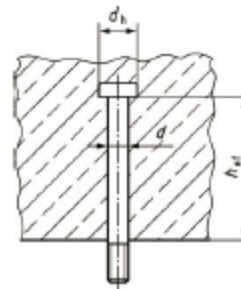


Chemical Anchors

Cast-in



Anchor Channel



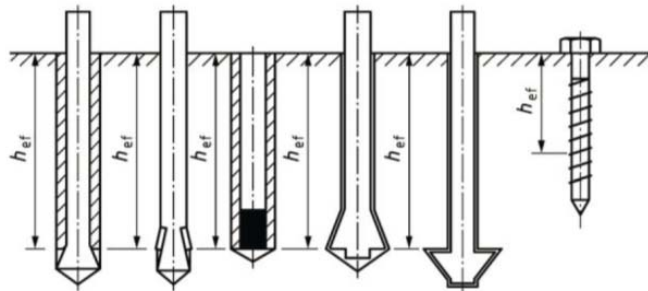
Headed Fasteners

- **1.1.3 Exclusions**
- This Standard is applicable to the design of permanent structures. It is not intended for the design of fasteners for use in applications pertaining to lifting, transport or erection of prefabricated concrete elements.
- This Standard shall not be used for the design of fasteners that do not have a Report of Assessment.
- This Standard does not apply to fasteners in redundant non-structural systems whereby excessive slip of
- failure of a fastener will result in the load being transmitted to neighbouring fasteners without violating the
- serviceability and ultimate limit state requirements of the fixture.
- **This Standard does not apply to other types of fasteners such as lifting inserts, brace inserts, ferrules, post installed**
- reinforcing bars, headed reinforcement or anchorage for prestressing strands.
- The design provisions in this Standard for anchor channels do not apply to the following

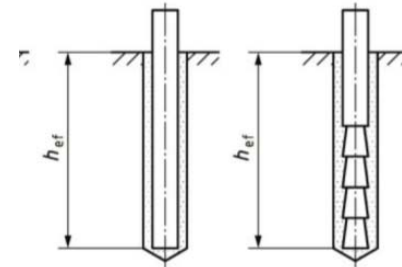
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**Post-
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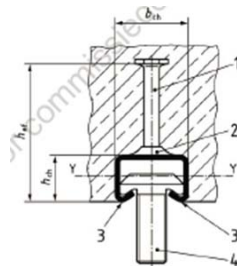


Mechanical Anchors

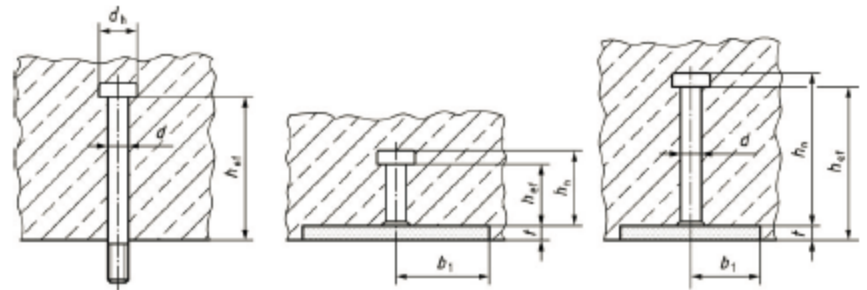


Chemical Anchors

Cast-in



Anchor Channel



Headed Fasteners

Outcome of AEFAC Committee Meeting 26/5/15

(1) A commentary will be added to 1.1.2, to the effect of;

“For applications not covered by the scope of this Standard, such as the design for durability, design for seismic loading, design for exposure to fire, design in other types of base material, design for fatigue, and other types of fastening products for safety-critical applications, the design engineer should seek technical support from the fastening supplier.”

(2) Cast In Headed Fasteners will be excluded from the standard completely.