

CAST³⁺ COMPOSITE ANODE SYSTEM FOR THE ACTIVE CORROSION PROTECTION OF STEEL IN CONCRETE



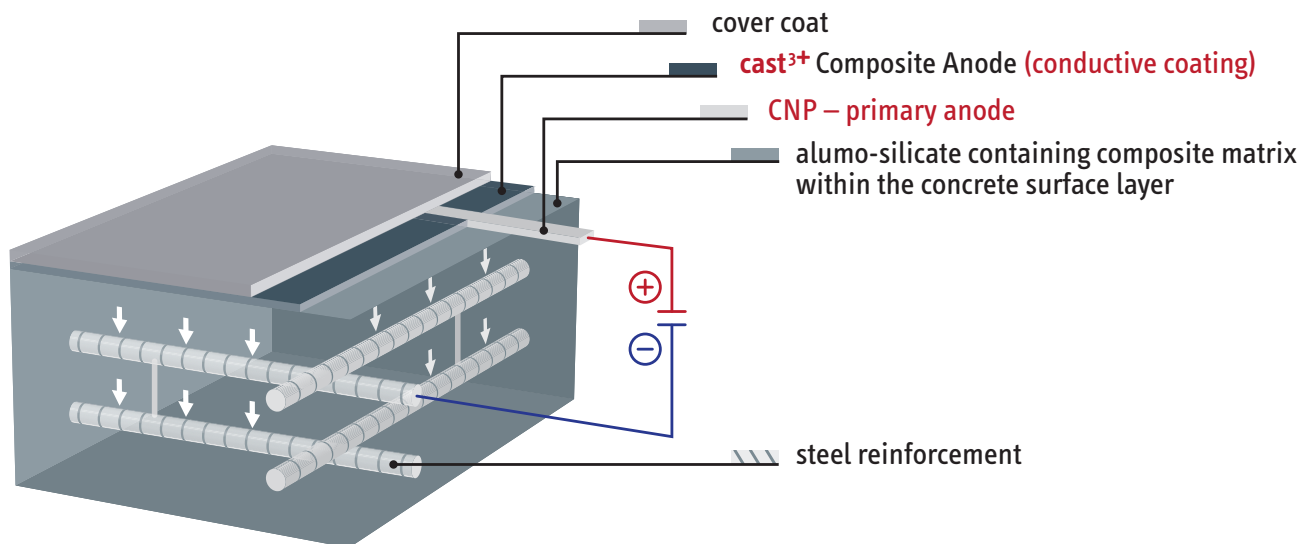
CORROSION PROTECTION

The CAST³⁺ Composite Anode System is specially designed for the reliable and durable protection of steel in concrete from corrosion:

- » The Composite Anode System is directly applied onto the pre-treated (sandblasted, shot-peened, hpcw at 400 bars) concrete surface.
- » The current distribution into the Composite Anode is effected by CNP- or APR primary anodes.
- » As cover coats, standard coatings or sealings for concrete may be applied. If high current densities are required or expected, CAS should be contacted

The CAST³⁺ Composite Anode System functions as barrier to chloride penetration into concrete even at low voltages and low currents and may be applied as a preventive corrosion protection system in combination with pavement coatings.

The cast³⁺ Composite Anode System



CONFIGURATION AND REQUIREMENTS

» Resistant to weathering, frost-thaw salt resistant, moisture resistant, compatible with the standard acryl coatings, epoxy- and PU-primers and pavement sealing's.

» Concrete Surface Pre-treatment: sandblasting, shot-peening, hpwj. concrete surfaces to be impregnated with the primer CAP 60, cleaning with hpwj at 400 bars is sufficient.

» Primer CAP 60: it is recommended to impregnate the concrete surface with the primer CAP 60 (200 – 300 g/m²). The impregnation results in a higher electrolytic conductivity of the near surface layer of the concrete, a solidification of the concrete surface and an increased adhesion of the CAST³⁺ composite anode on the concrete sub base.

» CAST³⁺ Composite Paint: The CAST³⁺ composite paint is applied in two layers (600 g – 1000 g/m²) by rolling or by airless spray. Up to 900 g/m² may be applied on dry concrete surfaces in one pass by airless spray. It is recommended to apply the CAST³⁺ composite paint in two passes if the concrete surface is wet or if the ambient temperatures are below 15°C. The CAST³⁺ composite paint shall not be applied at temperatures below 10 °C.

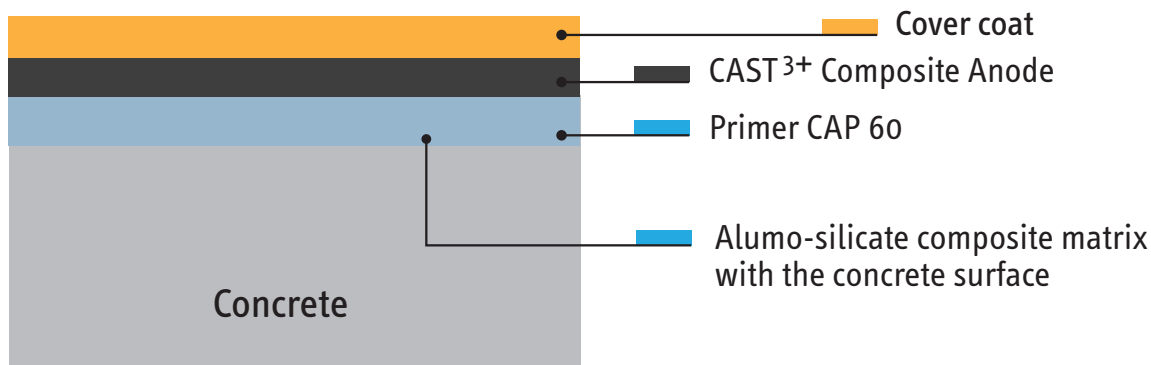
A dry film thickness of 350 µm is reached with 850 g/m².

» Primary Anodes: The current distribution into the CAST³⁺ composite anode is effected by primary anodes embedded



into the CAST³⁺ composite coating. The CNP primary anode is installed if the CAST³⁺ composite anode is exposed to high current densities (> 10 mA/m²) and/or outdoor weathering. The APR primary anode is recommended if the CAST³⁺ composite anode is operated with current densities < 10 mA/m² and protected from direct weathering.

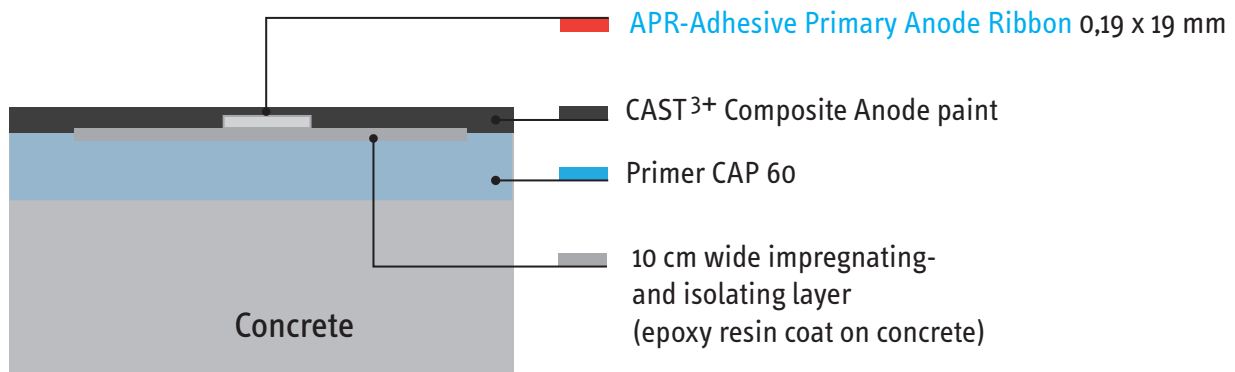
» Cover Coat: standard coatings for concrete may be used. It is recommended to contact CAS if high current densities (> 5 mA/m²) are expected. The CAST³⁺ composite paint shall be hardened for at least one week (20°C) before applying the cover coat.



PRIMARY ANODE SYSTEMS

Installation of the **APR primary anode**:

10 cm wide stripes of electrically insulating epoxy resin (distance about 300 cm) are applied onto the concrete surface according to the layout. The self-adhesive APR primary anode is glued onto the hardened epoxy resins stripes and embedded into the CAST³⁺ composite anode applied by roller or by airless spray.



Installation of the **CNP primary anode**:

The CNP primary anode is applied directly to the concrete surface if the CAST³⁺ paint is applied by airless spray.

If the CAST³⁺ composite paint is applied by rollers then the CNP primary anode is mounted after the application of the first layer of the CAST³⁺ composite paint and then embedded into the second layer of the CAST³⁺ composite paint. A 10 cm wide glass fiber ribbon may be glued on top of the CNP primary anode to protect the anode wire from mechanical damages.

On pavements, the CNP primary anode is preferentially mounted in 3 - 5 mm wide and 1 mm deep rills grooved into the concrete.

