MasterCrete ANC 920

A high-performance, styrene-free vinyl ester resin-based chemical anchor, designed for medium- and high-load applications.

Material description

MasterCrete ANC 920 is a two-component, thixotropic, styrene-free, vinyl ester-based chemical anchor for high-performance applications.
The product is specifically formulated for medium- and high-load anchors on a variety of substrates, both horizontally and vertically.
The two components of **MasterCrete ANC 920** are contained in a single coaxial cartridge with separate compartments, and are automatically mixed in the mixing nozzle once pressure is applied to the bottom piston.

Main uses

The two-component vinyl ester anchor **MasterCrete ANC 920** enables high-performance anchoring of threaded bars and reinforcing bars.
Some examples of application are:

- anchoring of bars with improved grip and threaded bars in concrete, reinforced concrete, masonry and wood substrates;
- vertical and horizontal anchoring, for both indoor and outdoor applications;
- anchoring of metal structures and fixing of non-structural elements where high performance is required for safety reasons.

Features

- High adhesion performance on a variety of substrates and under various conditions.
- Rapid development of resistance and hardening.
- Quick and easy application thanks to the mechanical mixing system built directly into the nozzle.
- Thixotropic consistency for easy application vertically and overhead, and suitable for use at low temperatures (-40°C).
- The product can also be applied to damp surfaces.
- **ETA certificate for anchors in cracked and non-cracked concrete**.
- **ETA certificate for post-installed** and fire-resistant anchors.
- Low VOC emissions: **Class A+.**

CE 0051
CE 1404 2025 **ETA-25/0023** EAD 330087-01-0601 1404-CPR-3831

CE 0051
CE 1404 2025 **ETA-25/0024** EAD 330499-02-0601 1404-CPR-3832

Consumption

The number of cartridges used will depend on the volume to be filled.
For each anchor to be installed, it is recommended that the borehole be filled to 3/5 of its total volume.

Packaging and storage

MasterCrete ANC 920 is available in 410 ml coaxial cartridges. Boxes of 12 pieces.
Keep the product in its original packaging in a dry, protected location at a temperature between +5°C and +35°C.
Under the above conditions, the product has a shelf life of 18 months.

Preparation and method of application

Preparing the substrates

- Drill the hole to suit the anchor bar, in accordance with the design specifications.
  Remove all dust from the drill hole using a vacuum cleaner, compressed air or cleaning brushes.
- The substrate must therefore be clean, sound and free from any substances that could impair the adhesion of the chemical anchor.
- The surface may be damp but not wet, and any film of water must be removed using compressed air and a vacuum cleaner.

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Preparing the cartridge-based anchor

Open the coaxial cartridge of **MasterCrete ANC 920** by removing the sealing cap, and insert the mixing nozzle.
Insert the cartridge into the appropriate coaxial cartridge gun and extrude an initial amount of waste product outside the hole to be filled, to ensure that the product achieves a uniform colour and appearance.
If the application is to be interrupted for a prolonged period, remove the mixing nozzle and replace the sealing cap.

Installation

Extrude **MasterCrete ANC 920** from the cartridge using a manual, electric or pneumatic gun, filling between 3/5 and 2/3 of the volume of the hole previously drilled.
The filling should be done starting from the bottom and working upwards towards the surface.

The metal component to be anchored is to then be inserted into the still-fresh product, rotating it slightly as it is pushed in deeper. Before applying load to the anchor, allow sufficient curing time.

When using **MasterCrete ANC 920** for anchoring in hollow-core block masonry, use special sleeve anchors where necessary to prevent the product from being wasted.

Application temperatures

The ambient temperature at the application site must be between -40°C and +40°C (the cartridges must, however, be stored at a temperature above +5°C until the time of application).

Warnings

- Do not apply directly on plaster, crumbly, mixed or painted surfaces. The support must be strong enough to bear the design loads.
- Do not add cementitious binders, sand or any other substances that could affect the product's properties.
- Do not use the first portion of the product that comes out of the mixing nozzle; wait until its colour and consistency are uniform.

Technical data

Product identification data	
Packaging	410 ml coaxial cartridges Boxes of 12 cartridges
Type of anchor	Vinyl ester, styrene-free
Consumption	Depending on the volume to be filled.
Texture	Plastic-Thixotropic
Flexural modulus (EN ISO 178 / ASTM 790)	4000 MPa
Tensile modulus (EN ISO 527 / ASTM 638)	8500 MPa
Workability time (Resin temperature > 20°C)	At -10°C: 50 min At -5°C: 40 min At +5°C: 20 min At +15°C: 9 min At +25°C: 5 min At +35°C: 3 min

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Curing time on dry concrete (Resin temperature > +20°C; in damp conditions, double the curing time)	At -10°C: 240 min At -5°C: 180 min At +5°C: 90 min At +15°C: 60 min At +25°C: 30 min At +35°C: 20 min
Application temperature (Resin temperature must always be above +5°C)	-40°C to +40°C
VOC content	Class A+

Performance – Tensile strength with standard anchorage depth

Concrete, C20/C25, 5.8 threaded bar						
Bar size	Recommended load (kN)		Distancing (Scr,N)	Tip diameter	Hole diameter	Anchoring depth
	Tension (Nrec)	Shear (Vrec)	(mm)	(mm)	(mm)	(mm)
M8	9.07	5.14	160	10	9	80
M10	14.02	8.57	200	12	12	90
M12	19.71	12.00	240	14	14	110
M16	29.92	22.29	320	18	18	125
M20	48.75	34.86	400	22	22	170
M24	69.12	50.29	480	28	26	210
M30	94.25	81.43	560	35	32	280

Performance – Strength properties of cellular concrete

Typical tensile and shear strength values for autoclaved aerated concrete. Compressive strength of the substrate > 6 MPa. Operating temperatures from -40°C to +40°C.

Bar size	Condition	d/d	w/w & w/d	d/d, w/w & w/d
	Hef (mm)	Tension (kN)	Tension (kN)	Shear (kN)
M8	80	2.0	1.5	5.0
M10	90	3.0	2.5	8.0
M12	100	4.0	3.5	8.0
M16	100	5.5	4.5	8.0

Note: These values apply to threaded bars of grade 5.6 or higher. For classes 4.6 and 4.8, multiply the VRk,b values by 0.8.

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Performance – Standard loads for hollow-block masonry

Category C: Perforated blocks, Double UNI (12, 12, 25), Minimum compressive strength f_D = 6.0 MPa							
Bar size	Installation parameters					Loads	
	Bar D / Hole D (mm)	Sleeve	Max D d_{fix} (mm)	Depth h_1 (mm)	Torque T_{inst}	Traction NRK (kN)	Shear Vrk (kN)
M6	6 / 12	12 x 80	7	85	2	0.75	1.5
M8	8 / 12	12 x 80	9	85	2	0.75	1.5
M10	10 / 16	16 x 85	12	90	2	1.5	1.5
M12	12 / 16	16 x 85	14	90	2	1.5	1.5

Performance – Chemical resistance

Corrosive substance	Concentration	Resistance
Acetic acid solution	10%	Withstands contact with temperatures up to 25°C
Aluminium chloride solution	At saturation	Withstands temperatures up to 75°C without a loss of properties of more than 20%
Aqueous solution of aluminium nitrate	10%	Withstands temperatures up to 75°C without a loss of properties of more than 20%
Ammonia	5%	Withstands temperatures up to 75°C without a loss of properties of more than 20%
Sodium hypochlorite solution	15%	Withstands temperatures up to 75°C without a loss of properties of more than 20%
Butyl alcohol	100%	Withstands contact with temperatures up to 25°C
Aqueous solution of hydrochloric acid	At saturation	Withstands temperatures up to 75°C without a loss of properties of more than 20%
Diesel fuel	100%	Withstands contact with temperatures up to 25°C
Aqueous ethanol solution	20%	Withstands contact with temperatures up to 25°C
Lubricating oil	100%	Withstands temperatures up to 75°C without a loss of properties of more than 20%
Kerosene	100%	Withstands contact with temperatures up to 25°C
Phosphoric acid	50%	Withstands temperatures up to 75°C without a loss of properties of more than 20%
Seawater	100%	Withstands contact with temperatures up to 25°C
Sulphuric acid	50%	Withstands temperatures up to 75°C without a loss of properties of more than 20%
Turpentine	100%	Withstands contact with temperatures up to 25°C

If **MasterCrete ANC 920** comes into contact with substances not included in the list above, please contact the Master Builders Solutions technical department for further information.

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Safety instructions

For guidance on the correct and safe use, transport, storage and disposal of the product, please see the latest Safety Data Sheet (SDS).

Other services

For additional technical information, brochures, references, technical reports and technical assistance please visit www.master-builders-solutions.com/it-it or alternatively contact infomac@masterbuilders.com.

Scan QR code to visit the product page and download the latest version of this technical sheet and any additional documentation.

Disclaimer

Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.
For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.
Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.
This version supersedes all the previous ones.

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