

velosit



velosit
falcon

PRODUCT CATALOGUE ADMIX



CRYSTALLINE WATERPROOFING SYSTEM

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TOP PROJECTS

Fouka Bay Sidi Abel Rahman, Egypt



43-MW biomass plant located in Choloma and owned by local company Honduran Green Power Corporation (HGPC). The power plant uses biomass for the generation of electricity for distribution in the local area.

About 475 Kg of VELOSIT CA 112/113 and along with other products were used in the project for waterproofing and corrosion prevention.

Honduran Green Power Corporation HGPC Choloma, Honduran

In partnership with world-renowned Italian architects Gianluca Peluffo and Partners, Fouka Bay resort was built and was awarded 2018 Top Mediterranean Resort.

450,000 m² of screed used in Fouka Bay was waterproofed with the crystalline technology using VELOSIT CA 112/113 add as well self-healing property for the whole structure.



APPLICATIONS

BASEMENTS



PARKING STRUCTURES



SLAB



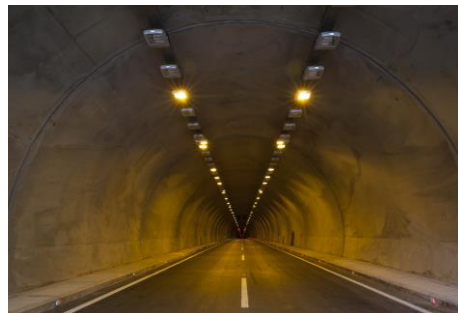
POTABLE WATER STRUCTURES



SHOTCRETE



TUNNELS AND PIPELINES



ELEVATOR PITS



SEWAGE STRUCTURES



VELOSIT CA 112

Crystalline waterproofing is a unique technology that reduces pore diameter and pore volume in concrete. VELOSIT CA 112 is a powder admixture that initiates a crystalline reaction in concrete. The reaction takes place and creates a permanent reduction of water permeability. Besides that, it allows the structure to self-heal shrinkage cracks under contact with water.



Easy to mix and economical



Waterproof up to 16 bars



Potable water approved



Self healing up to 0.5 mm of static cracks



Increased final strength



Increased resistance against aggressive pH media

Main Properties

Property	Unit	VELOSIT CA 112	Standard
Dosage by weight of cement	%	0.8 @ 0.45 w/c ratio	-
Added hydrophobic property	-	Slightly	-
Added corrosion inhibitor	-	No	-
Self-healing capacity	mm	0.5	-
Water impermeability (Positive side)	bar	16	EN 12390-8
Water impermeability (Negative side)	bar	16	EN 12390-8
Compressive strength +7 days	-	+2 %	-
Compressive strength +28 days	-	+3 %	-

Packaging

VELOSIT CA 112 is available in two pack sizes:
20 Kg (44 lb.) Watertight Plastic Bag
1000 Kg (2200 lb.) Big Bag



VELOSIT CA 113

Crystalline waterproofing is a unique technology that reduces pore diameter and pore volume in concrete. VELOSIT CA 113 is a powder admixture that initiates a crystalline reaction in concrete. It has extra properties compared with VELOSIT CA 112 due to added hydrophobic and corrosion inhibitor agents. Besides that, it allows the structure to self-heal shrinkage cracks under contact with water.



Easy to mix and economical



Waterproof up to 16 bars



Potable water approved



Self healing up to 0.4 mm of static cracks



Increased final strength



Increased resistance against aggressive pH media



Hydrophobic



Corrosion inhibitor

Main Properties

Property	Unit	VELOSIT CA 113	Standard
Dosage by weight of cement	%	1.13 @ 0.45 w/c ratio	-
Added hydrophobic property	-	Yes	-
Added corrosion inhibitor	-	Yes	-
Self-healing capacity	mm	0.4	-
Water impermeability (Positive side)	bar	16	EN 12390-8
Water impermeability (Negative side)	bar	13	EN 12390-8
Compressive strength +7 days	-	0 %	-
Compressive strength +28 days	-	+1 %	-

Packaging

VELOSIT CA 113 is available in two pack sizes:
20 Kg (44 lb.) Watertight Plastic Bag
1000 Kg (2200 lb.) Big Bag



HOW IT WORKS?

Steps

1



2

Add VELOSIT CA 112/113 to the concrete at the time of batching.



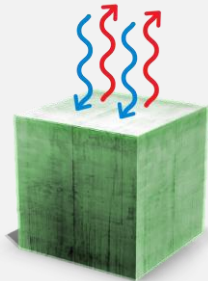
Water-soluble salts accumulate inside the capillary pores and react with dissolved Calcium Hydroxide released during cement hydration.

3



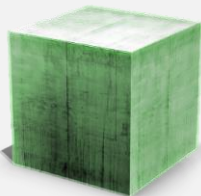
4

The reaction results in a dense network of insoluble crystals that fill up pores and cracks,



In case of contact with water the reaction will resume automatically pushing the moisture out of the structure.

5



Water and harmful chemicals won't be able to penetrate to the structure anymore.



This smart use of chemistry is permanent and stays actively dormant inside the concrete for the whole life span of the structure.

APPLICATION PROCEDURE

The dosage depends on the amount of mixing water aggregate moisture included in the batch mix. In a typical 300 Kg cement per m³ with a water/cement ratio of 0.45, a dosage of 0.8% of CA 112 or 1.13% of CA 113 of cement weight must be added.

1. Batch-plant: Add VELOSIT CA 112/113 together with the aggregates. Use normal mixing procedure.
2. Concrete truck (any of the following options may be used):
 - a. Mix the CA 112/113 powder mechanically with an equal amount of water using a slow speed drill (300-500 RPM) in a plastic bucket (DO NOT USE METAL BUCKETS) prior to adding into the truck's drum and mix for 8 min. at highest speed before pumping.
 - b. Add VELOSIT CA 112/113 powder Into the drum when the truck arrives at the job site. Mix for 8 min. at highest speed before pumping. Trial mixes with the concrete mix design are strongly recommended for this application.
3. Site mixes: Concrete mixed in small tumbler mixers can also be improved with VELOSIT CA 112/113. As the mixing intensity is low, we recommended producing a slurry of VELOSIT CA 112/113 with 100% to 200% water ensure proper mixing results.



Estimated Dosage Rated

Water / Cement Ratio	0.4		0.45		0.5		0.55	
	CA 112	CA 113	CA 112	CA 113	CA 112	CA 113	CA 112	CA 113
280 Kg/m3	2.02 Kg	2.80 Kg	2.27 Kg	3.15 Kg	2.52 Kg	3.50 Kg	2,77 Kg	3.85 Kg
310 Kg/m3	2.24 Kg	3.10 Kg	2.51 Kg	3.49 Kg	2.79 Kg	3.88 Kg	3.07 Kg	4.26 Kg
340 Kg/m3	2.45 Kg	3.40 Kg	2.76 Kg	3.83 Kg	3.06 Kg	4.25 Kg	3.36 Kg	4.68 Kg
370 Kg/m3	2.66 Kg	3.70 Kg	3.00 Kg	4.16 Kg	3.33 Kg	4.63 Kg	3.66 Kg	5.09 Kg

VELOSIT WS 801

Besides the concrete itself, most structures have vulnerabilities that need special attention to achieve a complete waterproofing system. Joints, pipe penetrations and other protrusions can be tightly waterproofed using our swellable water stop VELOSIT WS 801.



Easy to mix and economical



Resists 50 m water pressure



Self-retarded swelling



Dimensionally stable



Fully reversible for unlimited cycles

Main Properties

Property	Unit	Value	Standard
Color	-	Blue	-
Dimensions	mm	5 x 20	-
Weight	Kg/m	0.12	-
Water impermeability	bar	5	EN 12390-8
Water Absorption	Kg/m	1.2	-

Swelling Capacity



Up to 1060%
Swelling capacity
in potable water



Up to 750%
swelling capacity
in sea water



Up to 580%
swelling capacity
in saline water

Packaging

VELOSIT WS 801 is supplied in 50 m rolls.
5 rolls are packaged in a box (approx. 27 Kg per box).



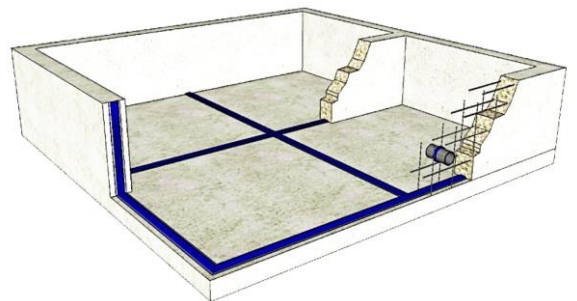
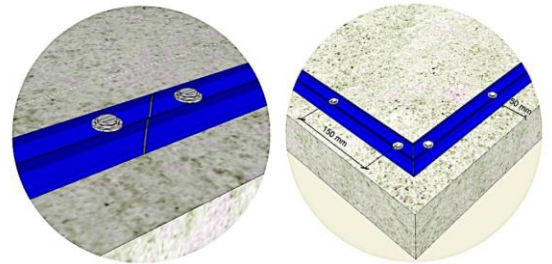
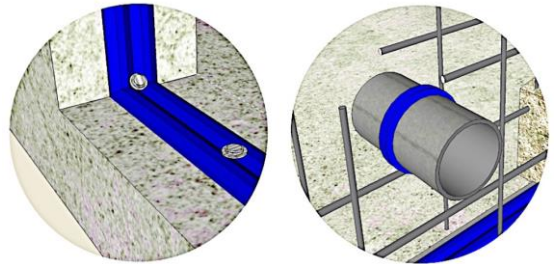
APPLICATION PROCEDURE

Substrate Preparation

Remove separating and bond breaking substances from first concrete section (for example foundation and slab). Surface should be open porous and load bearing. Patch larger surface defects with VELOSIT RM 202.

Processing

- Due to its enormous swelling pressure VELOSIT WS 801 must be installed min. 50 mm from each edge. Do not use VELOSIT WS 801 on concrete walls of less than 120 mm cross-section.
- Fixing with nails: VELOSIT WS 801 can be nailed to the first concrete section. Shoot nails each 15 cm with a nail gun (for example Hilti DX 76) through VELOSIT WS 801 into the concrete.
- Cut overlaps, crossings or terminations of the waterstop in a 45° angle and connect without a gap. Hollow areas of more than 4 mm may reduce watertightness significantly.
- Plastic pipes can only be treated with VELOSIT WS 801 up to DN 50 with cold water and up to DN 25 for more than 30°C water temperature. Due to the high swelling pressure plastic pipes may collapse under load. Larger diameters are only permitted with metal pipes.



Curing

VELOSIT WS 801 does not require curing. Avoid standing water on the waterstop as this may result in a premature swelling of the material. Because of the retarded swelling a short-term contact with rain water is not a problem.

WHY US?



Manufacturer

VELOSIT GmbH & Co. Kg

VELOSIT is based on decades of experience in R & D, production and consulting for high performance construction materials which are fully conversant with modern construction techniques, all conducted in harmonious team working. Our global team combines the latest construction methods with novel proven chemistries.

Abu Dhabi Distributor Skilled Construction Chemicals

Trusting us, experts in the waterproofing fields, you can get high quality construction materials which are fully conversant with modern construction techniques. Our services are tailored to prioritize clients needs assuring client's satisfaction and after service care



Dubai and Northern UAE Distributor Shams Al Bawadi Insulation Systems

Established since 2004 in Ras Al Khaimah, UAE, as a specialist company in waterproofing systems. Lead by passion and ambitious during the past years and now one of the top experts in waterproofing field.



CONTACT US

**Manufacturer
In Germany**

**UAE
Distributor**

**UAE Approved
Applicator**

The logo for Velosit, featuring a stylized blue 'V' symbol followed by the word 'velosit' in a bold, blue, sans-serif font.The logo for Velosit Falcon, featuring a stylized blue 'V' symbol followed by the word 'velosit' in a bold, blue, sans-serif font, with the word 'falcon' in a smaller font below it.The logo for Sealed Insulating Materials, featuring a stylized blue 'S' symbol with orange arrows pointing in opposite directions, followed by the word 'Sealed' in a bold, blue, sans-serif font, and 'Insulating Materials' in a smaller, orange, sans-serif font below it.

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PRODUCT CATALOGUE MAINTENANCE



CRYSTALLINE WATERPROOFING SYSTEM

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TOP PROJECTS

Hidroeléctrica RENACE, San Pedro Carcha, Guatemala



The Central Hidroeléctrica Renace is a hydroelectric complex located in San Pedro Carchá. It is the largest hydroelectric project in Guatemala and is managed by the Energy Division of a Multi-Investment Corporation.

About 100 Kg of VELOSIT PC 221, 55 m² of VELOSIT WP 101 and 42 m of VELOSIT WS 801 were used to treat leakage and waterproof surfaces.

Ismailia Tunnels under Suez Canal, Al Ismailiyah, Egypt

Taking part in improving Sinai in Egypt, Two tunnels in Ismailia were inaugurated in May 2019 to connect eastern Ismailia with western.

12,150 lin.m of VELOSIT WS 801 used to waterproof construction joints. The tunnel was waterproofed with the crystalline technology using 1,240 Kg of VELOSIT CA 112/113.



APPLICATIONS

BASEMENTS



PARKING STRUCTURES



SLAB



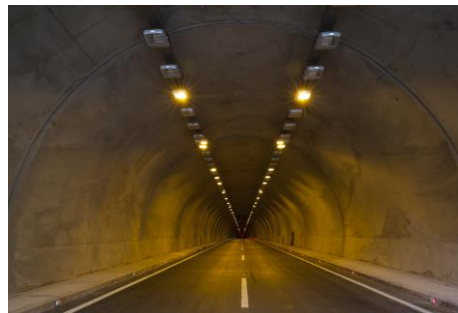
POTABLE WATER STRUCTURES



SHOTCRETE



TUNNELS AND PIPELINES



ELEVATOR PITS



SEWAGE STRUCTURES



VELOSIT CW 111

VELOSIT CW 111 is a crystalline waterproofing slurry for concrete substrates. It is very economic and easy to apply. VELOSIT CW 111 becomes part of the concrete and creates a waterproof layer inside the concrete itself.



Easy to mix and economical



Extreme adhesive strength



Potable water approved



Self healing up to 0.4 mm of static cracks



Unsurpassed strength increase exceeding 50 MPa



Good weathering resistance



Open to foot traffic after 4 hours



Shrinkage compensated



Increased resistance against aggressive pH media and sulfate

Main Properties

Property	Unit	Value	Standard
Color	-	Gray	-
Density	Kg/L	1.2	-
Water impermeability	bar	12 (positive and negative sides)	EN 12390-8
Compressice strength +24 hrs	MPa	21	EN 12390-8
Compressice strength +28 days	MPa	51	EN 12390-8
Carbonation resistance	-	Passed	-
Capillary water absorption	Kg/m ² xh ^{0.5}	0.4	-
Restrained shrinkage	MPa	2.8	-
Fire rating	-	Class A1	EN 13501-1

Packaging

VELOSIT CW 111 is available in 25 kg (55 lb.) watertight plastic bags.



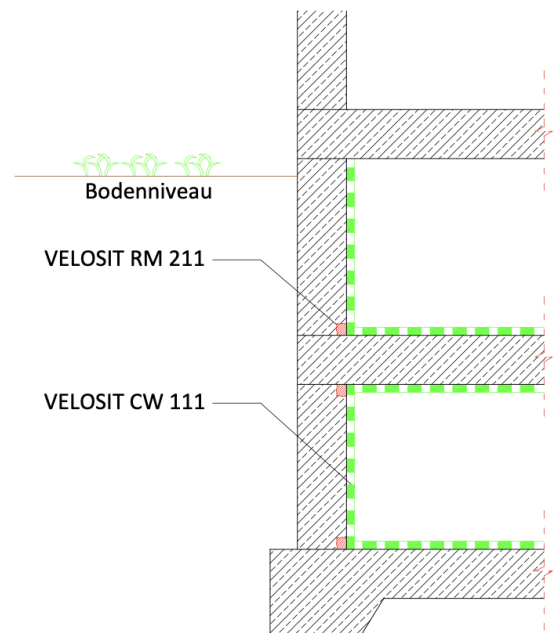
APPLICATION PROCEDURE

Substrate Preparation

- a.) Hardened concrete must be prepared with sand blasting, shot blasting or ideally high-pressure water blasting to remove all bond breaking substances.
- b.) Cold joints can be treated by chiseling out concrete in a U shape around the joint. Fill the opening with VELOSIT RM 211 and finish with VELOSIT CW 111.
- c.) Fresh concrete can be treated with VELOSIT CW 111 in a dry-shake application. The concrete must have sufficiently stiffened that a helicopter trowel can work on it.

Processing

- a.) Brush application: Mix VELOSIT CW 111 with 22– 23 % potable water with a slow speed drill until a lump-free mix with a consistency of an oil paint is achieved. The product is workable for 30 – 45 min. at 23 °C. Apply the first coat with a masons brush in crossing applications to the pre-dampened substrate at the specified rate. The second coat must be applied within the recoat time, which is 60 – 90 min. at 23 °C.
- b.) Spray application: Use suitable spray machines. Prepare the product as described for the brush application. If less water is used the whole specified amount of VELOSIT CW 111 may be applied in one lift. Otherwise spray in two layers with a wait time of approx. 30 min. between coats.
- c.) Dry-shake application: VELOSIT CW 111 can be applied in powder form onto fresh concrete before finishing the surface. The product is applied uniformly onto the concrete and then finished with a helicopter trowel.



Curing

VELOSIT CW 111 does not require long term curing as it reacts relatively fast with water. Only under hot weather or very dry conditions water curing for 3 – 4 hours is required.

VELOSIT RM 211

VELOSIT RM 211 is a crystalline cementitious repair mortar for concrete restoration. It creates a smooth surface for crystalline waterproof coatings.



Easy to mix and economical



Extreme adhesive strength



Excellent workability



Good resistance against CO₂



Unsurpassed strength increase exceeding 40 MPa



Good weathering resistance



Open to foot traffic after 4 hours



Shrinkage compensated



Increased resistance against aggressive pH media and sulfate

Main Properties

Property	Unit	Value	Standard
Color	-	Gray	-
Density	Kg/L	1.6	-
Initial Set	min	75	-
Final Set	min	120	-
Compressice strength +24 hours	MPa	22	EN 12390-8
Compressice strength +28 days	MPa	40	EN 12390-8
Capillary water absorption	Kg/m ² xh ^{0.5}	0.1	-
Adhessive strength	MPa	2	-
Restrained shrinkage	MPa	2	-
Fire rating	-	Class A1	EN 13501-1

Packaging

VELOSIT RM 211 is available in 25 kg (55 lb.) watertight plastic bags.



APPLICATION PROCEDURE

Substrate Preparation

a.) Steel: Apply a corrosion protection coat on rebar with VELOSIT CP 201. Other steel areas can be primed with VELOSIT PR 303 with a full broadcast. Steel may expand and contract differently under temperature changes than a cementitious mortar.

b.) Concrete substrates: Must be prepared with sand blasting, shot blasting or ideally high pressure water blasting to remove all bond breaking substances. Remove all carbonated concrete. Active water leaks must be treated and fully stopped with VELOSIT PC 221. Before the application of VELOSIT RM 211, dampen the substrate with clean water to a saturated surface dry (SSD) condition.

Processing

a.) Trowel application: Mix VELOSIT RM 211 with 17 – 20 % potable water. The product is workable for 45 min. at 23 °C. Apply a slurry coat of VELOSIT RM 211 by scrubbing material with a wet sponge into the concrete surface. Trowel VELOSIT RM 211 into the slurry coat.

b.) Spray application: Use suitable spray machines. In mixing pumps feed the powder into the product hopper and adjust the water to the desired consistency. With mortar pumps add the mixed product as described above into the feed hopper of the spray machine and spray continuously.



Curing

VELOSIT RM 211 does not require long term curing as it reacts relatively fast with water. Only under hot weather or very dry conditions water curing for 3 – 4 hours is required.

VELOSIT PC 221

VELOSIT PC 221 is a rapid setting cement for concrete and masonry. The product is used to waterproof water leakages, as an anchoring mortar and as an accelerator for other VELOSIT mortars. It is especially strong against negative side water pressure.



Easy to mix and economical



Very good adhesion to concrete and masonry



Potable water approved



Immediately waterproof and resists 130 m water pressure



Unsurpassed strength increase exceeding 50 MPa



Good weathering resistance



1 minute working time



Shrinkage compensated



Increased resistance against aggressive pH media and sulfate

Main Properties

Property	Unit	Value	Standard
Color	-	Gray	-
Density	Kg/L	1.3	-
Water impermeability	bar	5 (positive and negative sides)	EN 12390-8
Compressive strength +24 hrs	MPa	30	EN 12390-8
Compressive strength +7 days	MPa	40	EN 12390-8
Carbonation resistance	-	Passed	-
Capillary water absorption	Kg/m ² xh ^{0.5}	0.4	-
Adhesive strength	MPa	1.2	
Restrained shrinkage	MPa	1.2	-

Packaging

VELOSIT PC 221 is available in 12 kg (26 lb.) plastic pails.



APPLICATION PROCEDURE

Substrate Preparation

Chisel defective area or water leakage open achieving a U-shaped profile. Drill holes for starter bars and radiator mountings. Remove all dust and debris from areas to be treated. Dampen the surface with water to a saturated surface dry (SSD) condition before application.

Processing

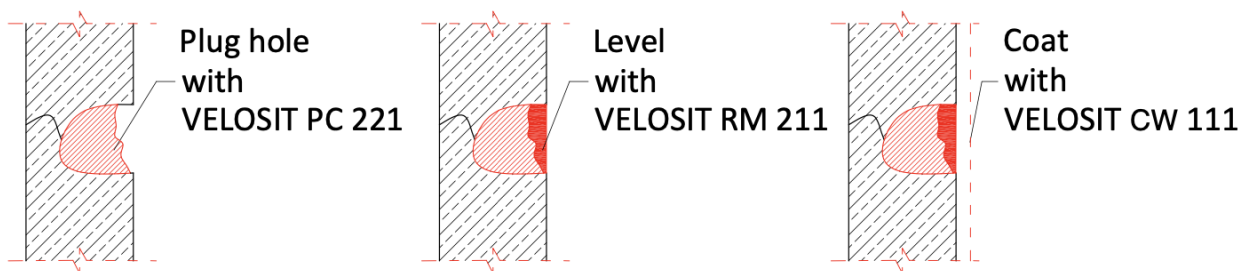
Mix 3 volume parts VELOSIT PC 221 with 1 part potable water in a small mixing vessel by hand. Make sure that a lump-free mix with the desired consistency is achieved. The product is workable for 1 min at 23°C. Only mix as much material as can be applied immediately!

a.) Plugging of water leakages: Form mixed material by hand (wear protective gloves!) to a ball shape and push immediately into the prepared leakage. Hold for 1 to 2 minutes until the product has sufficiently hardened. Immediately shave the surface flush with the substrate. After a short waiting time the area waterproofing with VELOSIT WP 101 or CW 111 can be applied.

b.) Application as repair mortar: Mix VELOSIT PC 221 to the required consistency and fill immediately into the prepared defective area and smoothen with a trowel. Excessive material can be shaved off after 3 – 5 min.

c.) Use as anchoring mortar: Mix VELOSIT PC 221 to a slightly thinner consistency and immediately fill into the prepared anchor holes. Push starter bars immediately into the holes and adjust direction. Remove excess material as soon as possible.

d.) Use as accelerator: VELOSIT PC 221 acts as an accelerator for many cementitious mortars. Required amount must be determined in trial mixes.



Curing

VELOSIT RC 221 does not require curing.

WHY US?



Manufacturer

VELOSIT GmbH & Co. Kg

VELOSIT is based on decades of experience in R & D, production and consulting for high performance construction materials which are fully conversant with modern construction techniques, all conducted in harmonious team working. Our global team combines the latest construction methods with novel proven chemistries.

Abu Dhabi Distributor Skilled Construction Chemicals

Trusting us, experts in the waterproofing fields, you can get high quality construction materials which are fully conversant with modern construction techniques. Our services are tailored to prioritize clients needs assuring client's satisfaction and after service care



Dubai and Northern UAE Distributor Shams Al Bawadi Insulation Systems

Established since 2004 in Ras Al Khaimah, UAE, as a specialist company in waterproofing systems. Lead by passion and ambitious during the past years and now one of the top experts in waterproofing field.



CONTACT US

**Manufacturer
In Germany**

**UAE
Distributor**

**Approved
UAE Applicator**

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