



Dear partners,

Our strategy of working with Partners is aimed at creating unique engineering and technical solutions for the manufacture, repair and protection of concrete (stone, brick, etc.), in the construction industry, at different stages: design, construction, operation and maintenance.

An individual approach to the selection and creation of a constructive solution gives the Customer an opportunity to save money, both on materials and on the cost of work.

Modern laboratory, qualified personnel who conducts continuous work with customers, creating, improving and optimizing materials individually for each object.

Unique complex additives to concrete, waterproofing materials, allowing to work indoors (if it is a basement) or outside (if it is a container with water), high-strength repair compounds, special concrete compositions for use in low temperatures (up to -25 ° C) , with a set of high strength (up to 30 MPa) for 6 hours already.

All this was developed for specific tasks, the climatic and technical conditions, the actual customers (PIK Group Moscow-Russia, ArtBeton Contracting & Tr. L.L.C Doha - Qatar, MELASCO & SARL Annaba-Algeria, etc.).

We also offer to our Partners a wide range of products for general construction works (toppings, masonry and plaster mixes, reinforced adhesives, etc.), and, to reduce the cost of these materials, it is possible to manufacture them directly at the facility, by the contractor's forces (due to the use of the latest concentrates (premix) of building mixtures of the ARENA FORCE brand).

The development and testing of materials is carried out jointly by Russian and Israeli experts.

With more detailed information we offer you to get acquainted with the thematic appendixes to this letter:

Appendix 1: The use of waterproofing, repair and special materials of the ARENA FORCE trademark.

Appendix 2: Competitive advantages of the ARENA FORCE trademark in comparison with other manufacturers.

Appendix 3: The use of the ARENA FORCES trademark materials in road construction and repair.

Appendix 4: The use of the ARENA FORCE trademark in the production of concrete products.



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LLC "ARENA Waterproofing Manufacturing Plant"

MANUFACTURER OF WATERPROOFING MIXTURES ARENA FORCE®

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Appendix 5: Application of the latest building mixtures concentrates of the ARENA FORCE trademark on construction sites and in the production of dry building mixes.

Appendix 6: Design capacity of the plant.

Appendix 1

To the Information Letter

The use of waterproofing, repair and special materials produced by the "ARENA" Hydro Isolation Plant

Waterproofing additives in concrete:

I. ARENA BiMix NS / PC universal complex additive in concrete

Application examples:

1. Production of monolithic concrete structures (foundations, walls, floors, columns, structures of complex shapes, as well as variations of architectural objects) and reinforced concrete products;
2. Production of structures from hydraulic concrete with water resistance not less than W10 (bridges, their supports and girders, arrangement of embankments and walls that strengthen the coast, pools, their bowls and surrounding areas, walls of sewage wells and mines, subway tunnels, dams, hydroelectric stations, breakwaters, thermal chambers and heating mains).

Application:

1. Increasing the strength of concrete by 30-40%
2. Getting brand strength of concrete on the 7th day (reducing the time of care for concrete in a hot climate)
3. Increasing the mobility of concrete (significantly reduces the risk of the formation of non-concrete blocks and cavities)
4. Obtaining 70% of the grade strength for the 3-rd day (acceleration of the product commissioning)
5. Increase in frost resistance and air resistance by 3-5 times (increase in the number of cycles of alternate wetting and drying, which the finished product can withstand)
6. The increase in water resistance of not less than 5 steps (production of hydraulic concrete)
7. Acceleration of strength in the manufacture of concrete products using curing (steam treatment)

II. ARENA EcoMix waterproofing additive in concrete

Application examples:

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1. Production of structures from hydraulic concrete with a waterproof value of at least W10 (bridges, their supports and girders, arrangement of embankments and walls that strengthen the shore, pools, their bowls and surrounding areas, walls of sewage wells and mines, subway tunnels, dams, hydroelectric power stations, breakwaters, thermal chambers and heating mains)

Application:

1. An increase in frost resistance and air resistance by 3-5 times (an increase in the number of cycles of alternate moistening and drying that the finished product can withstand)

2. The increase in water resistance of not less than 3 steps (obtaining hydraulic concrete).

Waterproofing Compositions for Concrete Waterproofing

III. ARENA InMix PN – Penetrating Waterproofing

Application examples:

1. Waterproofing the foundation of foundation blocks or monolithic concrete

2. Waterproofing of concrete and reinforced concrete structures, regardless of the direction of water pressure

3. Waterproofing of the concrete roof from the inside in case there is no access from the outside.

4. Overlapping of cracks and capillaries of concrete and reinforced concrete products with a opening of not more than 0.4 mm

Application:

1. Waterproofing of concrete structures and concrete products, the operation of which requires the elimination of the capillary leakage of moisture through the porous structure of concrete

2. It works in the body of concrete, leaving the surface in its original state, while the direction of water pressure does not matter

3. Waterproofing of underground and underwater structures from the inside, where there is no access to the surface from the water pressure side

4. Waterproofing of floors and monolithic roof structures.

Waterproofing Compounds to Protect the Surface

1. ARENA PolyElast PE - flexible coating concrete membrane

Examples of Using:

1. Replacement of bitumen insulation when processing concrete monolithic foundations, foundations from FBS, structures made of concrete rings and other products of concrete products.

2. Waterproofing the interior of the pool bowl, followed by decorative trim

3. Waterproofing the walls of plasterboard toilets, floor screeds, as a result is a waterproof elastic concrete membrane, ready for further decoration.

Application:

1. Waterproofing of building structures from concrete, brick, stone, drywall, etc.



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2. Waterproofing of the pools
 3. Waterproofing of the foundation

 4. Waterproofing of reinforced concrete products
 5. Waterproofing of the operated roof, including the application over the damaged
 6. Protection and waterproofing of the blind area, including asphalt coatings
 7. Protection and waterproofing of decorative stone elements
 8. Protection and waterproofing of paving slabs
 9. Protection and waterproofing of stone buildings
 10. Waterproofing and protection of the operated roof

It has a high parameter of water resistance, durability and adhesion, is elastic, not subject to cracking, on a cement base, further decorative finishing is possible after application.

The Waterproofing Compounds of Designative Use:

1. ARENA SeamMaster PT - suture waterproofing

Examples of using:

1. Waterproofing of joints and abutments of monolithic concrete structures after preliminary treatment with penetrating waterproofing by the ARENA InMix PN
2. Waterproofing of the seams and joints of fundamental blocks and floor slabs
3. Waterproofing of working seams of concreting
4. Waterproofing of technological holes after timbering
5. Waterproofing of inputs of communications

Application:

1. Filling the seams, joints and abutments of concrete structures and concrete products
2. Filling of the cracks in concrete structures, including that one from the inside. The direction of the water pressure does not matter
3. Filling of cracks with a disclosure of more than 0.4 mm, the use of jointly penetrating waterproofing ARENA InMix PN is recommended.

2. ARENA PlugMix PW to eliminate active leaks, "hydrostopper"

Application:

1. Liquidation of active leaks through cavities and cracks in concrete, stone and brick structures, including work under water.
2. Quick installation of anchors

3. ARENA DryDeform self-expanding waterproofing cord

Application:

1. Waterproofing of inputs of communications
2. Waterproofing of expansion seams



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3. Waterproofing of concrete joints and joints of reinforced concrete structures
4. Waterproofing of seams of the floor joints and coating slabs
5. Waterproofing of technological seams when pouring concrete

4. ARENA ProtectWall CM elastic tinted concrete mastic (does not require subsequent decorative processing)

Application:

1. Restoration and protection of brickwork and facades
2. Waterproofing and protection of building structures made of concrete, brick, stone, drywall, etc.
3. Waterproofing and protection of the foundation
4. Waterproofing and protection of reinforced concrete products
5. Waterproofing and protection of the operated roof
6. Protection and waterproofing of the blind area, including asphalt

It has a high parameter of water resistance, durability and adhesion, is elastic, cement-based, and the coating is finishing and does not require subsequent staining.

Special Purpose Formulations

1. ARENA FastMix Hot30 / EasyHot8 self-heating quick-hardening repair compound

Application features:

1. Work at ambient temperatures up to -25 ° C (ARENA FastMix Hot30)
2. Gaining of 70% grade strength after 6-8 hours

Application:

1. Repair of airfield pavements and roads in the shortest possible time and the possibility of quick commissioning;
2. Quick installation of anchor elements
3. The butt joint grouting of reinforced concrete structures and floor slabs and coatings
4. Grouting of wall panel structures
5. Filling of cavities, voids, non-concrete monolithic frame structures and foundations at negative temperatures
6. Thickening of structural elements
7. Repair of underground structures, where high resistance to sulfate and moisture is required

2. ARENA RepairMaster R300 / R500 thixotropic waterproof repair compound

Application:

1. Repair of defects in concrete and reinforced concrete structures
2. Restoration of the geometry of concrete, stone and brick structures
3. Waterproofing of concrete, stone and brick surfaces
4. Filling of cavities, voids of monolithic frame structures and foundations



Appendix 2

To the Information letter

Competitive advantages of the ARENA FORCE trademark materials in comparison with other manufacturers

Products of the ARENA FORCE trademark, by the ARENA Waterproofing Plant are relatively young in the construction market, but have already gained confidence from the consumer due to a number of competitive advantages, both technical and industrial.

We use high quality raw materials, inert and binding materials. We have quality control for each batch of produce.

The ARENA Waterproofing Plant - is the Russian manufacturer, which allows us to keep the price level of products at an acceptable level, while offering high quality products for the construction market.

We have our own high-tech developments, which allow us to make a serious competition to such giants as Basf and Penetron, in terms of physical and technical characteristics. The product line of the ARENA FORCE trademark contains materials that have no analogues.

The main characteristics are reflected in the comparative tables:

Complex Additives in Concrete:

Specifications	ARENA BiMix PC/NS	BASF Rheobuild	Penetron AdMix
Price for 1 kg.	70 rubles	105 rubles	300 rubles
Watertightness	Not less than W10	Not regulated	Not less than W10
Workability / mobility	P4-P5	P4-P5	Not regulated
Frost resistance	at least 300 cycles	Not regulated	Not regulated
Ultimate concrete strength	130%-150%	Not regulated	Not regulated
Acceleration of gaining the strength	Not less than 4 times	Not regulated	Not regulated
Disclosing of isolated cracks	Not less than 0.4 mm	Not regulated	Not regulated

Hydrotechnical Additives in Concrete:

Specifications	ARENA EcoMix	BASF – no analog	Penetron AdMix
Price for 1 kg.	250 rubles	-	300 rubles
Watertightness	Not less than W10	-	Not less than W10
Disclosing of isolated cracks	Not less than 0.4 mm	-	Not less than 0.3 mm

Hydraulic Stopper:

Specifications	ARENA PlugMix PW	BASF MasterSeal 590	Penetron Penepug
Price for 1 kg.	150 rubles	182 rubles	315 rubles
Setting time, min:			
Not earlier, min	0,3	1	1
Not later than, min	1,0	2	4
Watertightness. Not less than	W14	Not regulated	W16
Brand on frost resistance, not less	F300	Not regulated	F400
Compressive strength for 28 days, not less	17 MPa	52 MPa	Not regulated
Compressive strength after 5-10 minutes, not less	7 MPa	Not regulated	Not regulated

Penetrating Waterproofing:

Specifications	ARENA InMix PN	BASF MasterSeal 501	Penetron
Price for 1 kg.	230 rubles	110 rubles	300 rubles
Watertightness	Not less than W10	Not less than W10	Not less than W10
Depth of penetration, not less than mm	100-500	Not regulated	500
Opening of cracks on an insulated surface, up to mm	0,4	Not regulated	0,4

Membrane elastic waterproofing:

Specifications	ARENA PolyElast PE	BASF MasterSeal 550	Penetron – no analog
Price for 1 kg.	90 rubles	190 rubles	-
Watertightness	Not less than W18	Not less than W14	-
Setting time, min:			
Not earlier, min	60		
Not later than, min	210	60	
Brand on frost resistance, not less	F 400	Not regulated	-
Compressive strength at 1/28 days, not less	15/45 MPa	Not regulated	-
Adhesion 1/28 day	1/2,5 MPa	/1-1,2 MPa	-



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Repair composition:

Specifications	ARENA RepairMaster R300	BASF MasterEmaco 90	Penetron Cкpena M500
Price for 1 kg.	20 pyб.	79 pyб.	46 pyб.
Watertightness	Not less than W12	Not less than W12	Not less than W14
Shrinkage, not more than%	0,01	0,05	Not regulated
Compressive strength at 1/28 days, not less	20/50	10/40	20/50
Brand on frost resistance, not less	F300	F300	Not regulated
Adhesion on the 28th day, not less	1,5 MPa	1,5 MPa	1,3 MPa

Quick hardening repair compound:

Specifications	ARENA FastMix Hot30	BASF MasterEmaco S66	Penetron – no analog
Watertightness	Not less than W10	Not less than W16	-
Size of Filling Material	0,315 mm	10 mm	-
Viability, not less	45 min	30 min	-
Compressive strength 2h / 28 days	20/41 MPa	-/60 MPa	-
Adhesion on the 28th day, not less	2,5 MPa	2,5 MPa	-
Mobility	Pк4	Pк5	-

Appendix 3

To the information letter

The use of the ARENA FORCE materials in road construction and repair

Products of the ARENA FORCE trademark, produced by the ARENA Waterproofing Plant is recommended for use in the construction of bridges and overpasses, construction and arrangement of roads and surrounding areas, road network elements, tunnels, transitions, as well as in the production of current repair.

Installation of road network elements

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In the course of work on the installation of road signs and reflective elements, fixation of the element or bar to the weighting agent is required. The quick-hardening repair structures of ARENA FastMix Hot30 are used in production of such works.

When installed on an element of the road network of chippers, it is necessary to apply protective coatings to the concrete enclosing structure for the purposes of protection against exposure to aggressive environments. In the production of such works, the ARENA Waterproofing Plant proposes the use of high-tech coating elastic waterproofing ARENA PolyElast PE. The application of the material is made with a finishing brush; it does not require the presence of both special equipment and specialization of the worker. As a result of applying a layer of 2 mm, an elastic, crack-resistant, high-quality concrete membrane is formed on the surface. This coating has high adhesion to the surface (at least 2 MPa) and has the highest water resistance parameter (at least W16).

Works on the current structural repair of concrete structures of the road network, concrete elements of supports and bridges

For the purpose of structural repair of concrete elements and further protection of the entire structure, a complex of materials of the ARENA FORCE trademark is used:

- **ARENA RepairMaster R300 / R500** for high-quality structural repair of concrete surfaces
- **ARENA FastMix Hot30** for quick bonding of concrete surfaces, structural repairs, installation of elements
- **ARENA PolyElast PE** to protect the surface from exposure of water and aggressive environments
- **ARENA InMix PN** for applying on a concrete surface on either side of the water pressure and further protecting it against aggressive environments.

Production of road network elements

In the production of building envelopes, the ARENA Waterproofing Plant proposes the use of the **ARENA BiMix NS / PC complex additive**. The additive is introduced into the concrete mix from which the product is made. When using the complex additive, the time taken to set the handling strength of products, including the process of heat-humidity treatment, is reduced by at least 3 times. The final strength of the product is getting higher not less than 30%. The product acquires water resistance properties (not less than W12) and increasing frost resistance (not less than 300 cycles). Also, the concrete mix acquires improved workability and self-tightening properties, which, when molding the product, allows to exclude internal and external cavities and possible chips in the process of demolding.

If it is necessary to produce structural repairs of concrete products for road elements that have been out of production and have structural defects, repair compositions for concrete ARENA RepairMaster R300 / R500 and self-heating special concrete composition ARENA FastMix Hot30 are used.



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Appendix 4

To the Information letter

Repair of concrete products and structures using ARENA RepairMaster R300 / R500 and ARENA FastMix Hot30

In the production of reinforced concrete and concrete products, it is often necessary to repair (restore) the geometric and operational characteristics of the product. The ARENA Waterproofing Plant recommends solving this problem with the help of ARENA RepairMaster R300 / R500 repair compound and a self-heating, special ARENA FastMix Hot30 repair compound.

Our recommendations and materials will allow you to significantly reduce the cost of repairing the product and completely get rid of the defect in production.

Application of repair compositions ARENA RepairMaster R300 / R500, is made on a cleaned, dedusted, and pre-moistened surface using spatulas, if the total thickness of the applied layer exceeds 40 mm, it is necessary to apply the composition in several layers with a thickness of 10 mm with a pause of 30-40 minutes. If necessary, the aesthetic alignment of the restored surface allows smoothing with a spatula moistened with water. After the start of the setting of the ARENA RepairMaster R300 / R500, in order to accelerate to obtain the necessary color shade of the repaired product, it is recommended to grind the area with a small amount of the dry mixture ARENA RepairMaster R300 / R500.

The broken off parts of the concrete structure can be glued together with the help of a special concrete composition ARENA FastMix Hot30. The material is applied with a brush on both glued, pre-moistened surfaces. The material has an accelerated setting time and high early strength, which allows you to quickly repair and continue further work. The adhesion of the glued surfaces is achieved due to the high adhesion of the material to the base (not less than 2.8 MPa), which corresponds to the index of axial tension of the concrete class B45.



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Appendix 5

To the Information Letter

The use of the latest building mixes concentrates of the ARENA FORCE trademark at construction sites and in the production of dry building mixes.

It is no secret that the prime cost of virtually any construction mixes comprises significant costs for the preparation of inert components (drying, fractionation, extraction and transportation to the place of enrichment, preparation for production, electricity, heat, workers' wages, packaging, fuel and lubricants) can be up to 80% of the cost.

Finished products also need to be delivered to the construction site and, if this distance exceeds 100-200 km, the price of the material increases significantly. The reverse process occurs (unpacking, mixing with water) at the site of the construction site.

As a rule, there are sources of inert components of mixes (sand, screenings, rubble, water) in the immediate vicinity of construction sites, the cost of which, taking into account the delivery to the object, is very low. It remains only to add special modifying polymer additives and cement in the required dosage.

The company "ARENA" Waterproofing Plant offers you to significantly reduce the cost of construction through the use of the latest building mixes concentrates of the ARENA FORCE trademark.



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Appendix 6

To the Information letter

Available and Design Capacity of the Plant

The products are packaged in a metal or paper container weighing 25 kg, or, as agreed with the Customer, in a BigBag (FIBS) weighing 1 ton (500kg).

Plant Available Capacity:

Period	25 kg bag	BigBag (FIBS) 1 ton
Day	45 tons	90 tons
Month	1125 tons	2250 tons
Year	13,500 tons	27,000 tons