ENJAZ STARS AND QINGDAO HIGHONOUR

Cooperation Product Catalogue

ART POSSIBILITY

SS1

POLYMERS IN SOIL STABILIZATION & DUST CONTROL

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WWW.FUTURE-SOIL.COM

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Who We Are ?

HARD Rock.

Was established in January 2015, its head office is located in Doha, Qatar. The Company introduces Practical, Economical & Environmentally safe solutions to Construction and Infrastructure Industry whose success depends on preventing or overcoming dust, friction, or unstable soil. The fields of works comprise road stabilization, dust control, pond liners, public roads infrastructures, as well as preventive and decorative Plaster and Flooring.

In Near Future we will have our own Production facility here in Doha

Who We Are ?

- We are working in the field of supply and apply the unique Soil Stabilizer Polymers(SS1)

- The SS1 Soil Stabilizers have a wide Range of Applications.

- The Main Fields of Application are, Soil Stabilization , Cities Beautification (Hardscape), Dust Control in construction sites, Plaster works using Polymeric materials.

- The SS1 Soil Stabilizers are aqueous dispersion based on a copolymer of vinyl asatate and vinyl acetate. The product contains no substances classified as hazardous to health in concentrations which should be taken into account according to EC directive.

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Applicability

SS1 Soil Stabilizers can be used safely, effectively & economically in wide range of applications as:

- Dust Control
- Soil Stabilization
- Private Streets
- Storage Yards and Areas
- Walkways and Foot Paths
- Staging or Lay-Down Areas
- Patios and Picnic Areas
- Windblown Dust Prevention
- Trap and Bunker Lining
- Erosion Prevention
- Temporary Roads
- Plastering
- Parking Lots
- Golf Cart Paths
- Bicycle Tracks
- Helipads and Landing Strips
- Service Roads and Driveways
- Access and Haul Roads
- Wheelchair Access Ways
- Sand Contamination Prevention
- Mud Prevention
- Vegetation Prevention
- City Beautification
- Flooring

Key Benefits of SS1 Soil Stabilization :

- Increases load bearing capacity
- Increases Water Impermeability
- Reducing the Plasticity Index (PI)
- Reduces Soil Shrinkage
- Increases Strength (both compressive and tensile)
- Eco Friendly, since it requires significantly less transports when compared to soil exchange, while saving precious

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What and Why SS1 Soil Stabilization?

SS1 Soil stabilization is a group of earthwork technologies to improve soil characteristics during the construction process and to improve mechanical and load bearing properties. The two main technological methods are soil improvement and soil consolidation.

SS1 Soil stabilization methods are used in heavily soaked soils, which as a result, cannot be sufficiently compacted or are not suitable for construction traffic. By mixing in binding agents (lime, cement, Polymers etc.) water content is reduced, and material’s plasticity, compactability and load bearing capacity is immediately improved.

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What are the Methods of SS1 Soil Stabilization ?

Here are four of the most commonly employed methods of SS1 soil stabilization in use throughout the globe:

Cement Stabilization – This is one of the more common methods of soil stabilization due to the relatively low cost and wide availability of cement. Soil is basically combined and mixed with cement to add strength and durability. The end result is fairly durable and resistant to weather, making it a great choice for sandy soil environments. However, the process is relatively labor intensive, and not healthy for the environment. Additionally, while the resulting soil-cement admixture has high durability, it is still susceptible to cracking.

Lime Stabilization – Lime stabilization is another of the popular methods of soil stabilization. This procedure is not nearly as cost-effective as cement, and it can be more expensive due to the cost of the burnt limestone required for the process. It is also bad for the environment; burning lime in kilns generates toxic runoff that can damage groundwater supply. However, it does increase the strength and stability of soil, particularly in dry (but not sandy) environments where the material can be compacted – the total compressive strength can be increased by up to 60x in some situations.

Chemical Stabilization – Chemical methods of soil stabilization are a wider group, as there are many different applications. The major advantage of this approach is that there is likely a chemical soil stabilization solution designed for any specific environment you may require, so performance is likely to be high. Most of the chemicals used in these processes are dangerous for the environment though, and they can be quite expensive as well.

Polymer Stabilization – Polymer based methods of soil stabilization are the most modern, and offer a number of advantages over more traditional procedures. They involve combining the soil with non-reactive, environmentally neutral polymer based filler material. One of the biggest advantages of polymer based methods of soil stabilization is that they do not negatively impact the environment whilst creating a waterproof, semi flexible pavement. They also offer advantages in terms of strength, and are typically one of the more affordable options as well.

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What is SS1 Soil Stabilizer Polymer?

It is a milky white water based aqueous dispersion
based on a copolymer of vinyl versatate and vinyl acetate
The product contains no substances classified as hazardous to health
in concentration which should be taken into account according to
EC directive

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How to Apply SS1 ?

3 Methods are available according to the required field

treated soil.

Application Method 1.

To Address Permanent Heavy Weight Traffic Area Requirements :

- Private Streets
- Parking Lots
- Golf Cart Paths
- BMX/Bicycle Tracks
- Storage Yards and Areas
- Walkways and Foot Paths
- Helipads and Landing Strips
- Service Roads and Driveways
- Access and Haul Roads
- Staging or Lay-Down Areas
- Wheelchair Access Ways
- Patios and Picnic Areas

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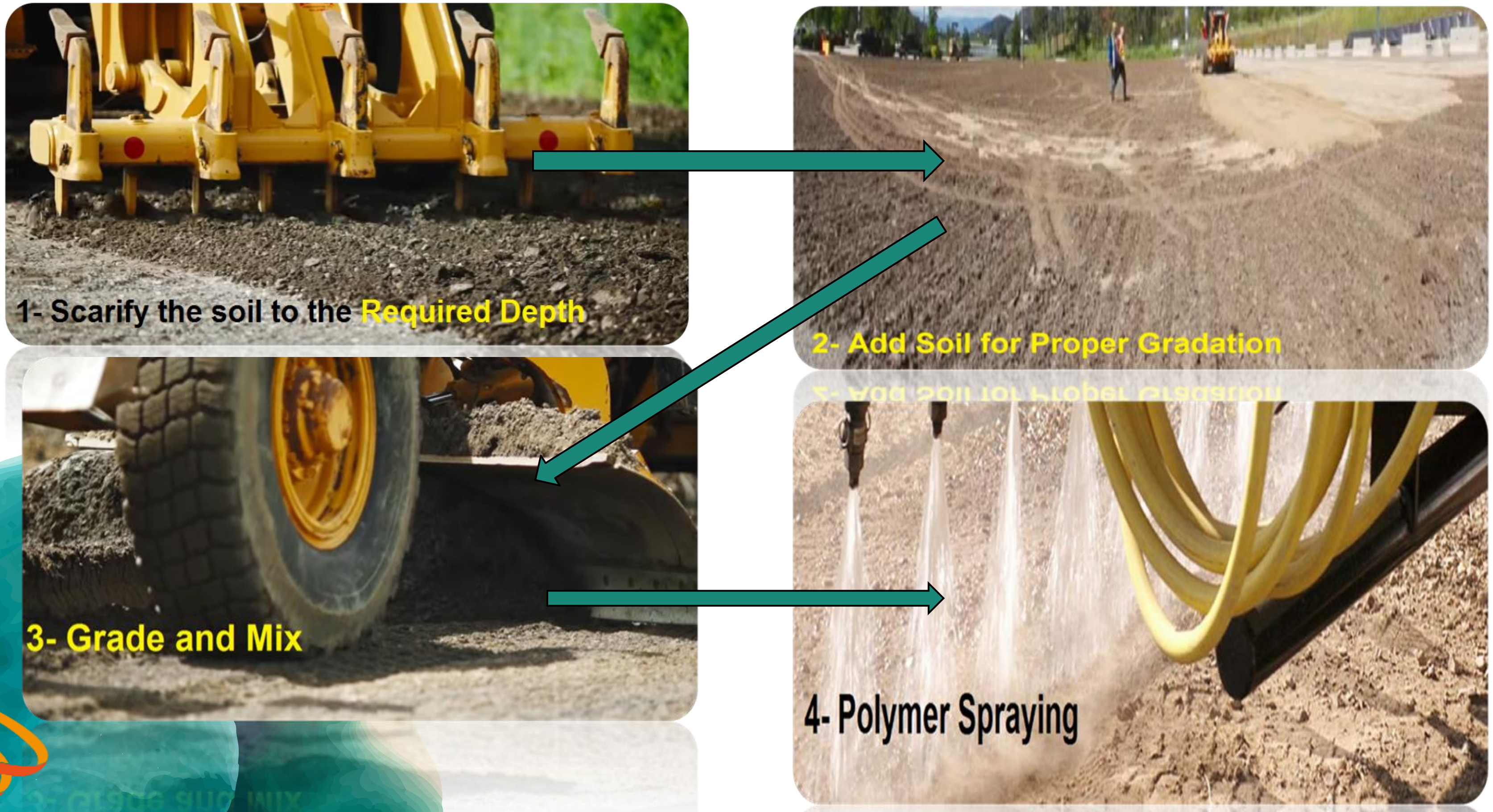
Application Method 1.

To Address Permanent Heavy Weight Traffic Area Requirements :


1- Scarify the soil to the Required Depth

2- Add Soil for Proper Gradation

3- Grade and Mix

4- Polymer Spraying

-Cont. Application Method 1.

5- Blend the soil with the Polymer

Spray a Second Polymer Layer

7- Final Grading

and Compacting (95%)

8- Apply a Seal Coat

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-Cont. Application Method 1.

A simple testing method for the treated soil after being Cured , an Emergency stop for a Vehicle with a speed 40 Km/h. the Tires have marked the stabilized soil

Application Method 2.

To Address Temporary Light Weight Traffic Area Requirements for the Following:

- *Parking Lots*
- *Golf Cart Paths*
- *BMX/Bicycle Tracks*
- *Staging or Lay-Down Areas*
- *Patios and Picnic Areas*
- *Service Roads and Driveways*
- *Storage Yards and Areas*
- *Walkways and Foot Paths*
- *Wheelchair Access Ways*

1. Grade, contour and compact the soil to final elevations.
2. Till soil to the specified depth of treatment with a roto-tiller (i.e. 2 inches)
3. Spray-apply the calculated amount of Future Soil Stabilizer Polymer Onto the loose soil.
4. Till the soil again to thoroughly mix soil and Future Soil Stabilizer Polymer
5. Re-compact the soil with a steel drum roller.
6. Spray-apply the required amount of Future Soil Stabilizer Polymer onto The compact soil surface.
7. Allow the soil to dry.

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Samples for Application 2

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Application Method 3.

To Address Short-Term to Long-Term Non-Traffic Area Requirements for the Following:

- *Erosion Prevention*
- *Mud Prevention*
- *Vegetation Prevention*
- *Windblown Dust Prevention*
- *Trap and Bunker Lining*
- *Sand Contamination Prevention*

1. Spray-apply the required amount of Future Soil Stabilizer Polymer onto the existing soil.
2. Do not allow the soil to dry.
3. Again Spray-apply the required amount of Future Soil Stabilizer Polymer onto the existing soil.
4. Allow the soil to dry.

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Samples for Application 3

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SS1 Soil Stabilizer Polymer Wear Surface and Surface Life Wear Surface

SS1 ***POLYMER*** is a liquid soil solidifier. It converts ordinary dirt into a rock-solid wear surface that rivals asphalt and concrete. Though a *SS1* ***POLYMER*** wear surface is not as strong as Asphalt, it is several times stronger than asphalt. This capability puts *SS1*. ***POLYMER*** in a class of its own.

Surface Life: For the most part, it is impossible to predict how long a mix-in application of SS1 Polymer will last before maintenance is required. This is because the life of a SS1 Polymer surface depends on several factors other than time. The other factors are:

1. How the surface was treated with the Polymer in the initial application.
2. The actual wear (abrasive action) the surface is subjected to as it is used.
3. The friability (lack of hardness) of the particles of the soil that is used.
4. The actual weather conditions the surface is subjected to.

When we are asked “how long will the Polymer surface last” we say “from 5 to 7 years under normal wear conditions.” This is a good general estimate based on our experience and also other companies working in the same field.

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Strength of The Treated Soil

The strength of soils that have been treated with *Future Soil Stabilizer Polymer* depends on these factors:

1. The amount or degree of natural cohesiveness of the soil (soil suitability).
2. The amount or the percentage of *Polymer Soil Solidifier* that was added to the soil.
3. Whether or not the treated soil has fully dried and cured.
4. The actual hardness or strength of the soil particles themselves before treatment.

If the soil passes the soil suitability test and the concentration of Polymer is specified at 2% by volume of compact soil; then the unconfined ***compressive strength of the treated soil will be in the range of 800 to 2,200 pounds per square inch (psi).***

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UCS (Unconfined Compressive Strength) of Polymer Treated Soil Versus Asphalt

Sample Type	UCS (*psi*)
Asphalt Sample	250 *psi* to 300 *psi*
Future S. S. Polymer Treated Soil	800 to 2,200

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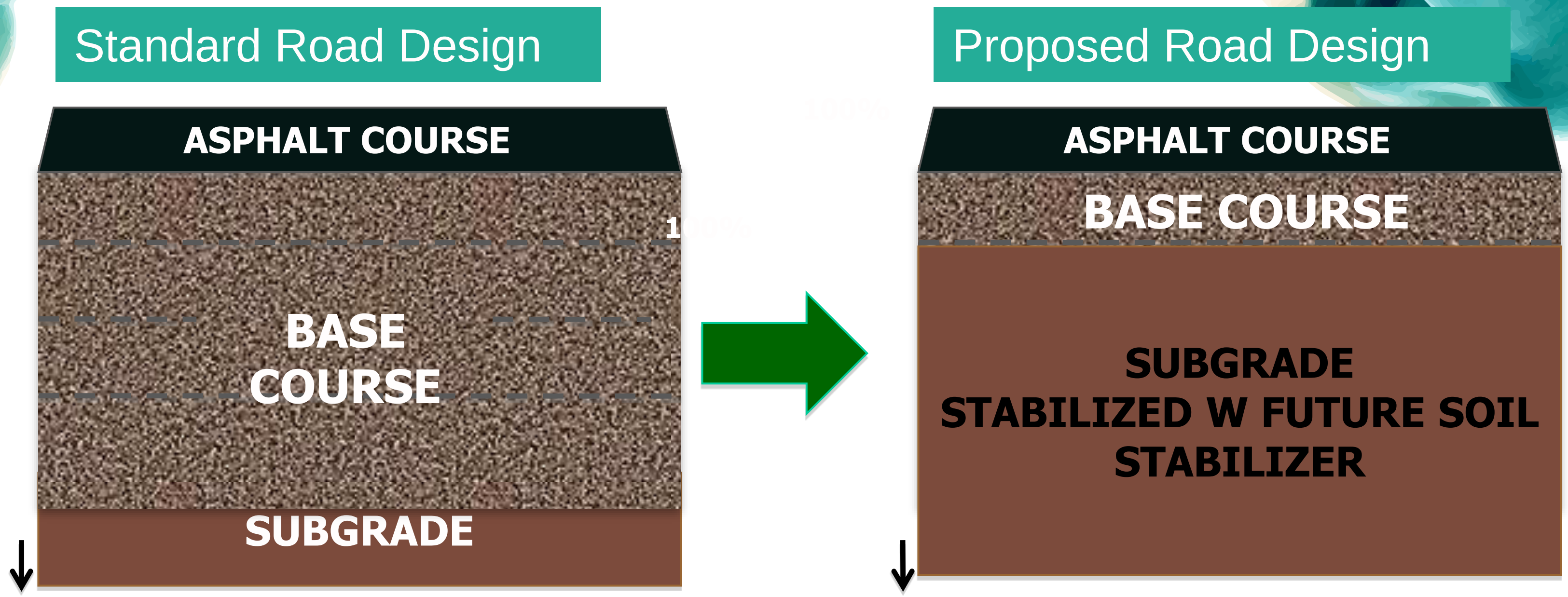

Standard Road Design

ASPHALT COURSE

BASE COURSE

SUBGRADE

Proposed Road Design

ASPHALT COURSE

BASE COURSE

SUBGRADE STABILIZED W FUTURE SOIL STABILIZER

- *SS1* Soil Stabilizer Strengthens subgrades by as much as 200%, allowing for a significant reduction in aggregate base rock – and associated costs – required to achieve strength targets
- It is applied directly to local subgrade soil using existing construction processes.

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Suggested treated depths according to the expected maximum load

- Subject to the initial report being satisfactory the following layer depths would be recommended for a Future S. S. Polymer stabilized road.
  150mm deep for loads up to 40 tones
  200mm deep for loads up to 80 tones
  250mm deep for loads up to 80 tones

- Equipment specification would include: Crusher/Ripper: Spray tanker: Grader: Smooth drum vibration compactor.
  The soil stabilized road surface can be sealed with Future S. S. Polymer or any other standard road surface can be installed.

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SECTION C.

FREQUENTLY ASKED QUESTIONS FAQ's

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What is The SS1 Soil Stabilizer Polymers?
The SS1 Soil Stabilizer Polymers is a water based cross linking polymer that increases the strength of a wide range of soils.

Why should I use SS1 Soil Stabilizer Polymers?
The SS1 Soil Stabilizer Polymers are environmentally safe and are manufactured with the Highest Quality ingredients. They have been proven effective in both the lab and the field. Their ease of use and wide range of applications make the SS1 Soil Stabilizer Polymers the choice of professionals worldwide.

Can SS1 Soil Stabilizer Polymers seal contaminated materials?
Yes. The SS1 Soil Stabilizer Polymers coats each contaminated particle with a flexible durable coating that prevents leaching and protects the environment.

Can standard road testing methods be used?
Yes. Standard cone penetrometer equipment can be used. Core sampling is not recommended as this can damage the long strings of cross-linking polymer.

Does SS1 Soil Stabilizer Polymers require specialized equipment?
No. All standard road construction equipment can be used with The SS1 Soil Stabilizer Polymers.

What types of standard road construction equipment are used for Polymer soil stabilizing?
You need something to rip the road and break up the surface like a Meri Crusher, a spray truck, road grader and smooth drum vibration compactor.

Will any wearing surface bond to The SS1 Soil Stabilizer Polymers?
Yes. The durability of an un-surfaced soil stabilized treated layer will depend on the stone content in the treated soil. A wearing surface is recommended for roads that are constantly used by 40+ tone vehicles. The wearing surface can be a top coat of The SS1 Soil Stabilizer Polymers.

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What is OMC?

OMC is Optimum Moisture Content and this represents the moisture level necessary to achieve maximum density after compaction for soil stabilization.

Is there a simple moisture level test?

Yes. After spraying the blend of soil to be stabilized with The SS1 Soil Stabilizer Polymers you squeeze the treated soil firmly in your hand. If it binds together, with no moisture leaching through your fingers, then the treated layer is ready for compaction.

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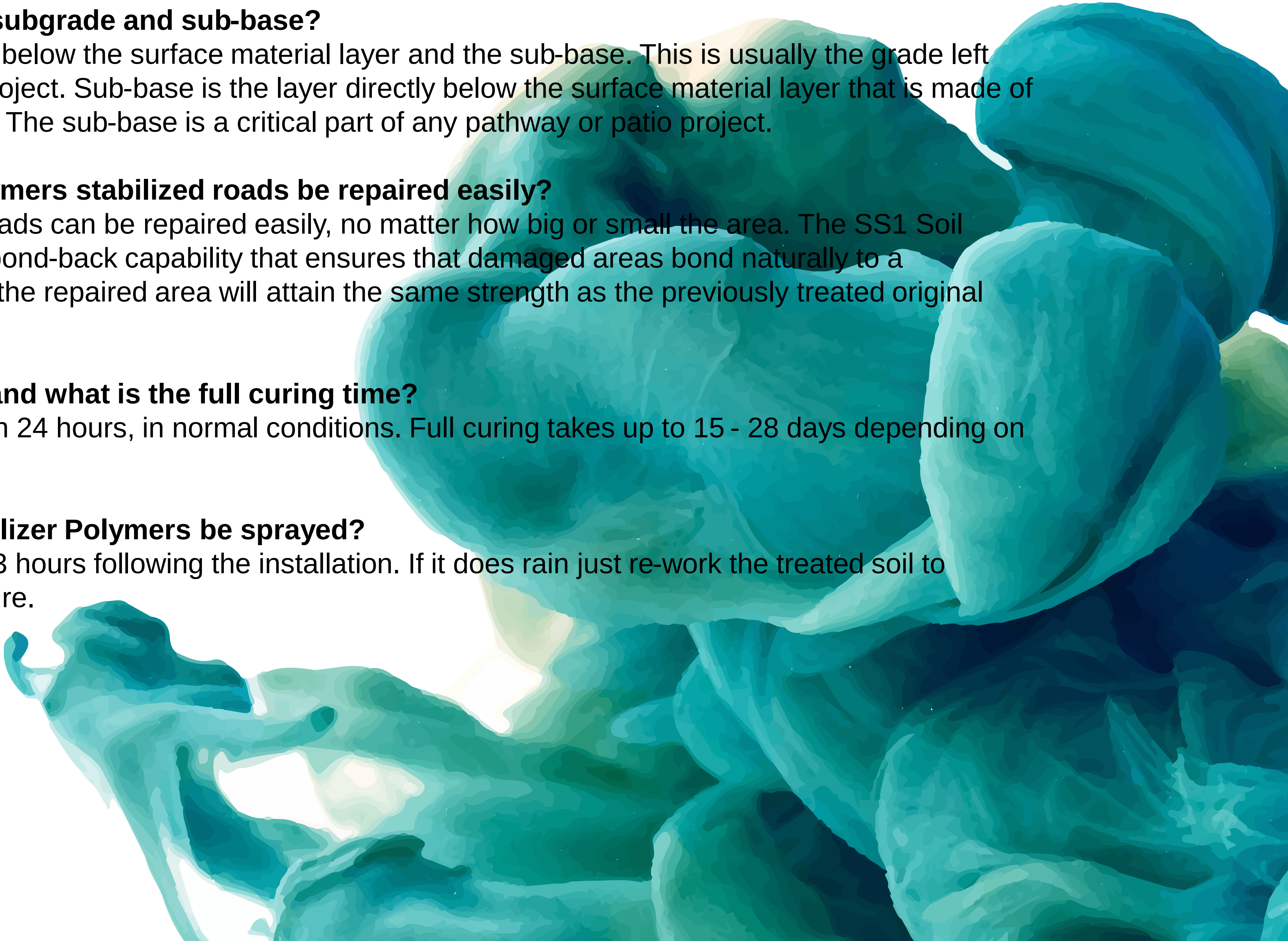
What is the difference between subgrade and sub-base?
Subgrade is the area of native soil below the surface material layer and the sub-base. This is usually the grade left after excavation when starting a project. Sub-base is the layer directly below the surface material layer that is made of up compacted, crushed base rock. The sub-base is a critical part of any pathway or patio project.

Can The SS1 Soil Stabilizer Polymers stabilized roads be repaired easily?
Yes, The Polymer soil stabilized roads can be repaired easily, no matter how big or small the area. The SS1 Soil Stabilizer Polymers has a unique bond-back capability that ensures that damaged areas bond naturally to a previously treated area. Moreover the repaired area will attain the same strength as the previously treated original areas.

How soon can we use the road and what is the full curing time?
Roads can be open for traffic within 24 hours, in normal conditions. Full curing takes up to 15 - 28 days depending on conditions and nature of soil.

When should The SS1 Soil Stabilizer Polymers be sprayed?
When there is no rain forecast for 3 hours following the installation. If it does rain just re-work the treated soil to release some of the excess moisture.



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Can The SS1 Soil Stabilizer Polymers soil stabilizer repair potholes?

The SS1 Soil Stabilizer Polymers soil stabilizer can be used to repair potholes, yes. But it is advisable to spray the exposed pothole first with The SS1 Soil Stabilizer Polymers, then fill the hole with The SS1 Soil Stabilizer Polymers treated soil, compact and over-spray the surface. With The Future Soil Stabilizer Polymers it is important to spray past the edges of the pothole repair as this prevents water ingress.

Is The Future Soil Stabilizer Polymers quicker and cheaper than conventional road construction?

Yes. Working with The SS1 Soil Stabilizer Polymers is 50% to 75% faster than conventional road construction and will reduce costs by 40-60%.

Is there a basic specification for materials?

A minimum of 35% fines passing through a 0.63 sieve and no stone larger than 20% of the layer depth being soil stabilized. The SS1 Soil Stabilizer Polymers is effective with cohesive and non-cohesive materials, even desert sand.

What are the primary uses for The SS1 Soil Stabilizer Polymers?

Roads, Plaster works, manufacture of bricks/blocks from a wide variety of locally available on-site materials and construction waste.

Can The SS1 Soil Stabilizer Polymers be damaged by Ultra Violet?

Surface deterioration could occur after 10 years on un-surfaced roads. Soil stabilized layers are projected to last over 20 years.

Is The SS1 Soil Stabilizer Polymers flexible or rigid when cured?

After optimum curing it produces a flexible layer.

Is The SS1 Soil Stabilizers environmentally friendly?

Yes. Treated soils have later been crushed and then used to grow grass and plants.

Will Soil Stabilizer get on or stick to vehicles?

When freshly applied, product could splash on vehicles driving over the surface or on nearby vehicles. Freshly splashed product can be flushed off with water. Dried product can be cleaned with hot water and detergent.

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Does The SS1 Soil Stabilizers enhance the weight?

Yes. The SS1 Soil Stabilizer can increase the weight bearing capacity by 4 to 6 times as measured by the CBR (California Bearing Ratio).

What is The SS1 Soil Stabilizers used for?

Unpaved roads and shoulders, helicopter landing zones, tank trails, any type of stockpile (soil, aggregate, etc.),parking lots and unpaved open areas (concert venues, construction sites, etc.).

What type of equipment is required to apply The SS1 Soil Stabilizers?

- Spray Guns
- Water Trucks
- Asphalt Spreaders.

All can be applied effectively depending upon the area & field of application

using The SS1 Soil Stabilizers?

It is not necessary to grade the road for basic topical applications for dust control. However, if the road is rough we do recommend grading it first.

Is potable water required for dilution of The SS1 Soil Stabilizers?

The water for dilution of Soil Stabilizer does not need to be potable. Most any fresh water source or sea water is compatible with Soil Stabilizer. A quick test can be performed in the field by mixing a small quantity of Soil Stabilizer with the water in a small container (jar or bottle). If after several minutes the mixture remains liquefied and smooth, the water is suitable for use.

What is the surface like once The SS1 Soil Stabilizers has been applied?

Soil Stabilizer will create a bonded surface stopping particles of dust such as Particulate Matters (PM10) and Particulate Matters (PM2.5) from entering the air. It is white in appearance when applied but dries clear keeping the natural aesthetics of the surface.

Will Soil Stabilizer get on or stick to vehicles?

When freshly applied, product could splash on vehicles driving over the surface or on nearby vehicles. Freshly splashed product can be flushed off with water. Dried product can be cleaned with hot water and detergent.

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QINGDAO HIGHONOUR CHEMICAL TECH CO.,LTD

WATER BASED ACRYLIC POLYMER

CATALOG

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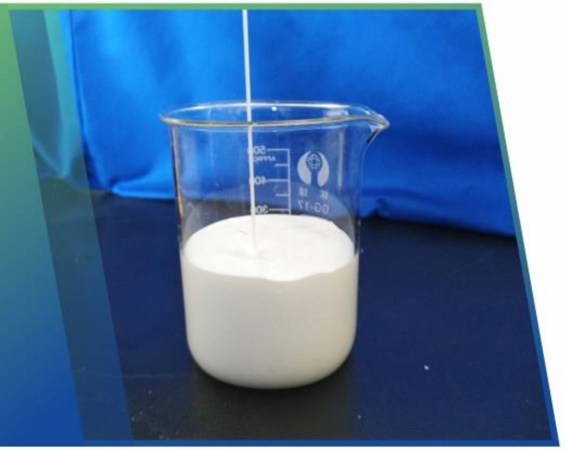
Qingdao Highonour Chemical Tech Co., Ltd. is a high-tech enterprise that develops, produces and markets water-based acrylic polymers, waterborne polyurethane polymers, and auxiliary additives. The products are widely used in architectural decoration, adhesives, building sealants, textiles, waterproof, anti-rust metal coating, water-based printing inks, water-based wood lacquer, soil and sand curing, and other fields. It has a throughput capacity of 60,000 tons of acrylic acid and its ester raw materials, as well as a production scale of 90,000 tons of water-based polymer and 30,000 tons of water-based paint.



TYPICAL PROPERTIES

Item	Type	Solids by weight, %	Viscosity cps	Particle Size (nm)	PH	MFFT (°C)	Applications
HN-102	Styrene acrylic emulsion	48±1	500-3000	100-180	7.0-8.0	21-23	Interior/exterior paints
HN-9301C	Acrylic emulsion	37±1	< 100	60-70	7.0-8.0	8	Sand paint
HN-5001	Styrene acrylic emulsion	47±2	1000-4000	90-150	7.0-8.0	22-24	Screen printing pigment paste for textile printing
HN-332T	Acrylic emulsion	56±1	1000-3000	200-300	7.0-8.0	0	Two-component cementitious waterproofing coating
HN-3198	Styrene acrylic emulsion	50±1	1000-3000	N/A	7.8-8.0	0	Acrylic elastic waterproofing coating & bitumen emulsion waterproofing coating
HN-154VE	Vinyl acetate-acrylate copolymer	53±1	100-500	250-450	3.5-4.5	0	Construction sealants ceramic tile adhesives
HN-152VA	Vinyl acetate-acrylate copolymer	50±1	< 500	N/A	2.0-5.0	0	Dust control
HN-541	Silicone modified styrene acrylic emulsion	50±1	1000-3000	N/A	6.0-7.0	25	Soil stabilizer for road construction

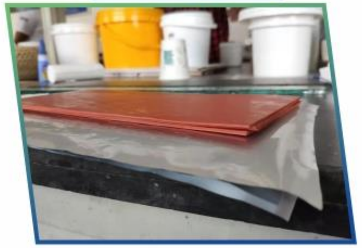
HN-102

HN-9301C

HN-5001

HN-332T

HN-3198



HN-3198

HN-154VE

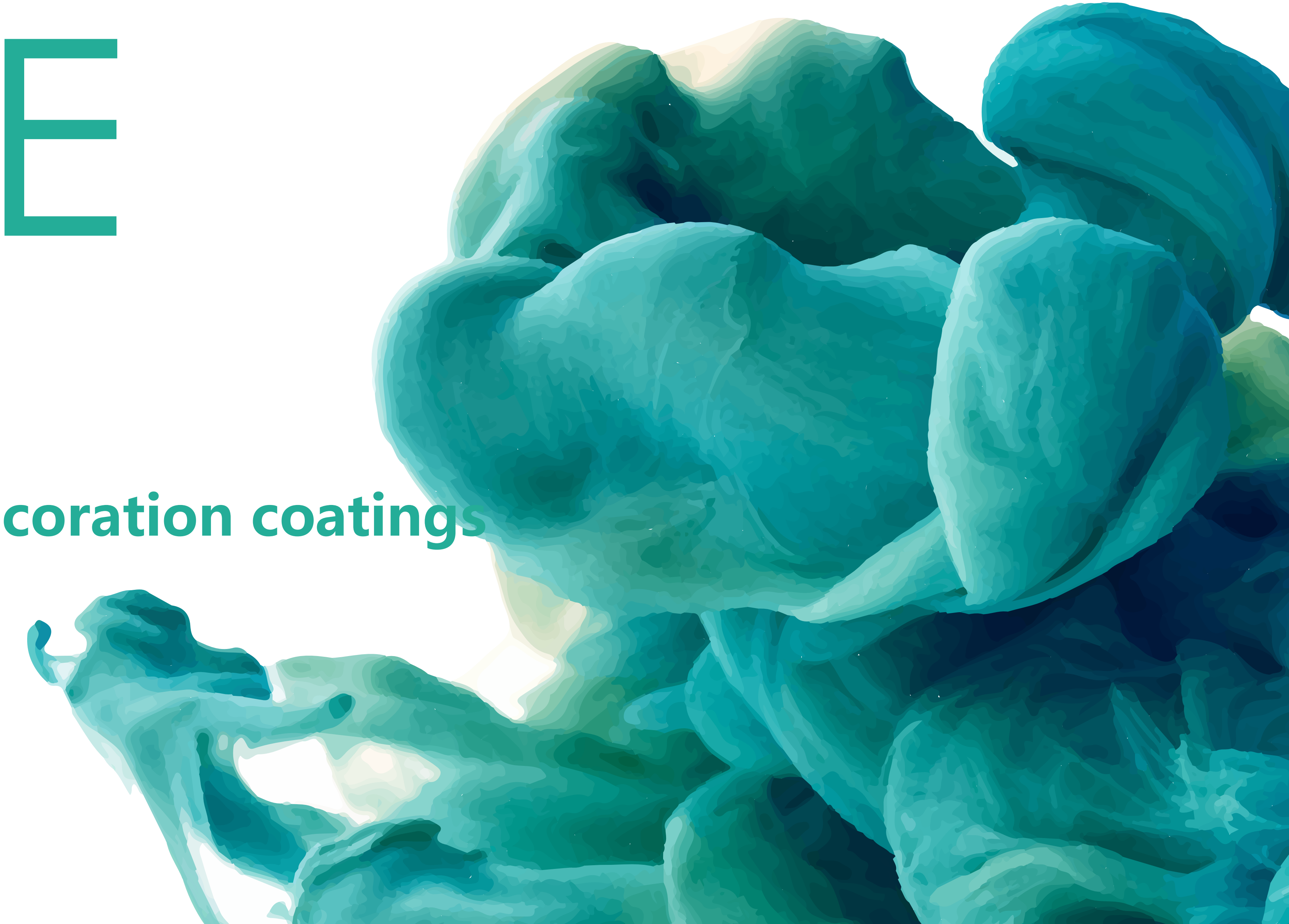
HN-152VA

HN-541

CONTENTS

ONE

For construction decoration coatings



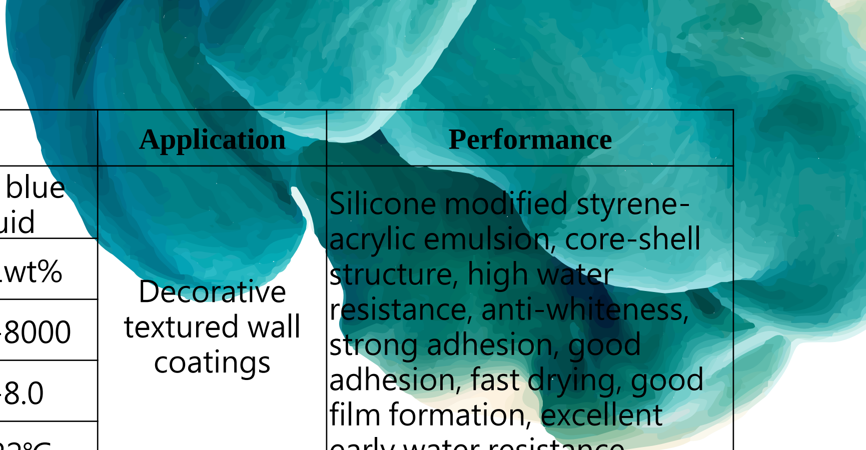
For latex paint, primer and putty

Product Name	**Typical Properties**		**Application**	**Performance**
HN-101	Appearance	light blue liquid	Interior wall paint, color tile paint & etc	Styrene-acrylic emulsion, has excellent scrubbing and water resistance.
	Solid content	47±2wt%		
	Viscosity.cps(25℃)	1000-4000cps		
	PH	7.0-8.0		
	Glass Transition Temperature (Tg)	26℃		
	Minimum Film Formation Temperature（MFT）	22-24℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		
HN-102	Appearance	light blue liquid	internal and external general paint	Styrene-acrylic emulsion, has excellent scrubbing resistance, water and alkali resistance, and good shear stability.
	Solid content	48±1wt%		
	Viscosity.cps(25℃)	500-3000		
	PH	7.0-8.0		
	Glass Transition Temperature (Tg)	24℃		
	Minimum Film Formation Temperature（MFT）	21-23℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		
HN-106	Appearance	light blue liquid	internal and external general paint	Styrene-acrylic emulsion, has excellent scrubbing resistance, water and alkali resistance, and good shear stability.
	Solid content	47±1wt%		
	Viscosity.cps(25℃)	1000-5000		
	PH	7.0-8.0		
	Glass Transition Temperature (Tg)	36℃		
	Minimum Film Formation Temperature（MFT）	38℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		

Product Name	**Typical Properties**		**Application**	**Performance**
HN-996	Appearance	light blue liquid	General internal and external paint	Styrene-acrylic emulsion, has excellent scrubbing resistance, water and alkali resistance, color spreading, good shear stability and high gloss.
	Solid content	49±1wt%		
	Viscosity.cps(25℃)	500-3000		
	PH	7.0-8.0		
	Glass Transition Temperature (Tg)	22℃		
	Minimum Film Formation Temperature（MFT）	18-20℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		
HN-01F	Appearance	light blue liquid	As a general purpose primer for the internal and external walls	The acrylate emulsion has excellent wet adhesion, permeability and alkali resistance.
	Solid content	29±1wt%		
	Viscosity.cps(25℃)	≤500cps		
	PH	7.5-8.5		
	Minimum Film Formation Temperature（MFT）	10℃		
HN-314T	Appearance	light blue liquid	Elastic putty, elastic paint, the external wall insulation system, etc	Elastic styrene-acrylic emulsion, prepared by functional crosslinking monomers, has excellent elongation, outstanding sexual resistant and adhesion.
	Solid content	48±1wt%		
	Viscosity.cps(25℃)	1000-3000		
	PH	7.0-8.0		
	Glass Transition Temperature (Tg)	-15℃		
	Minimum Film Formation Temperature（MFT）	0℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		

Product Name	**Typical Properties**		**Application**	**Performance**
HN-340T	Appearance	White	Putty, brushed paint	Self-crosslinking emulsion, excellent flexibility, high elasticity, good weather resistance, aging resistance, good adhesion
	Solid content	56±1wt%		
	Viscosity.cps(25℃)	1000-3000		
	PH	7.0-8.0		
	Glass Transition Temperature (Tg)	-15℃		
	Minimum Film Formation Temperature（MFT）	0℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		

For textured wall paints



Product Name	Typical Properties		Application	Performance
HN-9105A	Appearance	Light blue liquid	Decorative textured wall coatings	Silicone modified styrene-acrylic emulsion, core-shell structure, high water resistance, anti-whiteness, strong adhesion, good adhesion, fast drying, good film formation, excellent early water resistance.
	Solid content	44±1wt%		
	Viscosity.cps(25℃)	2000-8000		
	PH	7.0-8.0		
	Minimum Film Formation Temperature（MFT）	21-22℃		
HN-9106C	Appearance	Blue	Decorative textured wall coatings	Silicon modified pure propyl emulsion, excellent water bleaching resistance, water resistance, weather resistance, good color distribution, toughness, excellent yellowing resistance. It has strong alkaline resistance, calcium ion stability, dilution stability and freeze-thaw stability.
	Solid content	47±1wt%		
	Viscosity.cps(25℃)	3000-8000		
	PH	7.0-9.0		
	Minimum Film Formation Temperature（MFT）	20-21℃		

For multi-color paints

Product Name	Typical Properties		Application	Performance
HN-9301C	Appearance	light blue liquid	Continuous phase of multicolored paint	Good permeability, does not affect spray、dry color presentation
	Solid content	37±1wt%		
	Viscosity.cps(25℃)	< 100		
	Particle Size（nm）	60-70		
	PH	7.0-8.0		
	Minimum Film Formation Temperature（MFT）	8℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		
HN-9311S	Appearance	light blue liquid	Disperse phase of colorful coating	Package, impermeable color performance, water resistance, excellent adhesion.
	Solid content	47±1wt%		
	Viscosity.cps(25℃)	100-2000		
	Particle Size（nm）	90-120		
	PH	7.0-8.0		
	Minimum Film Formation Temperature（MFT）	29℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		

TWO

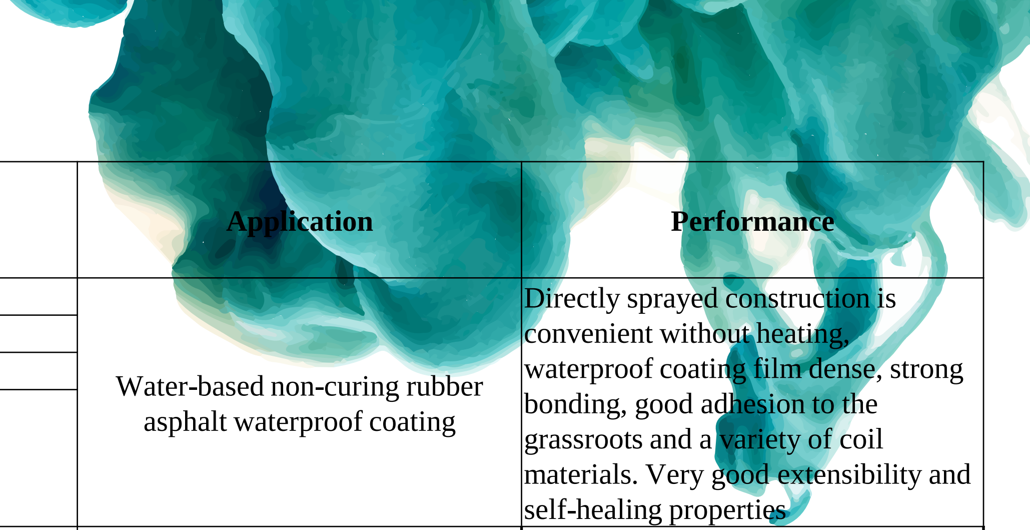
For waterproof coating and sealant

For waterproof coating

Product Name	Typical Properties		Application	Performance
HN-3050	Appearance	Light blue	Single component waterproof, putty, gigging paint.	Self-crosslinking emulsion, has excellent flexibility, high elasticity, good weather and aging resistance and good adhesion.
	Solid content	50±1wt%		
	Viscosity.cps(25℃)	2000-4000		
	PH	7.0-8.0		
HN-3527	Appearance	Milky white	Polymer cement waterproofing coatings and polymer cement waterproofing pastes	Excellent cement compatibility, excellent low temperature properties, elongation and tensile strength, excellent resistance to water, alkali and weathering
	Solid content	54±1wt%		
	Viscosity.cps(25℃)	100-1000		
	PH	7.5-9.0		
	Minimum Film Formation Temperature（MFT）	0℃		
HN-332T	Appearance	Milky white with a hint of green	Elastomeric waterproofing coating, JS waterproof coating, putty, etc	Excellent cement compatibility, excellent low temperature performance, extensibility and tensile strength, excellent water, alkali and weather resistance.
	Solid content	56±1wt%		
	Viscosity.cps(25℃)	1000-3000		
	PH	7.0-8.0		
	Minimum Film Formation Temperature（MFT）	0℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		

For waterproof coating

Product Name	Typical Properties			Application
HN-3198A	Appearance	Milky blue	Acrylic coloured elastic waterproof coating, polymer modified emulsified asphalt and emulsified asphalt waterproof coating for road and bridge	Excellent flexibility, no plasticisers, long lasting and effective elasticity and waterproofing, excellent filler wrap carrying capacity and excellent mechanical stability, easy to formulate, excellent durability and water resistance, extremely strong adhesion to substrates.
	Solid content	50±1wt%		
	Viscosity.cps(25℃)	1000-3000		
	PH	7.0-8.0		
	Glass Transition Temperature (Tg)	-11℃		
HN-3168	Appearance	Milky white with a hint of blue	Steel structure metal roofing waterproof coating and heat reflective coating	Good compatibility with cement, give the substrate excellent bonding strength, excellent impermeability.
	Solid content	54 ± 1%		
	Viscosity.cps(25℃)	500-2000		
	PH	8.5-9.5		
	Minimum Film Formation Temperature（MFT）（℃）	0℃		
HN-3090	Appearance	Light blue translucent	Transparent waterproof adhesive	Good transparency, good weather resistance, good adhesion to the substrate, excellent water resistance
	Solid content	39±1wt%		
	Viscosity.cps(25℃)	<500		
	PH	3.0-5.0		



For waterproof coating

Product Name	Typical Properties		Application	Performance
HN-5025	Appearance	Milky white	Water-based non-curing rubber asphalt waterproof coating	Directly sprayed construction is convenient without heating, waterproof coating film dense, strong bonding, good adhesion to the grassroots and a variety of coil materials. Very good extensibility and self-healing properties
	Solid content	50±1wt%		
	Viscosity.cps(25℃)	500-2000		
	PH	6.5-7.5		
HN-7038	Appearance	Milky white	Water-based non-curing rubber asphalt waterproof coating	Directly sprayed construction is convenient without heating, waterproof coating film dense, strong bonding, good adhesion to the grassroots and a variety of coil materials. Very good extensibility and self-healing properties
	Solid content	70±1wt%		
	Viscosity.cps(25℃)	3000-5000		
	PH	7.0-8.0		

For Sealant adhesive

Product Name	**Typical Properties**		**Application**	**Performance**
HN-154VE	Appearance	milk white liquid	Sealant adhesive for construction, ceramic tile adhesive, etc	Vinyl acetate-acrylate copolymer, has good stability and water resistance, has high bearing capacity to powder and good adhesion.
	Solid content	53±1wt%		
	Viscosity.cps(25℃)	100-500		
	PH	3.5-4.5		
	Glass Transition Temperature (Tg)	玻璃化温度		
	Minimum Film Formation Temperature（MFT）	0℃		
HN-1026	Appearance	Light blue	Water-proof sealant for construction	Styrene emulsion with fast curing, stability, good water resistance, high carrying capacity for powders and good adhesion.
	Solid content	47±1wt%		
	Viscosity.cps(25℃)	1000-5000		
	PH	7.0-8.0		
	Minimum Film Formation Temperature（MFT）	O℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	PASS		
HN-1795A	Appearance	Light blue	Water-proof sealant for construction	Styrene emulsion with good stability, water resistance, high carrying capacity for powders and good adhesion.
	Solid content	47±1wt%		
	Viscosity.cps(25℃)	1000-3000		
	PH	7.0-8.0		
	Minimum Film Formation Temperature（MFT）	**0℃**		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		

For Sealant adhesive

Product Name	Typical Properties		Application	Performance
HN-167T	Appearance	light blue	High elastic silicone sealant	Silicone modified acrylate emulsion, has good weather resistance quick curing, stability, water resistance, toughness, resilience and good adhesion.
	Solid content	50±1wt%		
	Viscosity.cps(25℃)	5000-8000		
	PH	6.0-7.0		
	Minimum Film Formation Temperature（MFT）	0℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	pass		
HN-169T	Appearance	Light blue	Water-based transparent sealant	Silicone-modified pure propylene emulsion with good transparency, high gloss, good weather resistance and yellowing resistance.
	Solid content	50±1wt%		
	Viscosity.cps(25℃)	500-1500		
	PH	2.0-5.0		
	Minimum Film Formation Temperature（MFT）	0℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		
HN-6028	Appearance	Milky white	Water-proof sealant for construction	Styrene emulsion with high solid content, fast curing, stability, good water resistance, high carrying capacity for powders, high brightness and good adhesion.
	Solid content	60±1wt%		
	Viscosity.cps(25℃)	100-500		
	PH	2.0-5.0		
	Minimum Film Formation Temperature（MFT）	0℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		

For Sealant adhesive

Product Name	Typical Properties		Application	Performance
HN-1761	Appearance	Milky white	Gloss black sealant, porcelain white sealant, etc.	Styrene emulsion with high solid content, fast curing, stability, good water resistance, high carrying capacity for powders, high brightness and good adhesion.
	Solid content	60±1wt%		
	Viscosity.cps(25℃)	100-1000		
	PH	7.0-8.0		
	Minimum Film Formation Temperature（MFT）	0℃		
	Ca2+ stability 5%CaCl2: emulsion =1:3, 48h, No Flocculation, No Stratification.	Pass		

THREE

For fabric adhesive and printing ink

Fabric adhesive

Product Name	**Typical Properties**		**Application**	**Performance**
HN-2018S	Appearance	Light blue liquid	Used with HN-3451HF for glass fiber mesh soft glue.	This product is a self-crosslinking emulsion with high cohesive strength, firm positioning, high elasticity and excellent alkali resistance.
	Solid content	34±1wt%		
	Viscosity.cps(25℃)	≤150		
	PH	6.0-7.0		
	Glass Transition Temperature (Tg)	-18℃		
HN-3451HF	Appearance	Light blue liquid	Used with HN-2018S for glass fiber mesh soft glue.	This product is a self-crosslinking emulsion with high adhesion to glass fiber, excellent alkali resistance, high gloss, and no moisture absorption and stickiness.
	Solid content	34±1wt%		
	Viscosity.cps(25℃)	≤150		
	PH	6.0-7.0		
	Glass Transition Temperature (Tg)	45℃		
HN-4000	Appearance	Light blue liquid	Used with HN-4020, HN-4040 for glass fiber mesh soft glue.	This product is a self-crosslinking emulsion with high adhesion to glass fiber, excellent alkali resistance, high gloss, and no moisture absorption and stickiness.
	Solid content	40±1wt%		
	Viscosity.cps(25℃)	800-1000		
	PH	6.0-7.0		
	Glass Transition Temperature (Tg)	0℃		
HN-4020	Appearance	Light blue liquid	Moderate hardness, can be used alone or used with HN-4000	This product is a self-crosslinking emulsion with high adhesion to glass fiber, excellent alkali resistance, high gloss, and no moisture absorption and stickiness.
	Solid content	40±1wt%		
	Viscosity.cps(25℃)	400-600		
	PH	6.0-7.0		
	Glass Transition Temperature (Tg)	20℃		

Fabric adhesive and printing paste

Product Name	**Typical Properties**		**Application**	**Performance**
HN-4040	Appearance	Light blue liquid	Used with HN-4020, HN-4040 for glass fiber mesh hard glue.	This product is a self-crosslinking emulsion with high adhesion to glass fiber, excellent alkali resistance, high gloss, and no moisture absorption and stickiness.
	Solid content	40±1wt%		
	Viscosity.cps(25℃)	200-400		
	PH	6.0-7.2		
	Glass Transition Temperature (Tg)	40℃		
HN-5008	Appearance	White and light yellow emulsion	Screen printing paste	Soft, low tack back, good fastness, good adhesion.
	Solid content	50±1wt%		
	Viscosity.cps(25℃)	100-1000		
	PH	7.0-8.0		
	Minimum Film Formation Temperature (MFT)	0℃		
	Calcium ion (Ca2+) stability	Pass		
HN-8321H	Appearance	Light blue liquid	Nylon, polyester cloth stereotypes	Strong penetration+B9:F39, good fiber positioning effect, high stiffness
	Solid content	40±1wt%		
	Viscosity.cps(25℃)	100-1000		
	Particle size (nm)	120-140		
	PH	2.0-5.0		

For curtain and sponge adhesive

Product Name	Typical Properties		Application	Performance
HN-SL530	Appearance	Light blue	Mainly used for wet curtain bonding in refrigeration systems and other industrial adhesives	Self-crosslinking styrene acrylic emulsion, strong adhesion, good water resistance, extra long service time, does not contain any heavy metals, meets export standards, stable mechanical and physical properties, not easy to deteriorate, easy to store.
	Solid content	34±1wt%		
	Viscosity.cps(25℃)	2500-4000		
	PH	4.0-6.0		
	Minimum Film Formation Temperature（MFT）	0℃		
HN-9827	Appearance	Light blue semi-translucent	Sponge adhesives	For a stiffening effect, the glue lengthens and sets the shape without springing back.
	Solid content	39±1wt%		
	Viscosity.cps(25℃)	3000-5000		
	Particle size（nm）	60-100		
	PH	6.0-8.0		
HN-PW01	Appearance	Milky blue	Cotton spray adhesive	Self-crosslinking vinyl acrylic adhesive with high mechanical and thermal stability, infinitely dilutable in soft water. Strong bonding and easy film formation. Can be bonded to various fibres, high bond strength, good heat and fire resistance can be tailored to customer requirements.
	Solid content	32±1wt%		
	Viscosity.cps(25℃)	< 10		
	PH	3-5		
	Glass Transition Temperature (Tg)	19℃		

For curtain and sponge adhesive

Product Name	Typical Properties		Application	Performance
HN-CA01	Appearance	Milky blue	Carpet backing adhesive	Medium stiffness, good thermoplastic stability, good binding of the pile head
	Solid content	32±1wt%		
	Viscosity.cps(25℃)	< 10		
	PH	3-5		
	Glass Transition Temperature (Tg)	19℃		
HN-816	Appearance	乳白	Water-based laminating adhesives	Low glue consumption and high adhesion when laminating.
	Solid content	54±1wt%		
	Viscosity.cps(25℃)	300-1000		
	PH	5.0-6.0		
	Minimum Film Formation Temperature（MFT）	0℃		

For water based printing ink

Product Name	Typical Properties		Application	Performance
HN-501NK	Appearance	slight blue	Water-based inks for flexographic printing on paper substrates	Good resolubility, high gloss, good film-forming performance, good compatibility with quick-drying agent, good substrate adhesion.
	Solid content	47±1wt%		
	Viscosity .cps (25℃)	100-500		
	Particle Size (nm)	80-100		
	pH	6.0-8.0		
	Glass transition temperature	10℃		
HN-9132	Appearance	cream	Non-woven fabric, cotton fabric, chemical fiber inkjet printing coating adhesive	Non-ionic emulsion, used for printing layers based on non-woven fabrics, cotton fabrics, and chemical fiber fabrics.
	Solid content	53±1wt%		
	Viscosity .cps (25℃)	500-2000		
	pH	3.0-4.0		
	Glass transition temperature	5℃		
	Minimum film forming temperature	0-5℃		
HN-YS861A	Appearance	slight blue	wallpaper printing ink	Pure acrylic self-crosslinking emulsion, high gloss, fast drying, good weather resistance, no yellowing, no back sticking, resistance to plasticizer precipitation, good color development to various organic and inorganic pigments, good adhesion to paper and board Strong focus, outstanding anti-adhesion.
	Solid content	42±1wt%		
	Viscosity .cps (25℃)	100-1000		
	Particle Size (nm)	100-130		
	pH	6.0-8.0		
	Glass transition temperature	60℃		

For water based printing ink

Product name	Performance indicators		applications	performance
HN-PC12	Appearance	slight blue	Eco-solvent ink printing coating	Anionic emulsion with high gloss and excellent ink absorption, used for printing layers based on non-woven fabrics, cotton fabrics, and chemical fiber fabrics.
	Solid content	37±1wt%		
	Viscosity .cps (25℃)	600-1500		
	pH	7.0-8.0		
	Glass transition temperature	12° C		
	Minimum film forming temperature	10-15° C		
HN-PC46	Appearance	Milky white blue	Eco-solvent ink printing coating	Anionic emulsion with high gloss and excellent ink absorption, used for printing layers based on non-woven fabrics, cotton fabrics, and chemical fiber fabrics (used in conjunction with GK-PC12).
	Solid content	37±1wt%		
	Viscosity .cps (25℃)	600-1500		
	pH	7.0-8.0		
	Glass transition temperature	46° C		
	Minimum film forming temperature	55° C		

FOUR

For antirust paint

For antirust paints

Product Name	Typical Properties		Application	Performance
HN-02BF	Appearance	Light Blue Liquid	For anti-corrosion of zinc coated steel	Good compatibility with hexavalent chromium, compact paint film, high water and weather resistance, high adhesion and high impact resistance.
	Solid content	37±1wt%		
	Viscosity.cps(25℃)	<500		
	PH	2.0-4.0		
	Calcium ion (Ca2+) stability	Pass		
HN-5197	Appearance	Light blue liquid	For anti-corrosion of zinc coated steel	Good compatibility with hexavalent chromium, compact paint film, high water and weather resistance, high adhesion and high impact resistance.
	Solid content	40±1wt%		
	Viscosity.cps(25℃)	<200		
	PH	2.0-4.0		
	Calcium ion (Ca2+) stability	Pass		
HN-1019A	Appearance	Light blue liquid	Basic protection of steel structure and casting paint (Primer and surface integrated)	Self-crosslinking styrene-acrylic emulsion, small particle size, good water resistance, high gloss, good compatibility with anti-rust agents and anti-rust pigments, excellent adhesion to metal substrates, and high cost performance.
	Solid content	46±2%		
	Viscosity.cps(25℃)	1000-3000		
	PH	7.0-8.0		
	Glass Transition Temperature (Tg)	28℃		
	Minimum Film Formation Temperature（ MFT ）	80℃		
HN-5119	Appearance	Light blue liquid	Color steel plate coating	Self-crosslinking styrene-acrylic emulsion, high hardness, good weather resistance, high resistance to chalking and discoloration, excellent adhesion, high water resistance, salt spray resistance and flash rust resistance. 。
	Solid content	48±1wt%		
	Viscosity.cps(25℃)	4000-6000		
	PH	7.0-8.0		
	Glass Transition Temperature (Tg)	25℃		
	Minimum Film Formation Temperature（ MFT ）	20-22℃		
HN-5203C	Appearance	Light blue liquid	Water based industrial coatings	Styrene-acrylic emulsion, high hardness, good weather resistance, excellent adhesion, water resistance, salt spray resistance and flash rust resistance, can be compatible with suitable water-based resins to make industrial coatings.
	Solid content	40±1wt%		
	Viscosity.cps(25℃)	<500		
	PH	7.0-8.0		
	Minimum Film Formation Temperature（ MFT ）	33℃		

Five

For dust control and soil stabilizer

For dust control and soil stabilizer

Product Name	Typical Properties		Application	Performance
HN-541	Appearance	milky blue	soil stablizer, road hardening	High strength, good water resistance, excellent adhesion to soil and sand.
	Solid content	50±1wt%		
	Viscosity .cps (25℃)	1000-3000		
	pH	6.0-7.0		
	Glass transition temperature	25℃		
HN-152VA	Appearance	cream	dust and sand suppression	It degrades quickly in the natural environment and is non-polluting, suitable for working environments with frequent spraying
	Solid content	50±1wt%		
	Viscosity .cps (25℃)	<500		
	pH	2.0-5.0		
	Minimum film forming temperature	0℃		
	Calcium ion stability	pass		
HN-158T	Appearance	slight blue	dust and sand suppression	Silicon-modified styrene-acrylic emulsion with high dilution ratio. The paint film has both strength and toughness, strong adhesion to sand and dust, self-forming film at room temperature, and excellent weather resistance of the paint film, which can ensure long-term effects.
	Solid content	50±1wt%		
	Viscosity .cps (25℃)	1500-3000		
	pH	6.0-7.0		
	Minimum film forming temperature	0° C		
	Calcium ion stability	pass		

SEVEN

Building paint additive

Thickener agent

Product Name	Typical Properties		Application	Performance
AT-01	Appearance	Milky white blue	water-based paint thickener	Improve paint flow, leveling, anti-sagging.
	Solid content	30±1wt%		
	Viscosity .cps (25℃)	⩽100		
	pH	2.0-4.0		
ATW-60	Appearance	Milky white blue		Good thickening effect and strong thixotropy.
	Solid content	30±1wt%		
	Viscosity .cps (25℃)	⩽100		
	pH	2.0-4.0		
ATW-2070	Appearance	Milky white blue		Good thickening effect, providing medium shear viscosity, improving system flow and leveling.
	Solid content	35±1wt%		
	Viscosity .cps (25℃)	⩽100		
	pH	2.0-4.0		
ATW-2080	Appearance	Milky white blue		High thickening effect, high thixotropy, providing medium and high shear viscosity.
	Solid content	28±1wt%		
	Viscosity .cps (25℃)	⩽30		
	pH	3.0-4.0		
ATW-2090	Appearance	Milky white blue		Alkali-swellable associative thickener, excellent thickening effect and leveling.
	Solid content	29±1wt%		
	Viscosity .cps (25℃)	⩽30		
	pH	3.0-4.0		

Dispersant agent

Product Name	Typical Properties		Application	Performance
WP-40	Appearance	pale yellow	Water-based paint dispersant	It has a good dispersion effect on inorganic pigments and fillers, and has good coating stability.
	Solid content	40±1wt%		
	Viscosity .cps (25℃)	≤ 500		
	pH	7.5-9.0		
WP-5040	Appearance	pale yellow		Significantly improve the leveling and anti-settling properties of the paint, and can be incorporated into coatings as part of film formers
	Solid content	40±1wt%		
	Viscosity .cps (25℃)	≤500		
	pH	7.5-9.0		

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