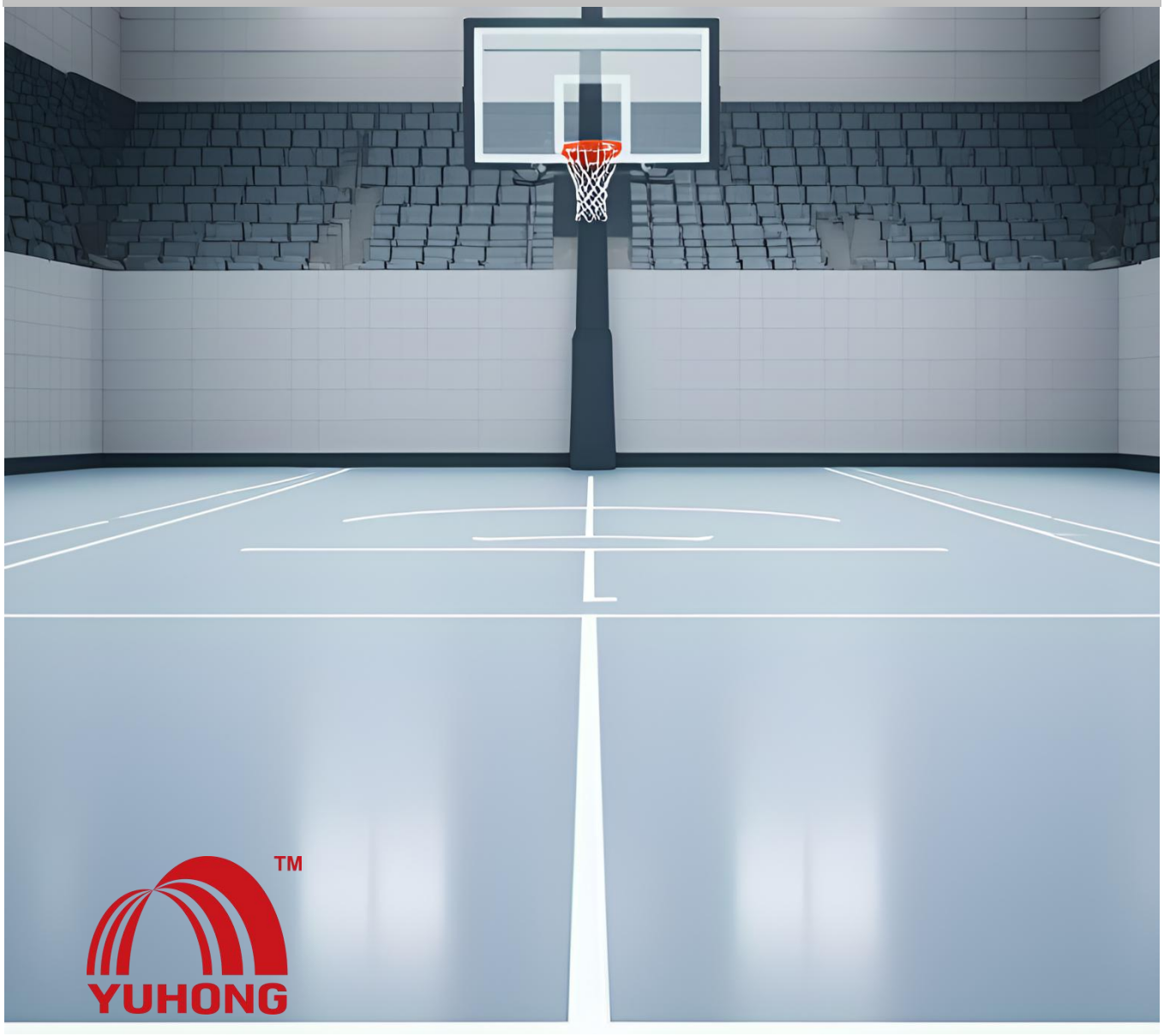
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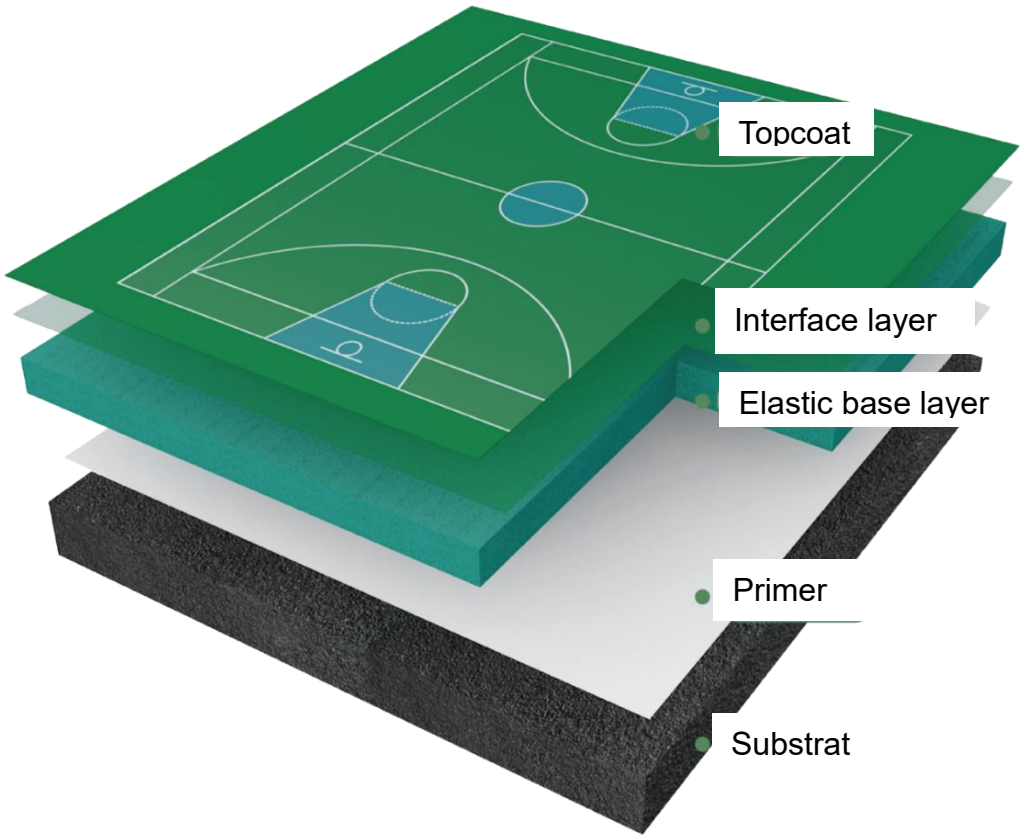


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Construction Structure and System Arrangement



Environmental Requirements

- **Material Storage Conditions:**

Materials shall be stored in a cool, dry, and well-ventilated environment at a storage temperature between 5–35°C. Direct sunlight and rain exposure must be avoided, and all materials shall remain in their original sealed containers.

- **Construction Conditions:**

Weather conditions must be closely monitored during construction. Work shall not be carried out during rain, snow, strong wind, or hail. The recommended construction temperature is 20–35°C, with a relative humidity below 85%. Construction shall not proceed when the temperature exceeds 35°C, falls below 5°C, or when rainfall is expected within 4 hours.

The substrate must have passed acceptance inspection, and it shall be solid, level, and free of dust, oil, and contaminants. The moisture content of the concrete substrate shall be less than 8%.

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Construction Drying Time

Tested at 23°C and 50% RH; drying time may be longer in cooler or more humid conditions.

Layer	Surface Dry Time	Recoat Time
Primer Coat	4 hour	24 hours
Elastic Layer	4 hour	24 hours
Interface Layer	2 hours	8 hours
Finish Layer	2 hour	8 hours
Line Marking	2 hour	8 hours

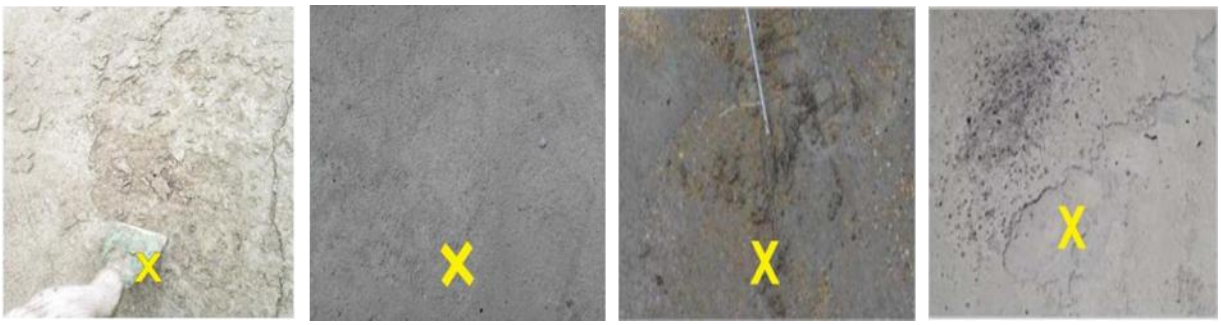
APPLICATION INSTRUCTIONS

1.Substrate Requirements:

1.1 Concrete Base

- The substrate strength must meet the standard of structural concrete C25.
- The substrate surface shall be solid, free of laitance and dusting.
- Surface evenness must meet the requirements. On-site, water testing or measurement with a 3-meter aluminum straightedge can be used. The site must have no large-area water accumulation; water depth within the 3-meter straightedge shall be less than 3 mm. The overall compliance rate of all test points should reach 90% or above.
- The substrate must have a certain slope to facilitate surface drainage of the court, with a slope of 0.5–0.7%.
- The overall curing period of the substrate must be no less than 28 days.





1.2 Asphalt Base

- Check the asphalt structure type first:

Skeleton-porous structure (typical examples: Asphalt Mix AM and OGFC drainage asphalt mix):
This structure has relatively large surface pores. More primer/sealer is required. Material quantities should be confirmed on-site with the client to ensure sufficient primer.
Skeleton-dense structure (typical example: SMA asphalt mix):
This structure has high deformation resistance and good durability. With small pores, it requires less material, making it the ideal asphalt base. However, due to high asphalt content, bleeding may occur, so adequate curing time is necessary before construction.
Floating-dense structure (typical example: AC conventional asphalt mix):
This structure has poor high-temperature stability and is prone to surface bulging or deformation. A thorough inspection of the entire site is required before construction.

- Confirm on-site curing time with the client: The minimum curing time is 7 days. If less than 7 days, watering is required twice daily (morning and evening). For SMA asphalt, a curing period of 10 days or more is required.
- Check for surface bulges or loosely laid areas: Any issues must be communicated immediately and rectified by the asphalt contractor.
- Inspect edges for depressions, cracks, or incomplete finishes: Repairs must be carried out with cold asphalt, and mortar repairs are strictly prohibited.
- Check surface evenness and slope: Requirements are the same as in section 1.1.
- Check for asphalt bleeding (oil seepage) on the surface.

2. Substrate Preparation

(1) Concrete Base

Acid Cleaning:

Scrape off any loose material from the flat substrate surface.Pre-wet the substrate with clean water.

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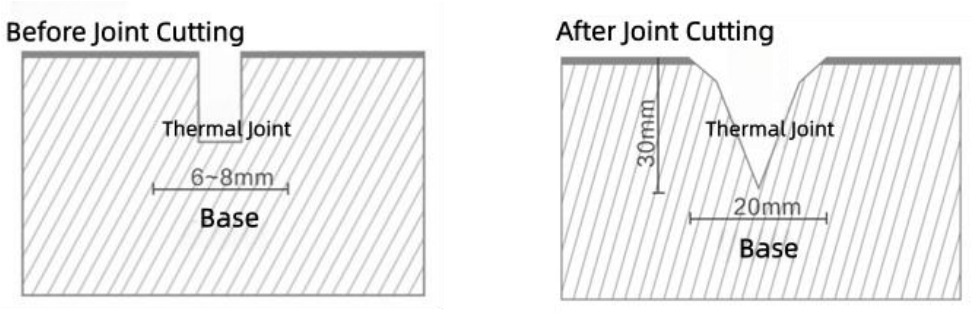
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Apply approximately 8% diluted hydrochloric acid evenly and scrub the surface to remove cement laitance and powdery materials.Rinse thoroughly with clean water to ensure no residual acid remains. The substrate should be free of white powdery deposits and loose particles.Allow the surface to dry, mark areas of water accumulation, and note the water depth.

Cutting Expansion Joints:

- For newly poured concrete, temperature expansion joints must be cut at appropriate intervals. Typically, one block is cut every 5 m × 6 m. Joints must be cut between casting panels. The joint width should be 6–8 mm, and the depth should be ⩾ 20 mm (⩾ 30 mm for concrete bases thicker than 150 mm). This ensures that thermal expansion and contraction are concentrated in the joints and do not cause cracking elsewhere.

- Chamfer the substrate on both sides of the expansion joint: 30–40 mm wide and 30 mm deep, forming a "V"-shaped groove.



Filling Expansion Joints

- Material: Silicone PU elastic layer
- Mixing Ratio: Silicone PU elastic layer : Quartz sand = 1:1
- Application:
  Mix the materials in the specified ratio thoroughly using an electric mixer.Pour the mixture into the expansion joints.Use a trowel or spatula to spread the mixture evenly over the base surface.Allow it to cure for 12 hours.After curing, grind any protruding parts flush with the surface using a grinder and clean the area.





(2) Asphalt Base

For a newly laid asphalt base, clean the surface thoroughly. Wash with a solution of detergent or laundry powder and water, then rinse thoroughly with clean water.For existing asphalt bases with cracks, repair them following the expansion joint repair procedure.

3. Pre-Construction Preparations

Prepare all necessary tools and equipment, including a dust-free dry grinder, trowels, scrapers, blower, sandpaper, angle grinder, polishing machine, spray gun, air compressor, and mixer.

4. Primer Coat Application

4.1 Primer Application on Asphalt Base

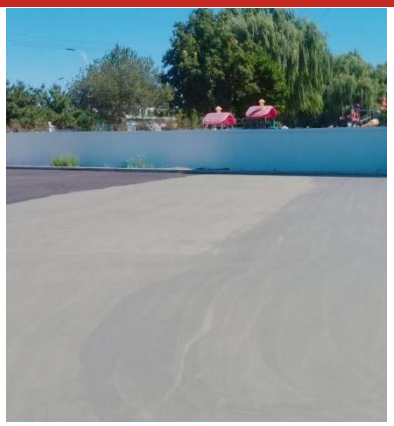
Material	Mix Ratio
Acrylic Primer	1
108 Adhesive	0.6
Quartz Sand (80 mesh)	4
Cement (P.O 42.5)	2

Mix the materials in the order shown in the table: first add cement, quartz sand, and acrylic primer into the mixer and blend thoroughly. Then add the 108 adhesive and an appropriate amount of water, mixing until uniform.

Apply the prepared mixture evenly onto the primed asphalt base using a scraper. For asphalt surfaces with large aggregates, two applications may be required; for smaller aggregates, one application is sufficient. The purpose is to seal the fine pores of the asphalt base. The primer consumption is 0.35–0.7 kg/m².



Application Process



Finished Surface Appearance

4.2 Primer Application on Concrete Base

Material	Mix Ratio
PSV-101 One-Component Universal Primer	1
Dimethyl Carbonate (DMC)	1

Dilute the primer according to the mixing ratio in the above table, then apply it evenly onto the substrate using a roller or a trowel. The recommended consumption of the primer is 0.1–0.15 kg/m².



Primer Application

4. Elastic Layer Application

Material	Mix Ratio
PSV-202 Silicone PU Elastic Layer	1
Catalyst	0.01
Dimethyl Carbonate (DMC)	0.03-0.05

Accurately weigh the materials according to the mixing ratio in the above table, and mix thoroughly. Apply the material using a notched trowel or rake (adjust the material consumption according to the required thickness).

The mixed material must be used within 20 minutes, and deaeration should be completed within the same 20-minute period. Cure for 24–36 hours; after full curing, the surface should be free of noticeable blisters or bubbles, and there should be no obvious trowel marks or seams. The intermediate layer must meet the required average thickness before proceeding to the next layer.

Apply 2–3 coats, depending on the required thickness. The recommended consumption of the elastic layer is 1.2–1.4 kg per mm per m^2.



After the intermediate layer is completed, sprinkle water on the surface and use a marker to circle the areas where water accumulates. Sweep away the standing water, and after the surface is completely dry, repair and level the accumulated water areas using the elastic layer. The flatness requirement is a deviation of less than 3 mm over 3 m.





5.Application of Interface Primer

Material	Mix Ratio
PSV-304 Interface Primer	1
Dimethyl Carbonate (DMC)	1

Apply the interface primer evenly onto the surface of the elastic layer using a roller. The recommended consumption is 0.05–0.06 kg/m².



6.Application of Top Layer

Material	Mix Ratio
PSV-305 Silicone PU Topcoat (Mixing Ratio by Weight 1:14)	1
Quartz Sand (150 – 200 mesh)	0.1-0.15

The topcoat layer is applied in two coats. For the first coat, mix quartz sand into the topcoat according to the ratio in the above table and apply evenly onto the elastic layer using a roller. The second coat is applied without quartz sand, either by spraying or rolling. The recommended consumption of the topcoat is 0.2–0.4 kg/m².





7. Line Marking Application

Positioning:

Use theodolites, steel tape measures, and other measuring tools to locate all marking lines in accordance with standards or design drawings. Measurements must be taken repeatedly and verified for accuracy. Once confirmed, mark the positions on the PU surface using a marking pen or special pencil.

Verification:

After positioning, verify angles using radial measurements. For straight sections, recheck using certified steel rulers (including length calibration and temperature correction). Line marking may proceed only after all measurements meet the required standards.

Masking and Application:

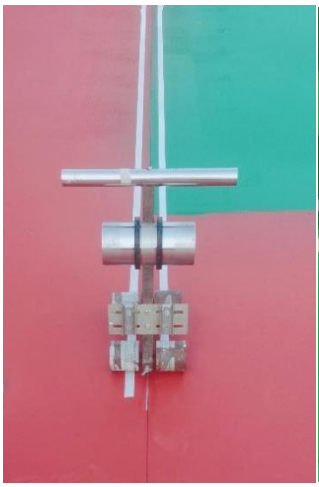
Apply masking tape along the markings, mix the line marking paint, and apply using rolling or brushing methods.

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Application Quality:

Operators must control rolling or brushing pressure to ensure clean, aesthetically pleasing lines with uniform color.



Apply masking tape



Line Marking



Finished Appearance

CONSTRUCTION PRECAUTIONS

- Measure substrate slope carefully; mark and correct areas with large deviations.
- Assign trained personnel for material batching to avoid errors in materials or ratios.
- Weigh each material accurately; if using container markings, deduct container weight and check calibration daily.
- Do not apply the primer layer too thickly. Apply the elastic layer in at least two coats to control thickness and prevent unevenness.
- Degas the elastic layer to avoid air voids after curing.
- Repair water accumulation areas and test repeatedly with water to ensure no pooling before topcoat application.
- Avoid construction in strong wind to prevent contamination and poor drying.
- Do not construct in rain, which may cause curing issues, cracking, or delamination.
- Discard any unmixed material if mixing is interrupted (e.g., power outage).
- Adjust catalyst and thinner ratios if temperature drops, and extend intervals between layers to ensure full curing.
- Purchase high-quality dimethyl carbonate (DMC) locally and test on-site to ensure proper curing; avoid DMC with excessive moisture, alcohol, or acid.