

UQESH® PF-Plus Sand-Broadcast Anti slip Waterborne Polyurethane Mortar System **3mm**



01 Description

UQESH®

UQESH® PF-Plus is a four-component Sand-Broadcast Anti slip Waterborne Polyurethane Mortar system, consisting of primer, sand-broadcast intermediate layer, and a topcoat. It is specifically designed for areas with heavy load and high anti slip requirements, forming a robust, durable anti-slip surface with a special coarse texture.

02 Uses

- Storage and logistics areas, and other zones subject to heavy goods transport and equipment traffic.
- Locations with extremely high anti-slip safety requirements, such as ramps and loading docks
- Food and beverage processing areas that are wet or require frequent washdown.
- Other outdoor or semi-outdoor sites requiring both high anti slip performance and heavy load resistance.

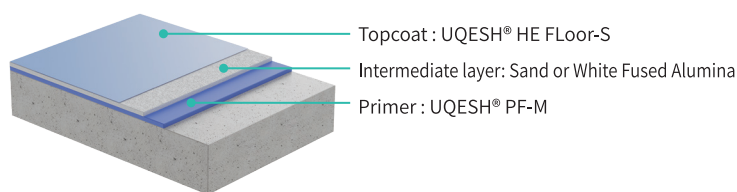
03 Product Characteristics

- Waterborne and odorless
- Excellent load-bearing and impact resistance
- R12-13 anti-slip rating, safe and durable
- Chemically resistant
- Suitable for environments ranging from -20°C to 90°C and for long-term high-temperature steam flushing

04 System Composition

System component	Product	Recommended dosage (kg/m ²)
		3mm
Primer	UQESH® PF-M*	3-4
Intermediate layer	Sand or White Fused Alumina	4
Topcoat	UQESH® HEFfloor-S	0.6

* -M denotes matte finish



Schematic diagram

Product Specifications

The product is supplied in full units as A+B+C+D packs.

Product	Total weight per set(kg/set)	Part A (kg/bag)	Part B (kg/bag)	Part C (kg/bag)	Part D (kg/bag)	Suggested dosage (kg/m ² /mm)
PF-M	16	2.5	2.8	10.2	0.5	2kg/m ² /1mm
HEFloor-S	6	2	2	1.5	0.5	0.1-0.14kg/m ² /0.06-0.08mm

System Technical Parameters

Item	Technical index	Reference standard
7d Compressive strength / MPa	≥40	ISO 679-2009
7d Flexural strength / MPa	≥10	ISO 679-2009
7d Tensile bond strength / MPa	≥2.0	ISO 4624-2016
Shore hardness (Type D)	≥80	ISO 868:2003
Dry coefficient of friction	≥0.8	ASTMC 1028-07
Anti-slip grade	R12-R13	DIN 51130
Impact resistance	1kg, 200cm, No cracking or delamination	ISO 6272-1:2011
Volatile organic compounds (VOC) g/L	≤10	ISO 4624-2016
Chemical resistance	Resistant to a variety of chemicals. For specific resistance, consult UQESH Technical Department.	/
Fire resistance	Bfl-S1	EN 13501-1

Application Conditions

Substrate Requirements

Substrate temperature range	10°C - 30°C
Substrate relative humidity (RH)	≤ 93%
Ambient relative humidity range (RH)	≤ 80%
Concrete substrate compressive strength	≥ 25MPa
Concrete tensile strength	≥ 1.5MPa

- ▶ Application is not recommended when the substrate surface temperature ranges from 5–10°C.
- ▶ Application is not recommended when ambient relative humidity exceeds 80%.

Surface Preparation

- ▶ Surface preparation shall comply with the following: treat the surface with a concrete grinder or light shot blasting (Note: shot blasting may leave residual marks not fully covered by subsequent coatings). Completely remove all cementitious laitance to expose a sound substrate, ensuring the surface is dry, dust-free and properly textured.
- ▶ Use hand-held equipment for hard-to-reach areas (e.g., wall bases, corners). Repair damaged or uneven areas with **PF** mortar (consult UQESH in advance for alternative materials) or conduct mechanical grinding to ensure a smooth, coating-suitable surface.
- ▶ Properly cut anchoring grooves in the application area; mandatory along all perimeter edges and around drains/outlets. (Refer to the System Installation Manual for detailed procedures.)

Application Instructions

Mixing

All pack components are pre-measured for optimum performance. Do not split packs. If proportioning is required, measure strictly by weight using calibrated digital scales.

NO.	Step	Details
①	Pre-Mix Main Agent	Shake Part A to disperse sediment, then pour it into a mixing bucket.
②	Add Color Paste	Add Part D into the mixing bucket.
③	Add Curing Agent	Add Part B into the mixing bucket.
④	Mix Liquid Components	Mix quickly for 10 seconds until the mixture is uniform.
⑤	Add Aggregates	With the mixer is running, add Part C and continue mixing for 30 seconds until the slurry is smooth and lump-free.
⑥	Mixing Time	Complete mixing in 40–90 seconds . The mixture must be used immediately.
⑦	Spreading	Pour the mixture immediately and spread using a 2–3mm serrated trowel.

*Adjust times based on temperature if needed.

Pot Life

25°C	≤10 minutes
15°C	15-20 minutes

Application Method

Apply the mixed material evenly to the substrate using a pin rake or notched trowel. When applying the topcoat, back-roll with a spike roller to aid flow and release entrapped air. Complete application **within 10 minutes** of mixing to ensure optimum bonding and surface finish. For detailed application procedures, refer to the system installation.

Curing Times (at 25°C)

Curing time	Opening for
8 hours	Foot traffic
24 hours	Light vehicular / equipment traffic
48 hours	Heavy traffic and chemical exposure

* Times are estimates and may vary depending on environmental and substrate conditions.

Special Notes

- ▶ Final floor flatness is dependent on the condition and flatness of the existing substrate. Where specific flatness tolerances are required, a project-specific installation plan shall be prepared in advance.
- ▶ The polyurethane flooring system is not inherently prone to cracking, cracking may occur due to substrate movement, including thermal expansion and contraction.

Transportation & Storage

- ▶ Store in original, unopened packaging in a dry, cool, and well-ventilated area at **5–35°C**, away from heat sources and open flames.
- ▶ During transportation, ensure the materials are securely stacked and the vehicle is dry and enclosed. Protect from moisture, frost, freezing, direct sunlight, and rain. Components A and B must be protected from frost at all times.

Shelf Life

(when stored in original, unopened packaging under recommended storage conditions)

- Parts A, D: 18 months from date of manufacture
- Parts B, C: 12 months from date of manufacture

Environment, Health & Safety

- ▶ For detailed health and safety information relating to UQESH® PF-Plus Sand-Broadcast Anti Slip Waterborne Polyurethane Mortar System, refer to the relevant Material Safety Data Sheet (MSDS).
- ▶ The following general precautions apply to all UQESH products:
 - During transportation, storage, and application, avoid contact with eyes, mouth, and foodstuffs.
 - In the event of eye contact, rinse immediately with plenty of clean water and seek medical attention.

Statement

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UQESH® hereby declares that it is confident that the information involved herein is true and accurate as of the date of publication. UQESH makes no express or implied warranties regarding the contents of this product manual. We reserve the right to revise this manual at any time without prior notice. Please contact UQESH® to obtain the latest version of this manual.

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