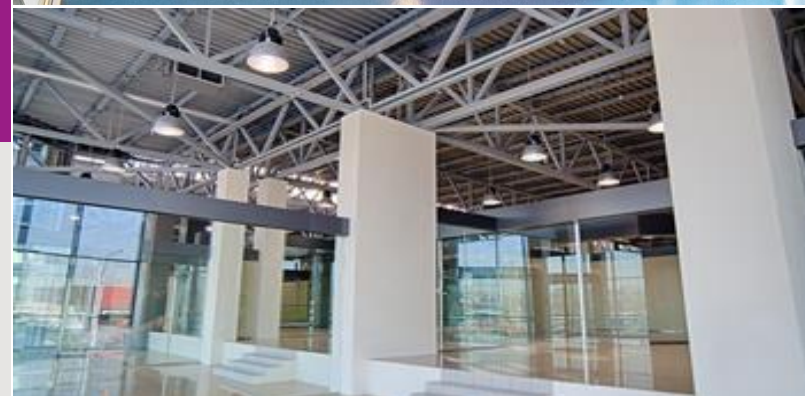
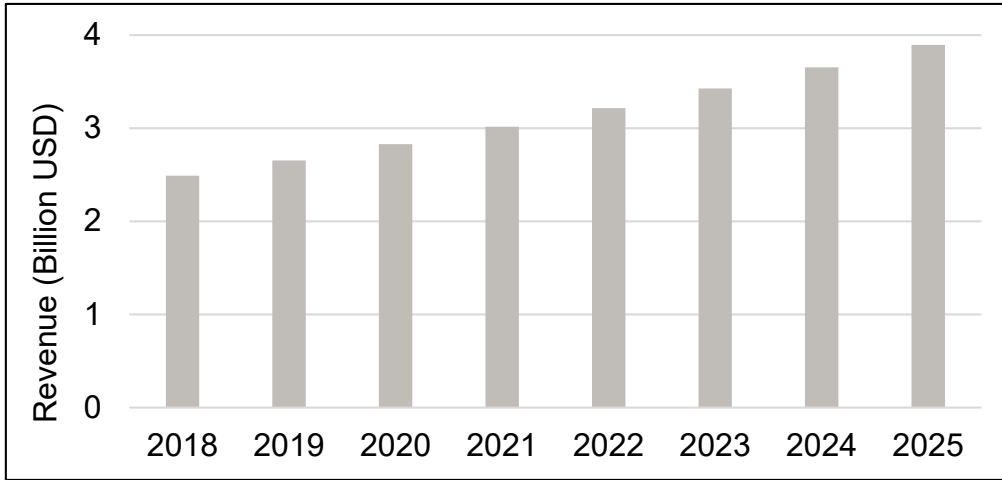


You're on Safer Ground with Waterborne Epoxy Flooring

Dr. Shiyong Zheng
Evonik Corporation

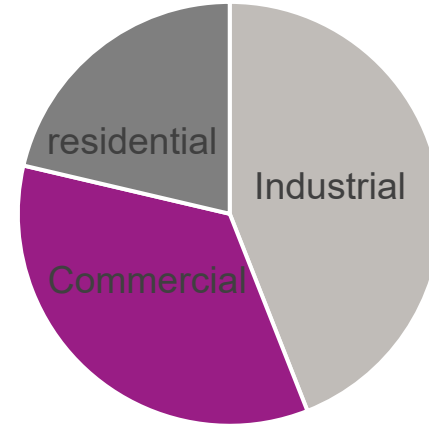


Global Floor Coatings Market is Growing



Residential

- Kitchen
- Bathroom
- Garage
- Walk way
- Patio

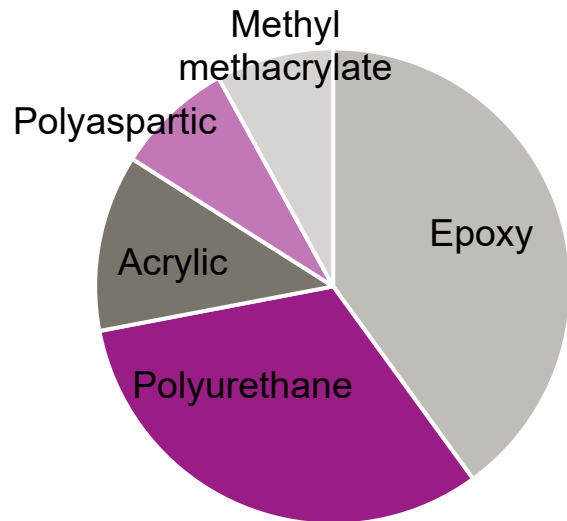


Industrial

- Food & beverages
- Manufacturing (electronics machinery equipment)
- Pharma
- Chemical industry

Commercial

- Parking deck
- Warehouses
- Distribution centers
- Airplane hangars
- Retail outlets
- Healthcare
- Education



Why Epoxy floor coatings?

High performance and cost effective

- Strong mechanical properties
- High abrasion resistance
- High chemical resistance
- High durability
- Good aesthetics

<https://www.grandviewresearch.com/industry-analysis/floor-coatings-market>

What are the Market Trends and Drivers in Epoxy Flooring?



Enhanced Product Performance

Better

- Good aesthetics – pleasant working environment
- Better UV stability – stable color through service life
- Good chemical resistance – withstand spill and cleaning
- Pigment acceptance – decorative flooring



*Productivity Improvement
Fast Return to Service*

Faster

- Fast cure speed – recoat within 4h
- Low temperature cure – down to 10 °C and high humidity
- Surface tolerance – less preparation time
- Robust application – up to 20 mils per coat



Eco and User Friendly

Safer

- Low to zero VOC – improved worker safety
- Low emission – improved indoor air quality
- Sustainability and recyclability – better for environment

Why Consider Waterborne Epoxy Systems for Flooring?

Waterborne epoxy offers competitive advantages

- Provide best-in-class adhesion to concrete
- Can be more cost-effective than solvent-free
- Offer performance and environmental advantages
- Commands ~ 20% of the epoxy market



Factory Floors

Easy to apply
Excellent mechanical properties



Electronics

High aesthetics



Parking Decks

Superior over-coatability
High durability

Evonik's capabilities

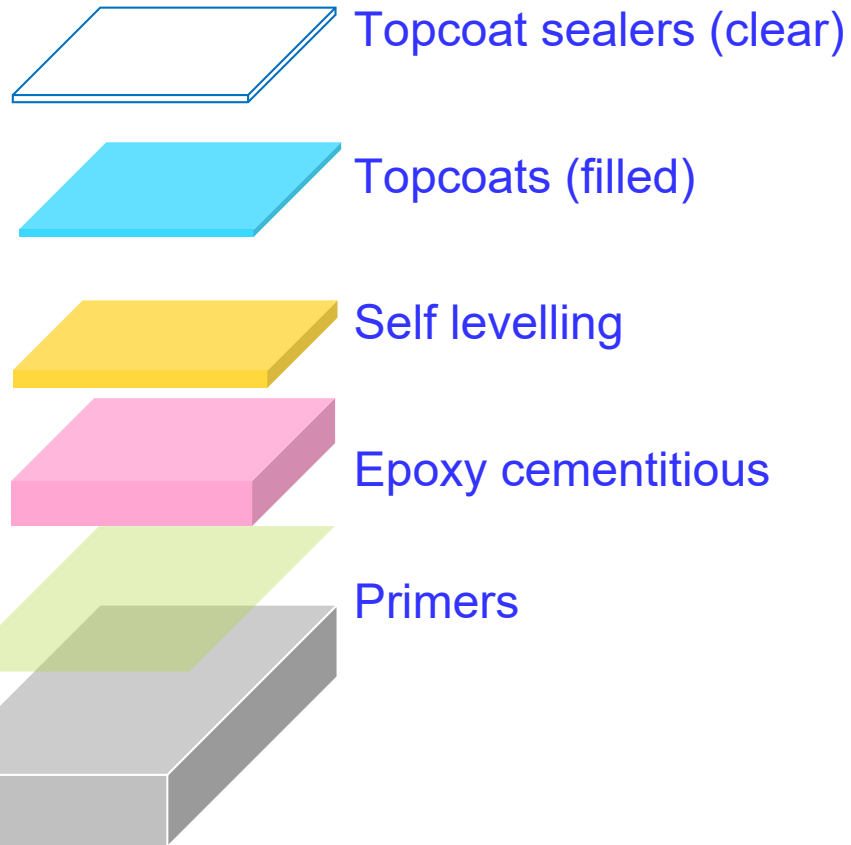
- Unique amine design & synthesis
- Understanding structure-property relations
- Waterborne expertise
- Deliver technology to meet market needs

Market needs

- Low VOC, low emission
- Excellent aesthetics
- Fast return to service
- Excellent adhesion
- Good chemical resistance
- No carbamation

Waterborne epoxy systems

Evonik Waterborne Product Overview



Product	Key features
Anquawhite™ 100, Anquamine® 728	Excellent transparency and UV, stain resistance
Anquamine® 701, 721, 728	Good UV, fast, high quality finish
Anquamine® 701, 735	High build, cost effective, no osmotic blistering
Anquamine® 287	Thermal shock, cost effective
Anquamine® 287, 360, 401, 721, 728	Excellent adhesion, no carbamation

Evonik Waterborne Epoxy Product Positioning

UV durability

Anquawhite™ 100

- Excellent clarity & UV durability
- Often fast dry with AR 555
- Long pot life with LER

Excellent UV

UV durability + Fast cure

Anquamine® 721/LER

- Excellent cost economic coatings
- Excellent aesthetics, high carbamation resistance
- Excellent adhesion

Anquamine® 728/LER

- 8h walk-on at 10C
- Excellent aesthetics, high carbamation resistance
- Excellent adhesion
- Apply up to 20 mils WFT

Anquamine® 728 /AR555

- 4h walk-on at 10C
- Excellent aesthetics, high carbamation resistance
- Excellent adhesion
- Apply up to 20 mils WFT

Slow cure

fast cure

Standard primer

Improved clarity & UV

Faster

Even Faster

High build

Anquamine® 735/LER

- High build floor (1-3mm)
- Water vapor permeability
- Cost effective SL floor

Anquamine® 701/LER

- Versatile: coatings and high build floors
- Fast cure at ambient and low T
- Water vapor permeability in SL

Faster

Anquamine® 401/SER

- Fast cure, in combination with Ancrez AR555

Thermal shock cementitious

Anquamine® 287/LER

- Penetrating primer
- Excellent adhesion
- Thermal shock resistant with cement

Slower cure

Fair UV

Fast cure

Anquamine[®] 728 Curing Agent

Novel Waterborne Epoxy Technology that Provides a Fast Return-to-Service and Excellent Aesthetics Flooring

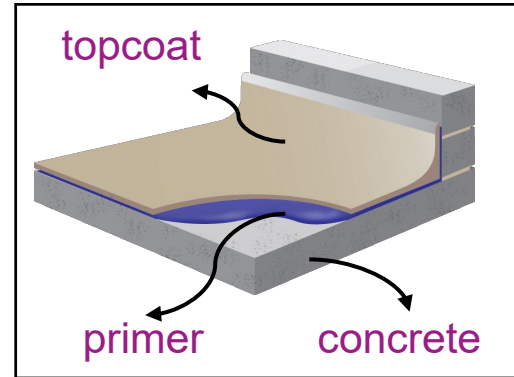


Anquamine® 728 Allows Installation of High Quality Floor in One-Day

- Use as both primers and topcoats

Anquamine® 728

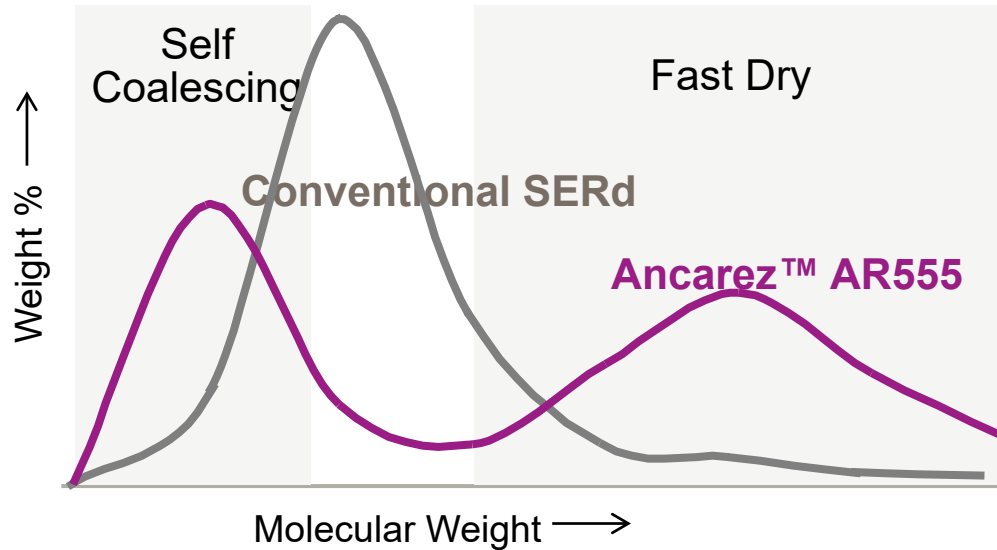
Appearance	Clear yellow liquid
Color (Gardner)	5 max
Viscosity (cP)	5,000-15,000
Solid% as delivered	53-57%
AHEW	250
Use level LER	130 phr
Use level Ancarez AR555	34



1. Apply fast dry and fast cure primer
2. Topcoated by the same shift and same crew after a few hours

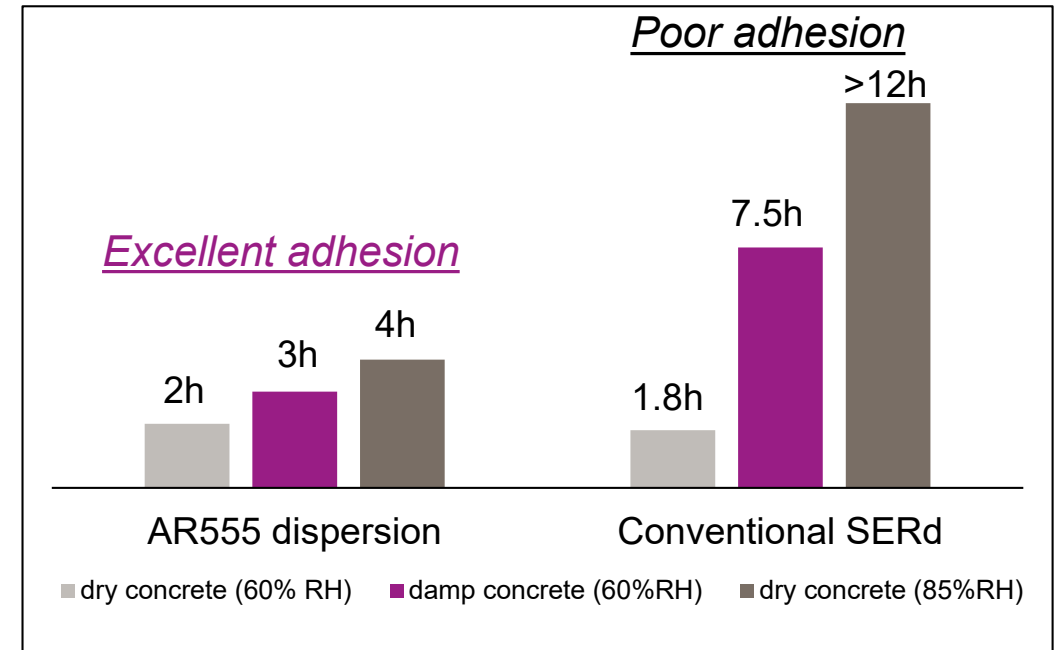
Market needs	Coating with diluted LER	Coating with Ancarez™ AR555
Faster	1 coating per day	2 coatings per day
Better	Good aesthetics, excellent pigment acceptance, light color, excellent adhesion, robust film build	
Safer	Zero VOC	Zero VOC

Fast Cure Primer Under Adverse Conditions and Excellent Adhesion to Concrete



- Bimodal distribution eliminate the need for coalescing solvent, zero VOC
- Delivers combination of
 - **Fast dry** of a solid epoxy resin, and
 - **Excellent adhesion** performance of a liquid epoxy resin

Anquamine® 728 primer dry hard time (h)



- Evaluated 10 °C/60% RH, on dry and damp concrete at wet film thickness (WFT) of 15 mil
- dry concrete is acclimated at the test temperature and humidity for 24 hours, has a moisture content 1%-2%. Damp concrete is a blocked immersed in water at test temperature and humidity for at least 24 hours, taken out, and surface water wiped off. It has a moisture content 3-4%.
- Adhesion test: ASTM D7234; excellent adhesion: concrete failure, >870 psi (6 MPa) bond strength; poor adhesion: coating failure

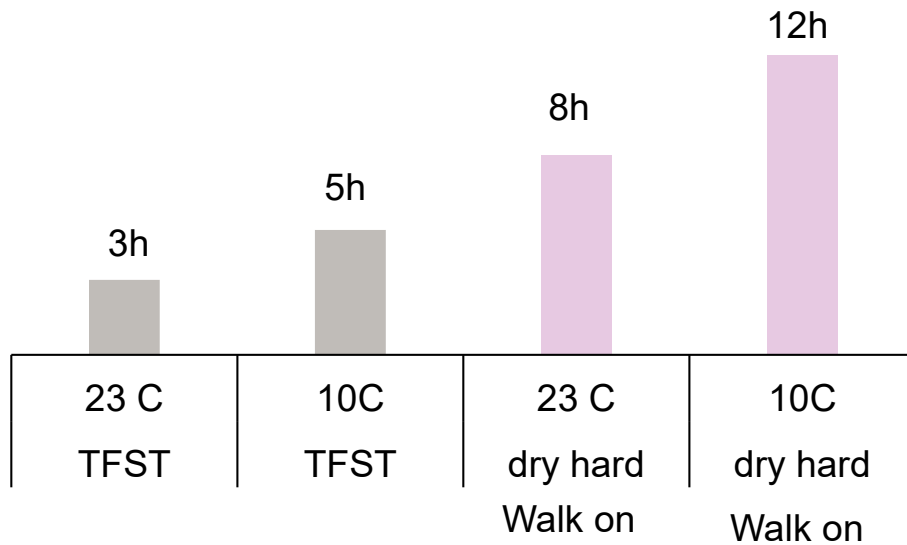
Anquamine® 728 White Topcoat with Diluted Liquid Epoxy Resin

— Fast Cure and Excellent Adhesion to Primer

Topcoat requirements

- Fast cure at 10 °C, walk on < 16h
- Excellent intercoat adhesion to primer > 435 psi (3 MPa)

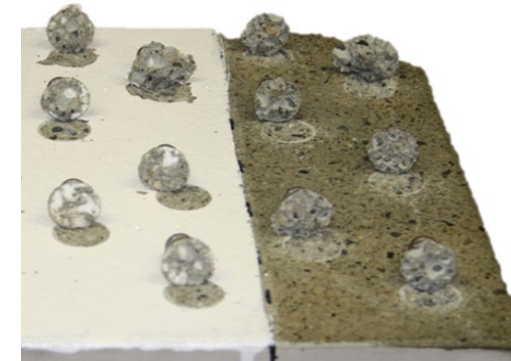
Fast dry time



*TFST: ASTM D5895,
dry hard: damp concrete, 15 mil WFT, ASTM D1640

Excellent Intercoat adhesion

900 psi (6.2 MPa)



Primer +
topcoat

primer

Anquamine® 728 White Topcoat with Diluted Liquid Epoxy Resin

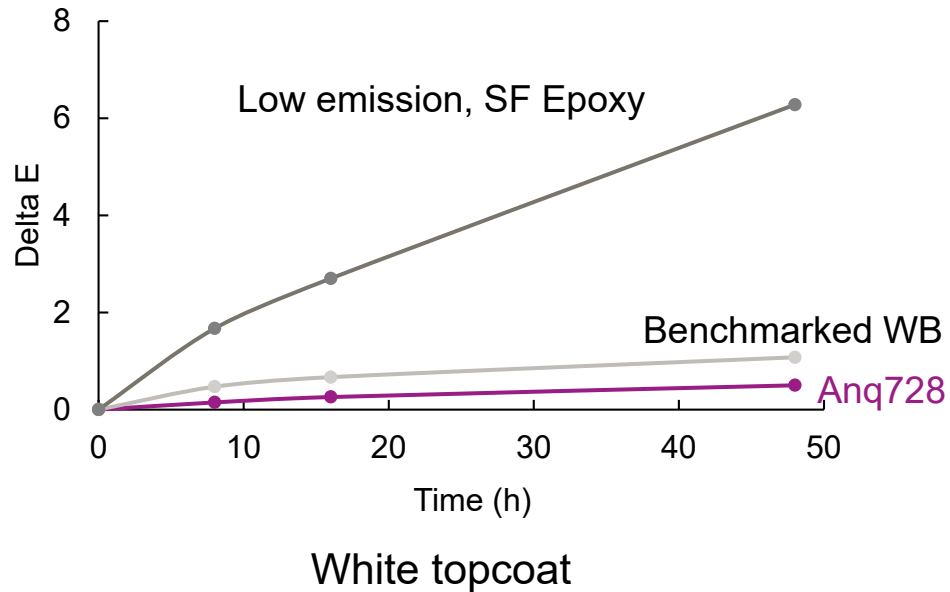
— Excellent Aesthetics

Topcoat requirements

- Excellent UV durability
- Good pigment paste compatibility

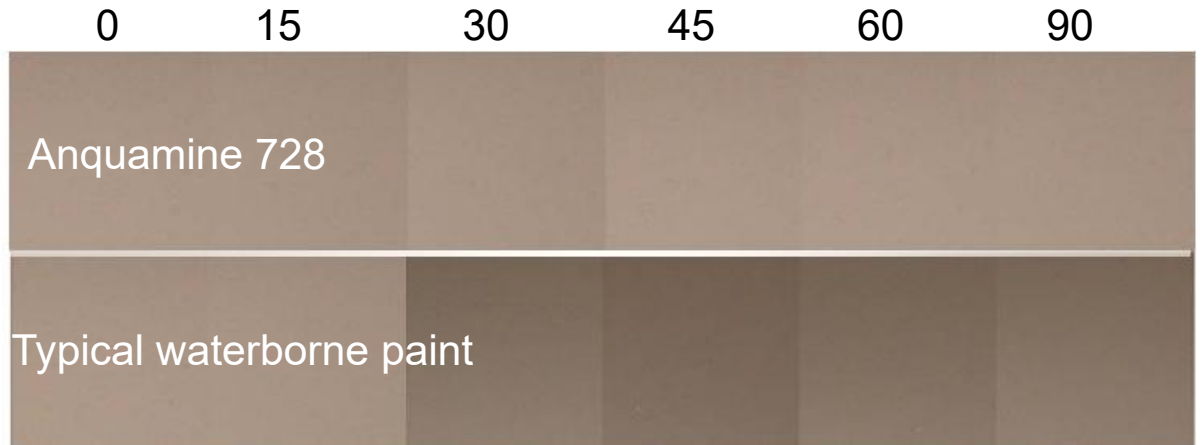
Excellent UV Resistance

Accelerated UV Resistance at 45 °C



Color Stability Through Pot Life *(with LER, white base tinted)*

Time through pot-life (mins)



Anquamine® 728 One Day Floor Demonstrates Good Chemical and Stain Resistance

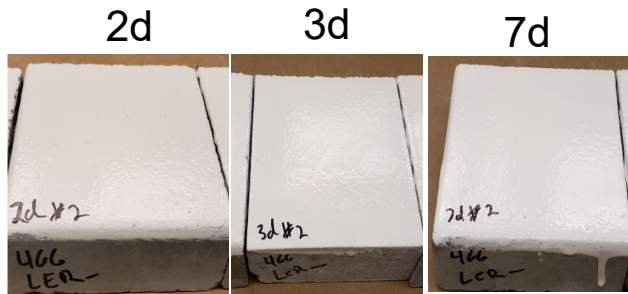
- The chemical and stain resistance against standard reagents indicate excellent performance, making the floor suitable for typical applications where spills are likely and good housekeeping followed with clean up within 24 hour period

Chemical Resistance 24 hour, spot test	3% Acetic Acid	No effect
	50% NaOH	No effect
	water	No effect
	70% sulfuric acid	Some discoloration
	Ethanol	Minor swelling
	MEK	Swelling
Stain Resistance 24 hour, spot test	Red Wine	No effect
	Tea	No effect
	Coffee	No effect
	Cola	No effect
	Ketchup	No effect
	Mustard	Slight stain

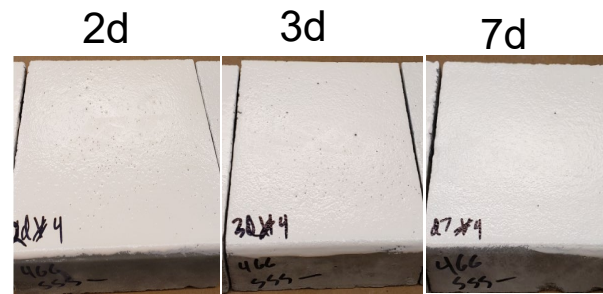
Anquamine® 728 Floor Resists Hot Tire Pickup

Stain / imprint / delamination rating

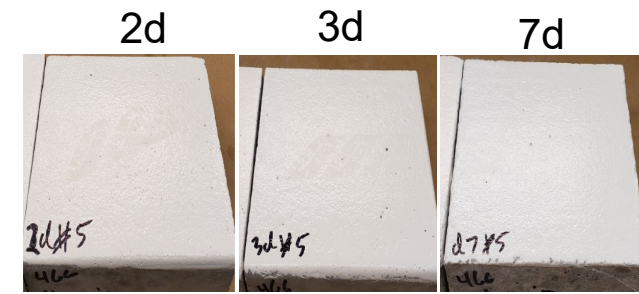
	Anq 728/LER	Anq728/AR555	Commercial Product
2 day cure	5 / 4 / 5	5 / 4 / 5	5 / 3 / 5
3 day cure	5 / 4 / 5	5 / 5 / 5	5 / 3 / 5
7 day cure	5 / 5 / 5	5 / 5 / 5	5 / 5 / 5



Anq 728/LER



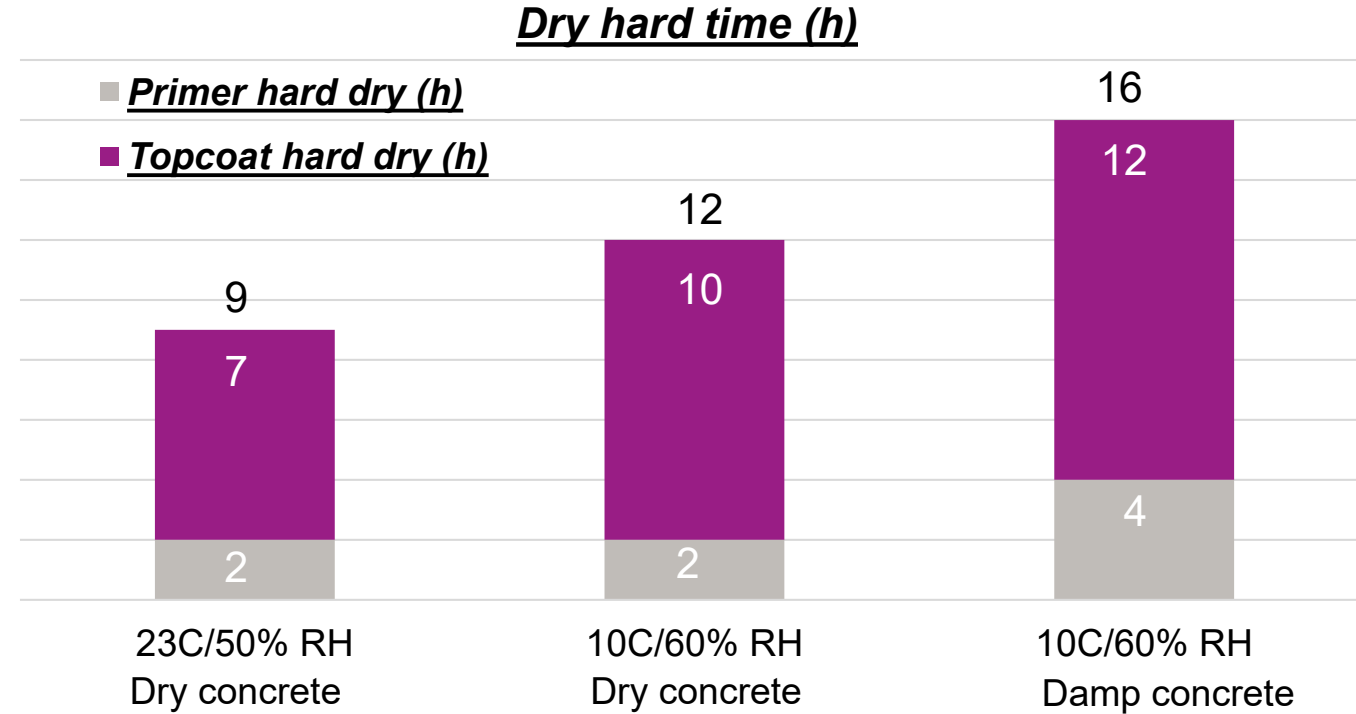
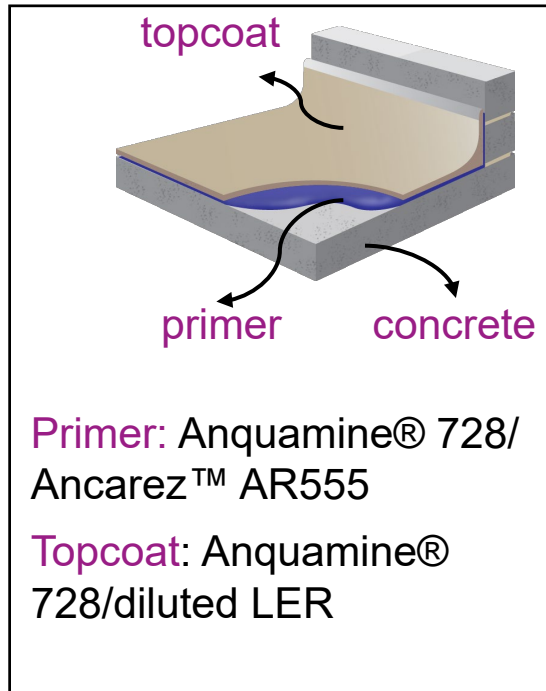
Anq728/AR555



Commercial Product

Rating	Stain	Imprint	Delamination
5	No Staining	No Imprint	No Delamination
4	Very Slight Stain	Very Slight Imprint	10 to 20% Delamination
3	Slight or Partial Staining	Slight or Partial Imprint	30 to 40% Delamination
2	Medium Staining	Medium Imprint	50 to 60% Delamination
1	Heavy Stain	Heavy Imprint	70 to 80% Delamination
0	Full, Dark and Complete Tread Stain	Deep and Total Imprint of tread in coating	90 to 100% Delamination

Anquamine® 728 Delivers a High Performance One-Day Flooring



- Primer and Topcoat applied at WFT of 15 mil, dry hard: ASTM D1640
- Adhesion test; ASTM D7234, bond strength >900 psi (6.2 MPa)

Better →

- Excellent aesthetics
- Strong primer adhesion to concrete and intercoat adhesion

Faster →

- Ready to return to service in 24 hours

Safer →

- Zero VOC

Anquamine[®] 735 Curing Agent

High Build Self-levelling Floor



Anquamine® 735 for High Performance High Build Self Leveling Floor

Anquamine® 735 high build self leveling floor (1-3 mm) applied in high traffic areas

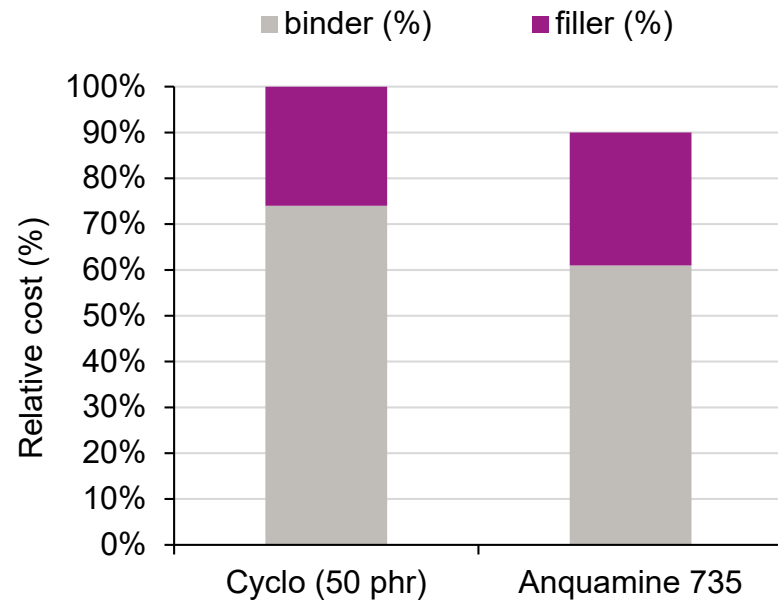
- **Better:** High performance and excellent aesthetics
 - Good yellowing resistance
 - Good carbamation resistance
 - Excellent adhesion dry and damp concrete
 - Excellent pigment paste compatibility
 - Matte surface finish (evens surface appearance/hides substrate imperfections)
 - Plasticizer free, higher heat deflection temperature
 - Low cost-in-use vs. solvent free systems by reduced binder demand
- **Faster:** Rapid property development at ambient and low temperature for fast return to service
- **Safer:** Zero VOC, low odor, environmentally friendly

Typical Properties	Anquamine® 735
Appearance	Clear Liquid
Colour (Gardner)	5
Viscosity @ 25 °C	< 30,000 cP
Total Solids Content	55%
AHEW	200
Recommended use Level	100 phr with diluted LER

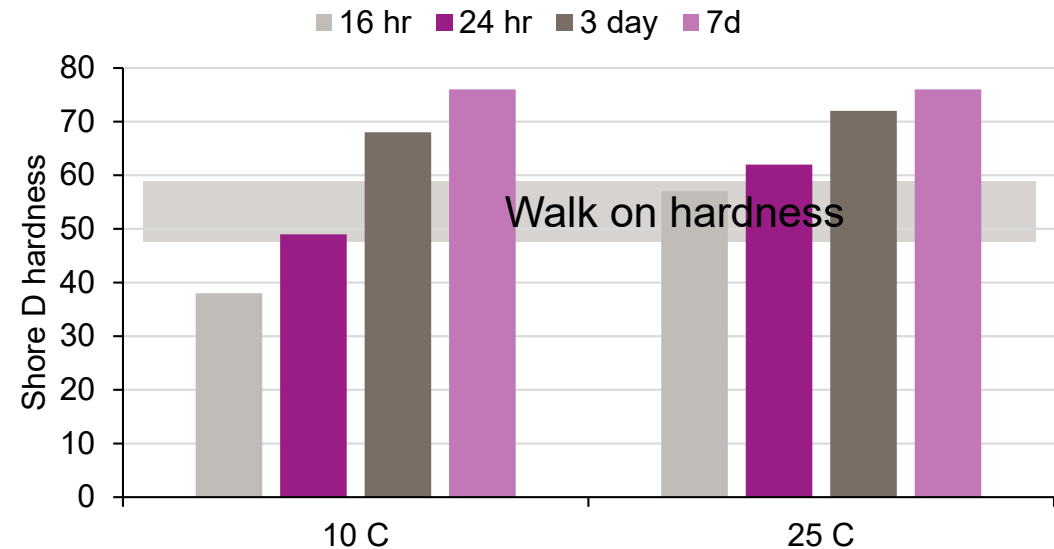
Anquamine® 735 in Self Levelling Floor – Better Cost-in-use and Fast Return to Service

- Anquamine® 735 vs. solvent free systems: cost-in-use advantage approx. 10%.
 - Solvent free systems: an excess amount of binder is required to offer self levelling properties → high material cost
 - Anquamine® 735 self levelling systems: flow characteristics can be adjusted by addition of water formulated to offer optimum protection with a reduced amount of binder
- Fast return to service within 24 hours

Cost-in-use advantage

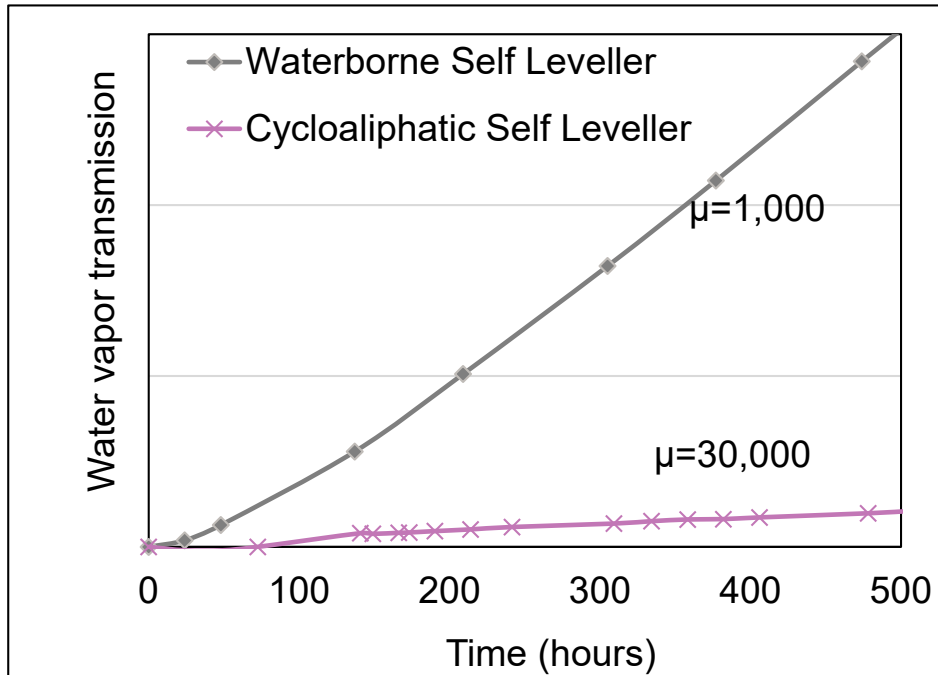


Fast return to service of Anquamine® 735



Anquamine® 735 Self Leveling Floor is Breathable

- High Water Vapor Transmission, 30x higher than solvent free system

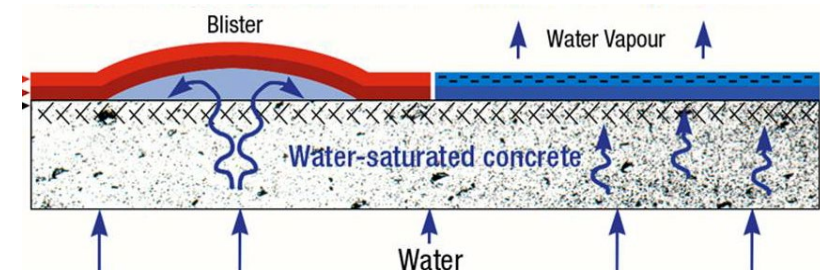


μ indicates moisture resistance of specimen relative to moisture resistance of motionless layer of air of the same thickness and temperature ($\mu \equiv 1$)

High Water Vapor Transmission



No Osmotic Blistering



Anquamine® 735 Self Leveling Floor – Mechanical and Impact Resistance

Physical Properties	Anquamine® 735	Cycloaliphatic (50phr)
Surface appearance	Satin / Matt	High Gloss
Compressive strength (28 days)	40 MPa	60 MPa
Adhesion to dry concrete	4.5 MPa	4.0 MPa
Adhesion to damp concrete	4.3 MPa	0.5 MPa
Impact resistance	180-200 kg.cm	< 100 kg.cm
Abrasion resistance (Taber C17)	300 mg	260 mg
Plasticizer free	Yes	No

Anquamine® 735 Self Leveling Floor Provides Protection Against Spills to Increase Floor Service Life

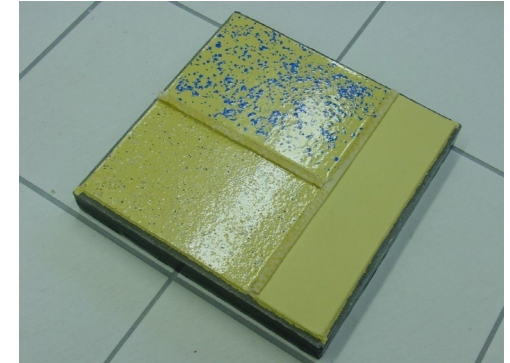
- Anquamine® 735 also has excellent chemical and stain resistance against standard reagents, making the floor suitable for typical applications where spills are likely and good housekeeping followed with clean up within 24 hour period

Chemical Resistance 24 hour, spot test	3% Acetic Acid	No Effect
	10% NaOH	No Effect
	Ethanol	No Effect
	Xylene	No Effect
	Water	No Effect
Stain Resistance 24 hour, spot test	Red Wine	No Effect
	Tea	No Effect
	Coffee	No Effect
	Cola	No Effect
	Mustard	Slight stain
	Ketchup	Slight stain

Anquamine® 735 Self Leveling Floor is Versatile and Can be Easily Modified

Modifications of SL Floors

- Different color pigments and fillers can be used to alter the appearance
- Broadcasting will give non-slip textures and patterns
- Topcoats can be used to give higher gloss and chemical / stain resistance
- Recommended topcoats are 2K polyurethane, 1K PUD or PUD hybrids such as our Hybridur® systems or Anquawhite™ 100 WB epoxy



Anquamine 735 Self Leveling Floor

Faster → • Rapid hardness development even at lower temperatures

Better → • Cost effective self leveling floor system

- Excellent adhesion to dry and damp concrete
- Excellent pigment acceptance
- High heat deflection temperature (HDT), suitable for steam cleaning
- High permeable floors to eliminate risk of osmotic blistering

Safer → • Zero VOC, emission compliance



EVONIK

Leading Beyond Chemistry

Anquamine 728 product positioning

→ Unique combination of fast cure *and* good aesthetics

<input type="checkbox"/> Recommended <input checked="" type="checkbox"/> Excellent	Diluted LER (90/10 Epon 828/Epodil 748)					Ancarez AR-555 SER dispersion		
	Anq 728	Anq 721	Anq 401	Anq 100	Epilink 701	Anq 728	Anq 401	Anq 100
Concrete Primer	■	■	■			■	■	
Standard Concrete Paint	■	■	□	■	■	■		■
Transparent Sealer	■			■		□		□
Self Levelling (1-5 mm)					■			
Key Features								
Fast cure down to 10°C	□		□		□	■	■	
High UV durability	■	□		■		■		■
High carbamation resistance	■	■	■	■	■	■	■	■
Robust application (500 g/m ²)	■			■		■		
High coating transparency	■	■		■		■		■
Minimal pigment flocculation	□	■				□		
Low emissions <small>□ Preliminary assessment based on product composition</small>	■ A	■	□	□	□	■	□	□

Starting Point Formulations of Anquamine 728 Floor System

- Primer based on SER dispersion Ancarez AR555; Topcoat using diluted LER

Part A		Concrete Primer* (pbw)	White Topcoat** (pbw)
Anquamine 728 curing agent		20	24
TEGO® Foamex 845 defoaming agent	Evonik	0.1	0.2
Zetasperse 3800 dispersing agent	Evonik		0.95
Ti-Pure R960 titanium dioxide	Chemours		21
Tafigel PUR-55 rheology modifier	Muenzing		0.55
SURFYNOL® 420 leveling agent	Evonik		0.4
Water		19.9	14.9
Part B			
Ancarez AR555 epoxy resin dispersion	Evonik	60	
90/10 Epon828/Epodil 748 diluted LER			19
Total Parts		100	100
Solids content (wt%)		44%	55%

Performance of Anquamine 728 with Freeze Thaw Stable Ancarez AR555

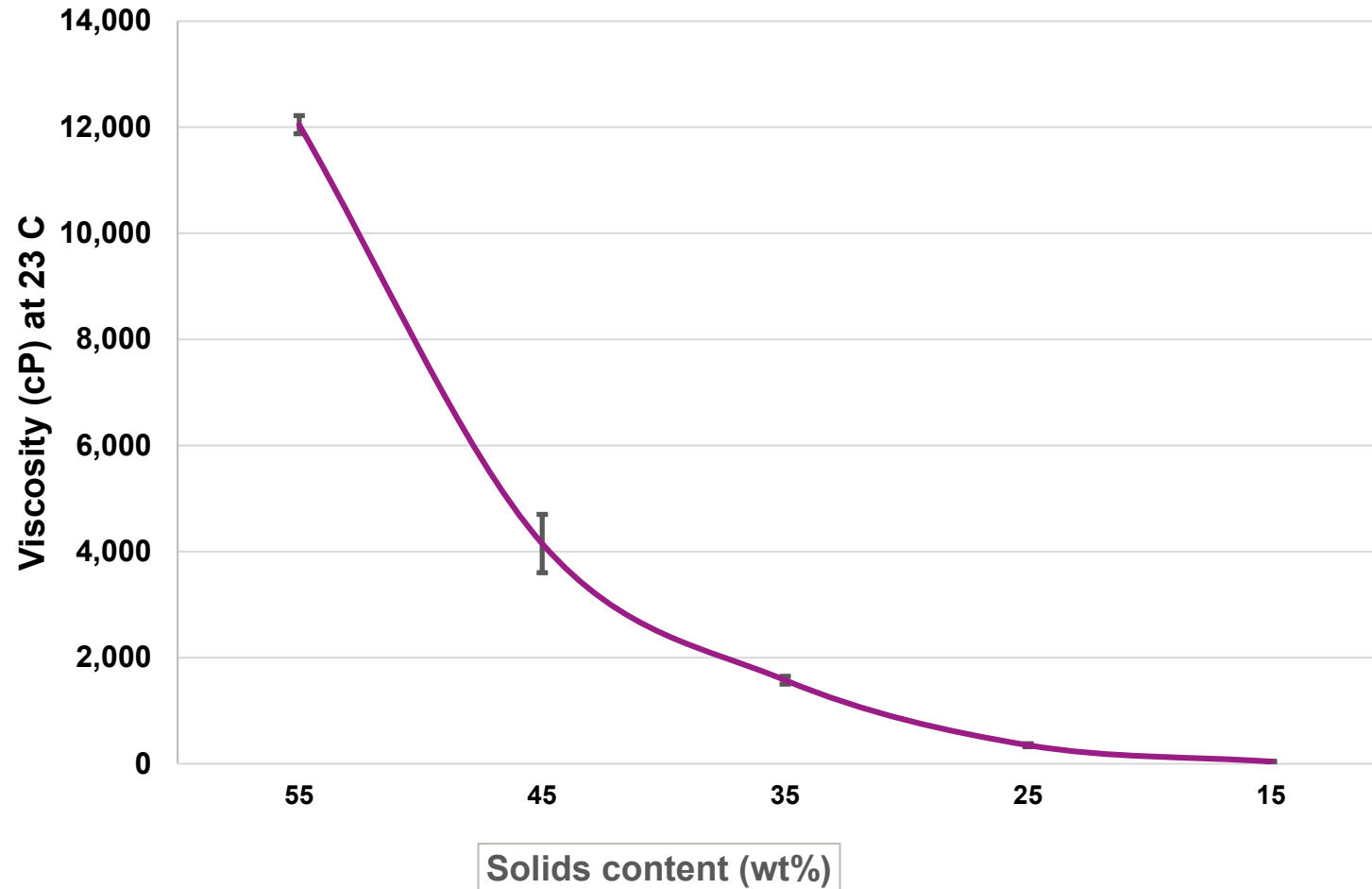
Property	AR555	AR555/10% Dowanol PM
Pot life (minutes)	90	90
TFST (h)		
25C phase 3	1.1	1.0
10C phase 3	2.5	2.4
Dry hard on dry concrete (h)		
25C	2.0	2.0
10C	2.0	2.0
Concrete adhesion (psi)		
25C dry	826	720
damp	853	922
10C dry	895	800
damp	1010	1066

- Adding 10% of Dowanol PM to AR555 does not impact the performance

Anquamine 728 Green Concrete Adhesion

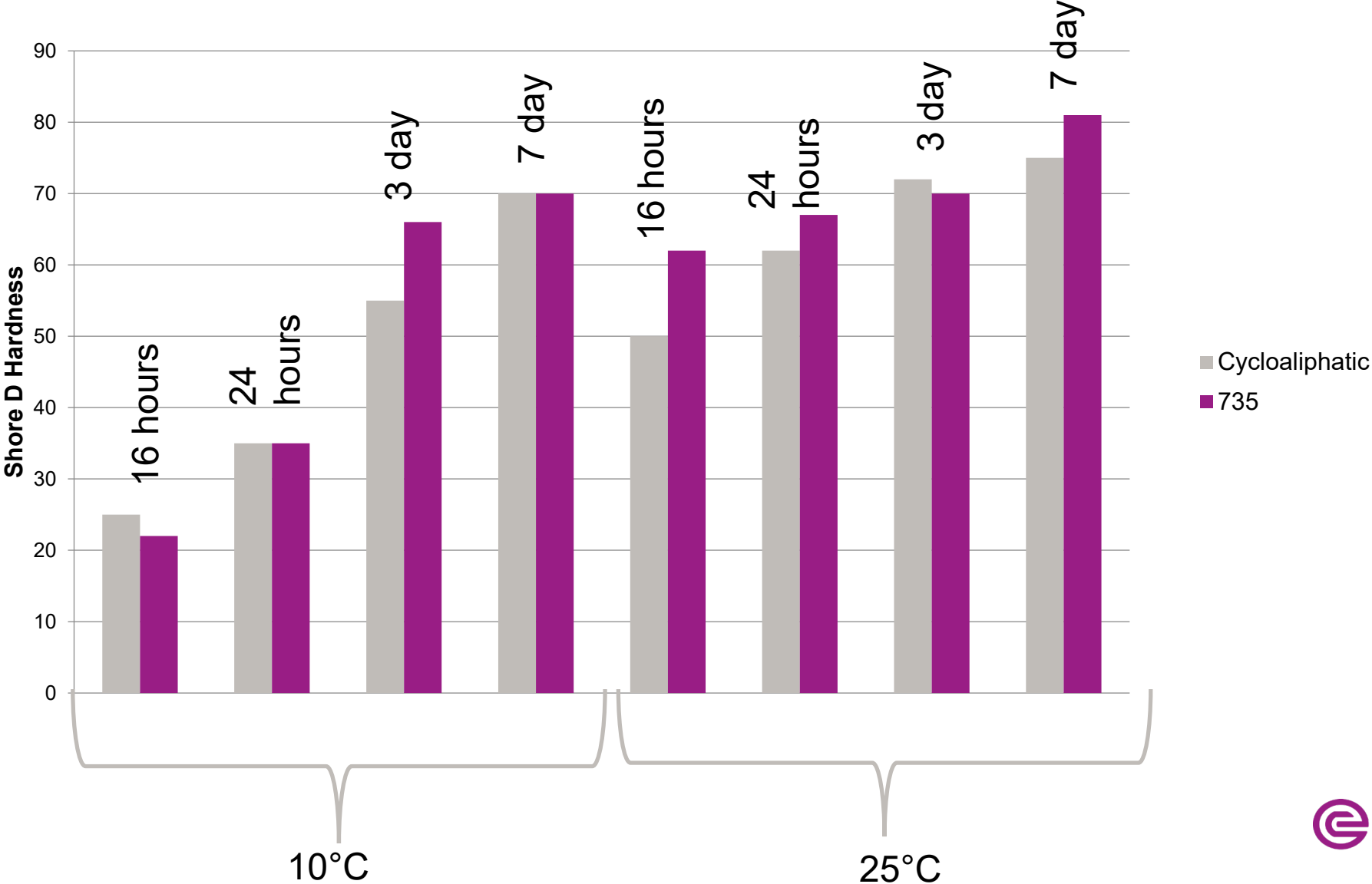
	diluted LER	Ancarez AR555
Part A		
Anquamine 728	33.6	20.6
water	40.0	18.7
TEGO® Foamex 845 defoamer	0.2	0.2
Part B		
90/10 Epon 828/Epodil 748	26.2	
Ancarez AR555		60.5
total	100	100
Concrete adhesion (psi)		
23C/50% RH		
dry concrete	570	530
damp concrete	540	620
10C/60% RH		
dry concrete	450	440
damp concrete	570	530

Anquamine 728 Viscosity-Dilution Profile

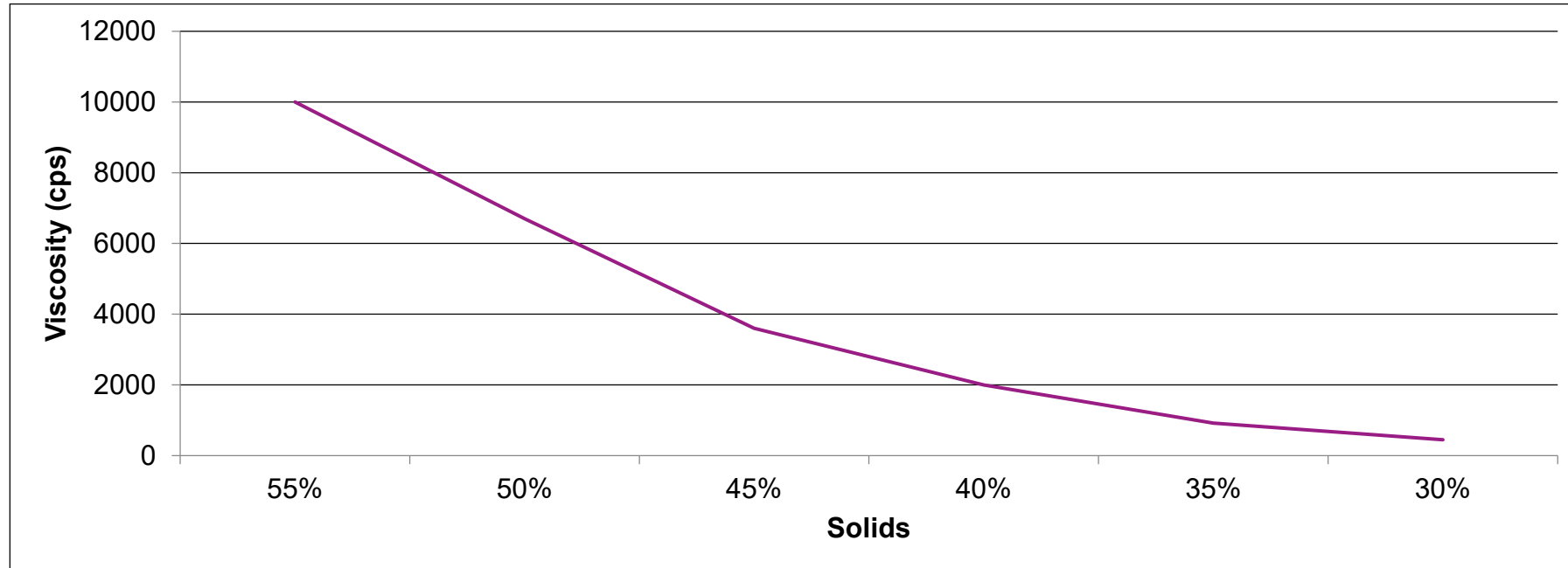


100%	12047
45%	4151
35%	1576
25%	351
15%	41

Anquamine 735 SL Hardness Development vs. Cyclo



Anquamine 735 Viscosity Profile and Emulsification Properties



- Good reduction of viscosity on dilution
- When diluted to as low as 25% solids, Anquamine 735 curing agent will emulsify liquid epoxy resin
- Allows for formulations with higher filler to binder ratios


Anquamine 735 Self Leveling Floor (SLF) Formulation 2K (NA)

A-Components			
1. Curing agents	Anquamine 735	Air Pproducts	10
2. Defoamer	BYK 045	BYK	0.8
3. Pigment TIO2	Kronos 2160(Tio2)	Kronos	3.8
4. Diluent	Water	Local	11.2
5. Filler	Cimbar 325	Cimbar perf	13
6. Filler	Sil-co-sil 106	US Silica	27
7. Filler	Ottawa	US Silica	34
8. Thixotropic Agent	Rhodopol 23 (3% in water)	Rhodia	0.2
			100
A-Component Manufacture Procedure: <ul style="list-style-type: none"> • Charge components 1-3 and stir homogeneous at low shear • Slowly add component 5 and adjust viscosity of the mill base by adding partial amount of water (component 4). • Increase speed to 10-20 m/s and grind mill base for 10-15 minutes • Add components 6-8 at low shear rate • Note: component 8 is a 3 wt% dispersion of thixotropic agent in water 			
B-Component			
9. Epoxy resin	90/10 Epon 828/Epodil 748		9.50
total			109.50

Add Component B to Component A and mix for ca. 2 minutes using moderate shear mechanical mixing equipment to produce a homogeneous liquid. Primed substrate is recommended for optimum flow and levelling. Following the mixing instructions, the self-levelling floor system is ready to apply onto (primed) concrete substrates using a squeegee or similar tool to spread the material. A subsequent spike rolling to promote de-aeration is optional.

Anquamine 735 Self Leveling Floor (SLF) Formulation 2K (EU)

A-Components			
1. Curing agent	Anquamine® 735	Evonik	10.00
2. De-airentainer	Surfynol® DF-700	Evonik	0.50
3. Defoamer	Surfynol® DF-220	Evonik	0.50
4. Pigment TiO ₂	Kronos® 2160	Kronos	3.80
5. Filler	Barium sulfate Barytmehl F	Sachtleben Chemie	12.50
6. Filler	Quartz powder M6 (D ₅₀ 33µm)	Sibelco	27.00
7. Filler	Quartz sand 0.1-0.5 mm	Local	34.00
8. Thixotropic Agent	Deuteron® VT 819 (2% in water)	Deuteron	0.20
9. Diluent	Water	Local	11.50
			100.00
A-Component Manufacture Procedure:			
<ul style="list-style-type: none"> • Charge components 1-3 and stir homogeneous at low shear • Slowly add components 4-5 and adjust viscosity of the mill base by adding partial amount of water (component 9). • Increase speed to 10-20 m/s and grind mill base for 10-15 minutes • Add components 6-8 at low shear rate together with remaining water of component 9. Note: component 8 is a 2 wt% dispersion of thixotropic agent in water 			
B-Component			
10. Epoxy resin	Ancarez 4305	Evonik	9.50
total			109.50

Add Component B to Component A and mix for ca. 2 minutes using moderate shear mechanical mixing equipment to produce a homogeneous liquid.  Primed substrate is recommended for optimum flow and levelling. Following the mixing instructions, the self-levelling floor system is ready to apply onto (primed) concrete substrates using a squeegee or similar tool to spread the material. A subsequent spike rolling to promote de-aeration is optional.

Anquamine 735 Technical Data of 2K Formulation (EU)

Density (g/ml)		Flow (cm @ 20 g mix; 0 min.)	7.4
- Part A	2.04	Wet edge (minutes)	
- Part B	1.12	- 2.5 mm/m ²	15 (Moderate)
- Total Mix	1.9	- 1.5 mm/m ²	< 15 (Fair)
Mixing Ratio A:B		Appearance (Visual)	Matt,
- By weight	10.5 : 1		Moderate finish
- By volume	5.8 : 1		
Solid Content (wt%)		Shore D (23 °C) ► mm/m ²	2.5
- Part A	84	- Day 1	50
- Part B	100	- Day 7	70
- Total Mix	85		
Binder content (%)	14.5		
Filler : Binder Ratio	3.4		

Anquamine 735 Self Leveling Floor (SLF) Formulation 3K (EU)

A-Component				
1. Curing agent	Anquamine 735		Evonik	25
2. Defoamer	Airex® 904W		Evonik	0.6
3. Titanium Dioxide	Kronos® 2160		Kronos Int.	7.5
4. Barium Sulphate	Barytmehl F (D50 3µ)		Sachtleben Chemie	14.6
5. Barium Sulphate	Blanc Fix Micro® (D50 0.7µ)		Sachtleben Chemie	12.3
6. Silica Flour	Silverbond® M500 (D50 3µm)		Sibelco	5.5
7. Water			Local	34.5
				100
A-Component Manufacture Procedure:				
Charge Components 1-2 and stir homogeneous at low shear				
slowly add Components 3-5 and adjust viscosity of the mill base by adding partial amount of water (Component 7).				
Increase speed to 5-10 m/s and grind mill base for 10-15 minutes				
Add Component 6 and remaining water (Component 7) at low shear rate				
B-Component				
8. Epoxy resin	Ancarez® RZ-4305 *		Air Products	25
C-Component				
9. Quartz Sand	0.1-0.3 mm		Local	63.5
10. Quartz Flour	Millisil® M6 (D50 33µm)		Sibelco	31.5
Total				220

Technical Data of 3K Formulation (EU)

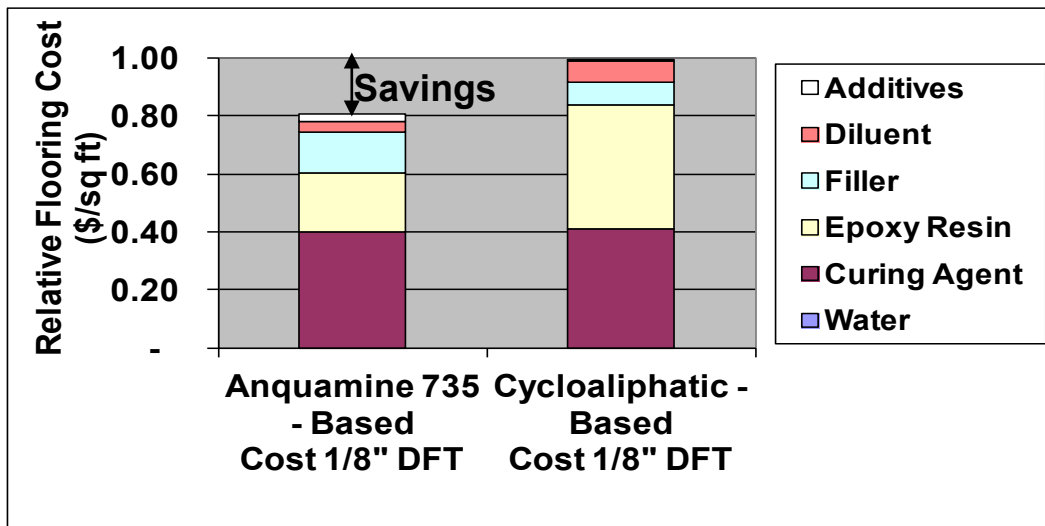
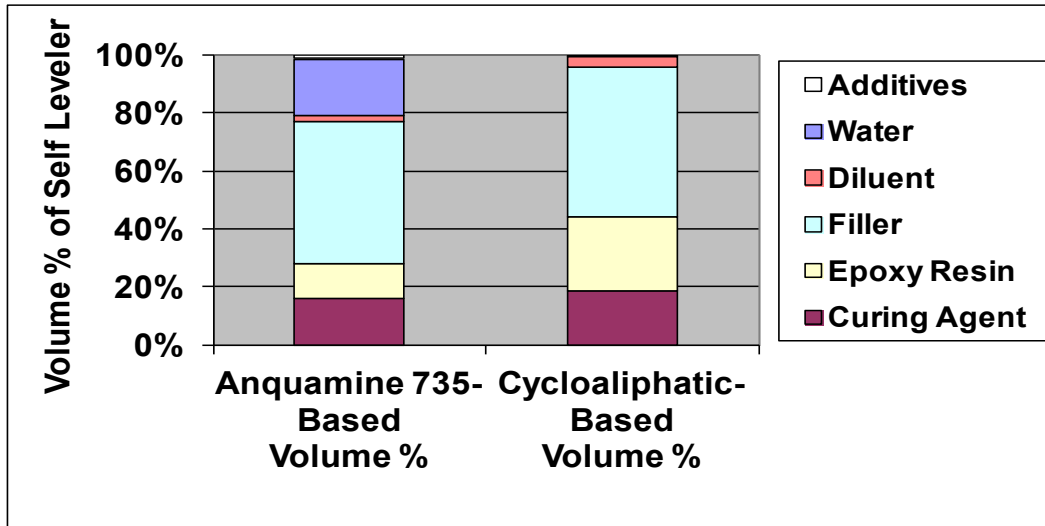
Density (g/ml)	1.50	Flow (cm @ 20 g mix; 0 min.)	8.5
- Part A	1.12	Wet edge (minutes)	30 (Excellent)
- Part B	1.74	- 2.5 mm/m ²	20-30 (Very Good)
- Total Mix A/B/C		- 1.5 mm/m ²	
Mixing Ratio A:B:C	4:01:04	Viscosity (mPa.s) (23 °C)	300 – 400
- By weight	01:01.6	- Part A	1,100 – 1,300
- By volume		- Part B	1,200 – 1,500
		- Emulsion A+B	5,000 – 6,000
		- Total Mix A/B/C	
Solid Content (wt%)		Shore D (23 °C)	1.5 2.5
- Part A	54	► mm/m ²	
- Part B	100	- 16 Hours	50 40
- Total Mix A/B/C	79	- Day 1	55 50
		- Day 7	70 65
Binder content (%)	18	Appearance (Visual)	Matt, Smooth surface
Filler : Binder Ratio	3.4		

Anquamine 735 Self Leveling Floor (SLF) Formulation 3K (all fillers in C component)

A-Component			
1. Amine curing agent	Anquamine 735	Air Products	25
2. Defoamer additive	Tego Airex 904W	Evonik	0.6
3. Demineralized water		Local	34.4
A-Component Manufacturing Procedure			
· Charge Anquamine 735 (1) into a suitable container			
· Add Tego Airex 904W (2)			
· Add ~30% of the water (3) and mix until homogeneous (water completely taken up by the curing agent)			
· Again add ~30% of the water and mix until homogeneous			
· Add remaining water and mix until homogeneous			
B-Component			
4. Epoxy resin	C12-C14 glycidyl ether diluted BisA/F resin	Air Products	25
C-Component			
5. Titanium dioxide	Kronos 2160	Kronos	7.5
6. Barium sulphate 3 µm	Barytmehl F	Sachtleben	20
7. Barium sulphate 0.7 µm	Blanc Fixe Micro	Sachtleben	12.5
8. Quartz Flour D50 33 µm	Millisil M6	Sibelco	35
9. Sand 0.1-0.3 mm	Sand M34	Sibelco	65
C-Component Manufacturing Procedure			
· Weigh titanium dioxide, barium sulphate 0.7 µm and 3 µm, quartz flour and sand (5-9) into a suitable container			
· Mechanically mix above components at about 1000 rpm (start slowly to avoid dust generation) using a vertical high shear dissolver to prepare a homogeneous mixture			
TOTAL			225
Application Procedure			
· Use a vertical high shear dissolver			
· Add C-component gradually to A-component while mixing at low shear (500 rpm)			
· Increase speed to 1000 rpm and mix for 5 minutes			
· Add B-component and continue mixing at reduced speed (500 rpm) for 2 minutes			
· Apply the formulation onto the desired substrate			
TOTAL			
Mix Viscosity (mPa.s), 23°C	~2,800	Shore D hardness, day 7	75D

3K White Self Leveling Floor

Cost Effective flooring with Anquamine 735 curing agent



- Anquamine 735 based self leveling formulations allow:
 - 50% less epoxy resin
 - Water diluent
 - Higher filler to binder ratio
 - (5.2 vs 2.6)
 - Up to 20% savings
- vs. Solvent free coating
 (wet film thickness = dry film thickness with Anquamine 735 curative based formulations)

Anquamine 735 curing agent is the best choice for self leveling floors

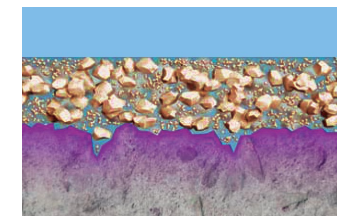
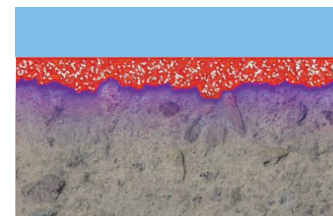
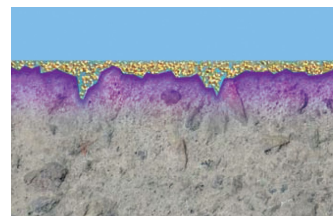
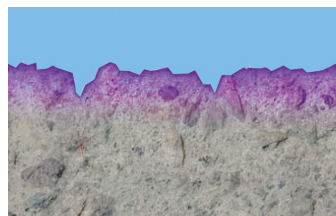
- Low cost-in-use
- Excellent aesthetics
 - Low initial color
 - Good yellowing resistance
 - Good carbamation resistance
 - Excellent pigment paste compatibility
 - Matte finish
- High performance
 - Excellent adhesion concrete
 - Rapid hardness development even at low temperature
 - Good handling properties
 - Good concrete protection properties
- Environmentally friendly
 - Zero VOC
 - Low odor
 - Clean with water
 - Low emissions

Features and Benefits of Waterborne Self Levelling Floor and recommendations

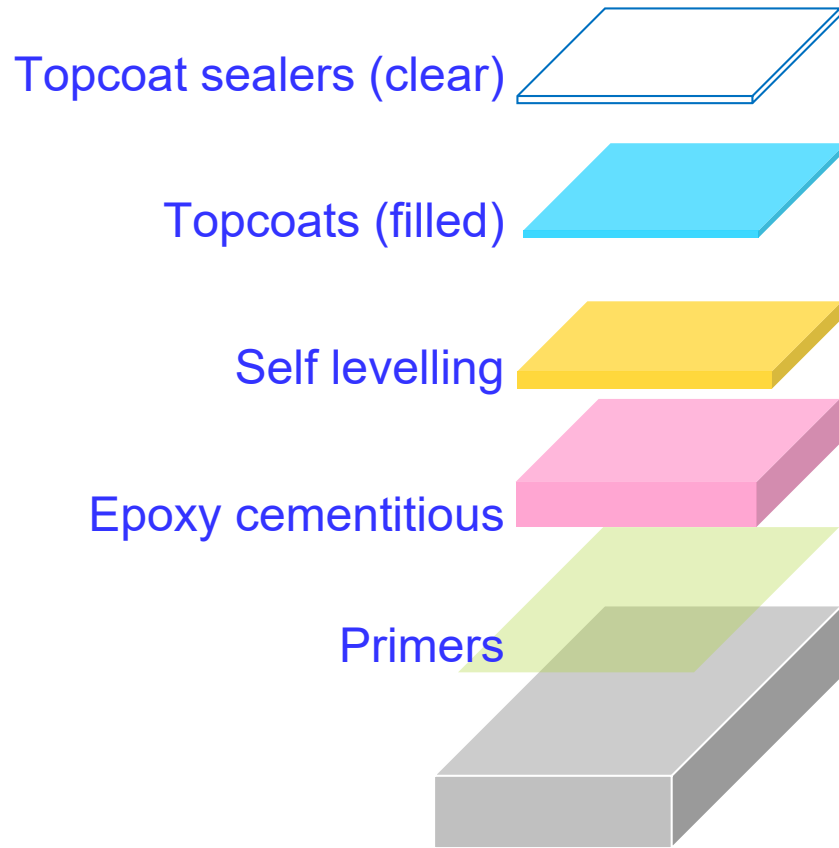
Features	Benefits and Competitive Advantages
High filler content	<ul style="list-style-type: none"> • Lower cost; reduce binder demand • Matte surface finish (evens surface appearance/hides substrate imperfections)
Permeable coatings to water vapor, impermeable for liquids	<ul style="list-style-type: none"> • Fresh concrete application (no need to wait until less than 4% residual water) • Poorly fabricated substrates • Direct to ground concrete (hydrostatic pressure) • No osmotic blistering
No benzyl alcohol plasticizer	<ul style="list-style-type: none"> • No contributor to osmotic blistering (BA found in blisters) • No outgassing=electronics/clean room/worker safety (compliant with new regulations) • No flame spread/No smoke
High HDT	<ul style="list-style-type: none"> • Steam cleanability • No floor softening in heated areas
Recommended topcoat	<ul style="list-style-type: none"> • 2K polyurethane, 1K PUD or PUD hybrids such as Hybridur systems or Anquawhite 100 WB epoxy

Overview of key industrial flooring applications

Features/Benefits	Concrete Primer	Concrete Paint	Self Leveler Floor	Screed Floor
Floor Build (mm)	0.3-0.6	0.3-0.6	2-4	5-10
Adhesion on Concrete	■	□		
Mechanical Resistance			■	■ ■
Wear Resistance	□	■	■ ■	■ ■
Chemical Resistance	□	■	■	
Aesthetics (UV, finish)		■	■	



Evonik Waterborne Product Overview



Product

Key features

Anquawhite™ 100,
Anquamine® 728

Excellent transparency, stain resistance

Anquamine®
701, 721, 728

Good UV, fast, high quality finish

Anquamine®
701, 735

High build, cost effective, no osmotic blistering

Anquamine® 287

Thermal shock, cost effective

Anquamine®
287, 360, 401, 721, 728

Excellent adhesion, no carbamation