

WHO IS DOW CONSTRUCTION CHEMICALS?



Water Soluble Polymer



Wolff Walsrode 



**ROHM
AND
HAAS** 



Construction Chemicals

A global footprint,
with a local focus

Enabling increased durability and
aesthetics of buildings and infrastructure

Providing knowhow and ingredients to enable
“ready to use” products

**A heritage of 40+ years of development, formulation and
application expertise and proven chemistry**

DOW CONSTRUCTION CHEMICALS

Providing know how and differentiated ingredients for end products which enable increased **durability** and **aesthetics** of buildings and infrastructure



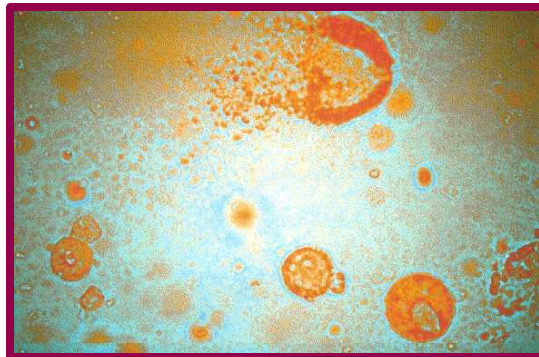


DRY MIX

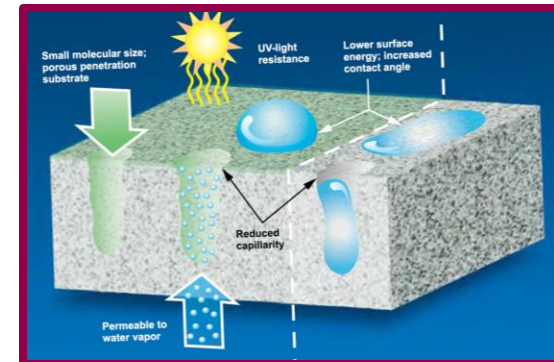
- CELULOSE
- DLPs
- Silicone Hydrophobic Powders



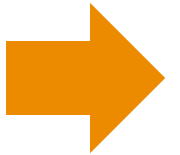
Celulose Ethers



Redispersable Powders



Hydrophobic agents





#1 in cellulosic additives for Construction!

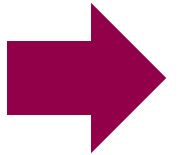
**WALOCEL
METHOCEL
CELLOSIZ**

WHAT IS A CELLULOSE ETHER?

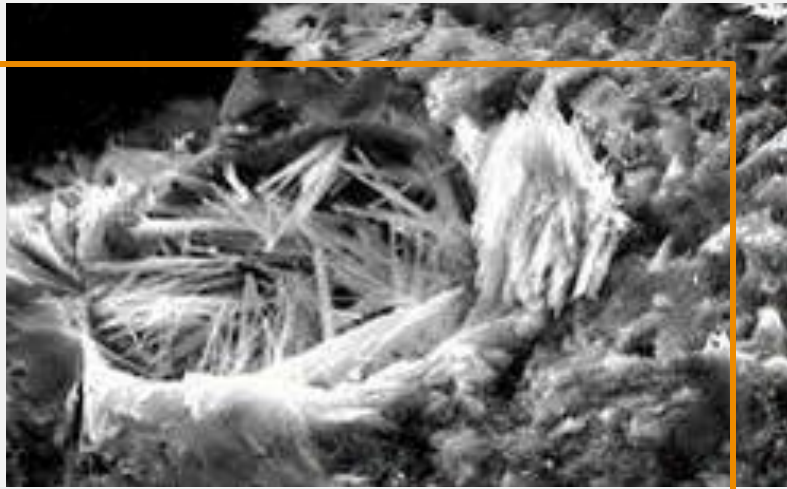
- Water soluble polymers that may be applied in various industries such as **construction**, coatings, food & pharma, etc.

PROPERTIES:

- Controls drying speed
- Improves compressive strength resistance
- Thickening
- Water Retention
- Adhesion over substrate
- Workability/Consistency
- Sliding Resistance



HOW DO DLPs AFFECT CEMENT?



Possible voids left after ettringite formation.

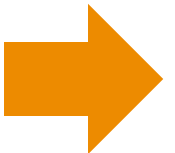
The addition of polymers improve each property according to the product selected.

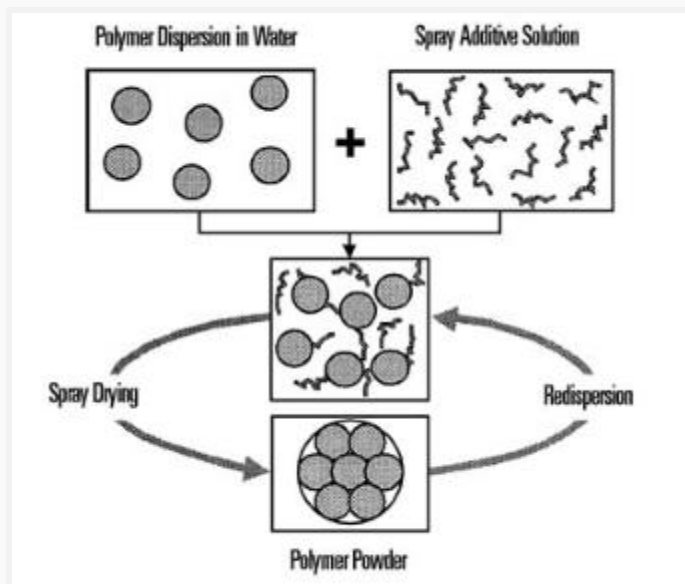
Improved cohesion

Improved tension & compression resistance

Decreased water/cement ratio

Controlled water release





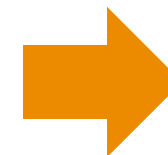
DLP (Dow Latex Powder)

WHAT IS A DLP?

- Powder organic polymer produced through a drying process (spray-dryer) of a water based emulsion

PROPERTIES:

- Water demand reduction
- Better adherence to various substrates
- Flexibility and durability
- Better compression and traction resistance
- Better impact and abrasion resistance



HIDROPHOBICITY PROBLEMS IN CONSTRUCTION:

Many substrates aren't water resistant

Water may dissolve binders

Water transports salts & acids

Water nourishes microorganisms

Water generates stains

Mechanical & aesthetic deterioration

- Efflorescence, spalling, cracking, mould growth

We provide advancing **building materials**

Dry Mix



Roofing

Roof tile coatings

Elastomeric Roof Coatings
& liquid applied roofing
membranes



Tile adhesives

for exterior & interior applications



Cementitious
waterproofing
membranes



Flooring

Self-leveling underlays



Interior walls

cement/gypsum based
render/mortar, sealants

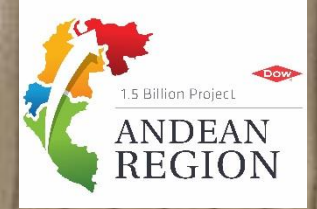


Concrete admixtures,
waterproofing concrete &
concrete protection



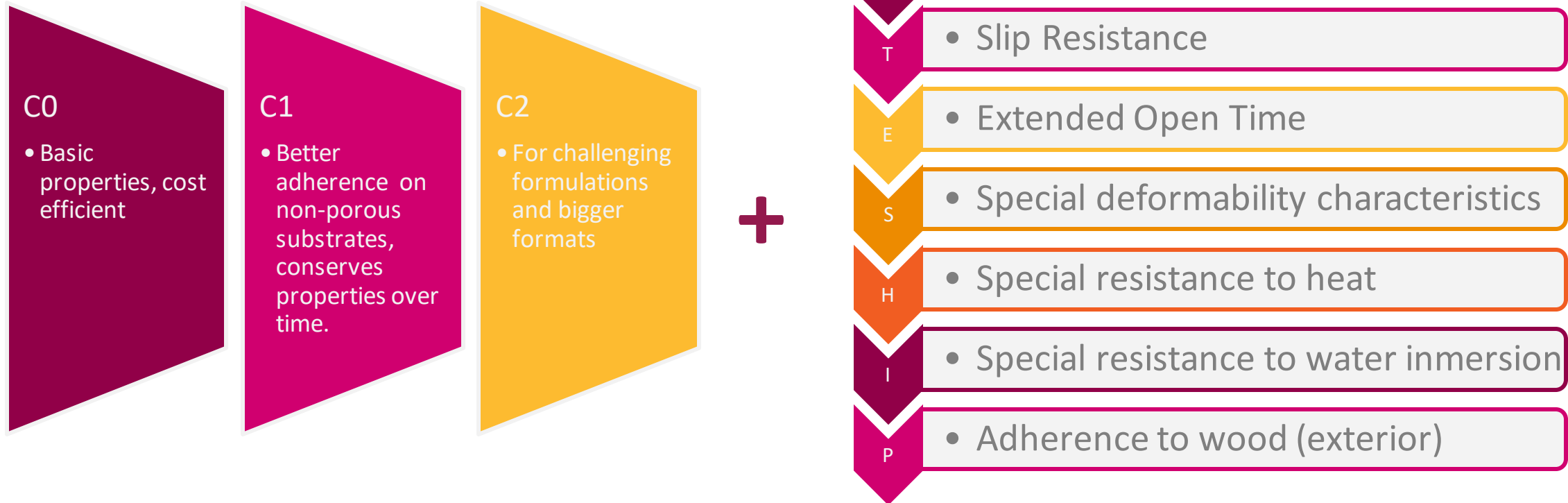


TECHNICAL REQUIREMENTS:



- WATER RETENTION
- QUICK OPEN TIME
- EXTENDED OPEN TIME
- RESISTANCE TO TRACTION
- SLIP RESISTANCE

TILE ADHESIVE CLASSIFICATION





C0 TILE ADHESIVES



CELLULOSES			
PRODUCT	VISCOSITY	MODIFICATION	PROPERTIES
WALOCEL™ MKX 60.000 PF 15	60.000	Medium	Modified cellulose with improved adjustment time and adhesion strength. Differentiated from other products because of its performance.
WALOCEL™ MW 40.000 PFV	40.000	Retarded dissolution	Cellulose with wide formulation versatility and robust performance, suggested as a good cost-efficient solution for thickening purposes.
WALOCEL™ MW 60.000 PFV	60.000	Retarded dissolution	Multipurpose cellulose, suggested as an excellent cost-efficient solution for thickening purposes.
WALOCEL™ M-20678	80.000	-	Recommended for high viscosity thickening purposes. Cost efficient cellulose with wide formulation versatility.



C1 TILE ADHESIVES



CELLULOSES			
PRODUCT	VISCOSITY	MODIFICATION	PROPERTIES
WALOCEL™ MKX 45.000 PP 10	45.000	High	Modified cellulose with a good contribution to adhesion strength. Differentiated from other products for its excellent performance and optimum consistency.
WALOCEL™ MKX 25.000 PF 25L	25.000	High	Modified cellulose with a good contribution to adhesion strength, impact resistance and low stickiness. Presents high yield performance.
WALOCEL™ MKX 60.000 PF 15	60.000	Medium	Modified cellulose with improved adjustment time and adhesion strength. Differentiated from other products because of its performance.
WALOCEL™ MKX 20.000 PP 10	20.000	Low	For easy to handle mortars thanks to its high workability. Offers a good contribution to adhesion strength.
WALOCEL™ MW 40.000 PFV	40.000	Retarded dissolution	Cellulose with wide formulation versatility and robust performance, suggested as a good cost-efficient solution for thickening purposes.
WALOCEL™ MW 60.000 PFV	60.000	Retarded dissolution	Multipurpose cellulose, suggested as an excellent cost-efficient solution for thickening purposes.

DLPs			
PRODUCT	MFFT (°C)	POLYMER	PROPERTIES
DLP 212	0	VAE- Veova	Flexible redispersable polymer that favors adhesion to a variety of substrates and provides excellent impact resistance.
DLP 2001	2	VAE-Veova	Redispersable polymer that favors formulation versatility and provides excellent impact resistance.
DLP 2000	3	VAE	Redispersable polymer with excellent performance, versatility and transversal flexural strength.
DLP 2025	3	VAE	Cost efficient redispersable polymer designed for basic CBTAs.



C2 TILE ADHESIVES



CELLULOSES			
PRODUCT	VISCOSITY	MODIFICATION	PROPERTIES
WALOCEL™ MKS 10.000 PF 60	10.000	High	Modified cellulose differentiated by its easy workability and optimum consistency. Presents excellent adhesion, low stickiness and high yield.
WALOCEL™ MKX 45.000 PP 10	45.000	High	Modified cellulose with excellent adhesion strength. Differentiated from other products for its excellent performance and optimum consistency.

DLPs			
PRODUCT	MFFT (°C)	POLYMER	IMPROVES
DLP 2140	0	VAE-Veova	Hydrophobic redispersable polymer, resistant to efflorescence.
DLP 212	0	VAE- Veova	Flexible redispersable polymer that favors adhesion to a variety of substrates and provides excellent impact resistance.
DLP 2001	2	VAE-Veova	Redispersable polymer that favors formulation versatility and provides excellent impact resistance.
DLP 2000	3	VAE	Redispersable polymer with excellent performance, versatility and transversal flexural strength.

PRODUCT	DILUTION SYSTEM	DOSAGE %	PRESENTATION	SUGGESTED USE
DOWSIL™ GP SHP 50 Silicone Hydrophobic Powder	Dry ingredient	0,2-0,8	Silane/siloxane-based powder	Free flowing powder added to dry ingredients of cement based dry mixes in order to reduce water absorption. The active material is released upon the addition of water and provides hydrophobicity upon cure.
DOWSIL™ GP SHP 60+ Silicone Hydrophobic Powder	Dry ingredient	0,1-0,8	Resin/siloxane-based powder	Free flowing powder added to dry ingredients of demanding cement based dry mixes in order to reduce water absorption. The active material is released upon the addition of water and provides hydrophobicity upon cure

CELLULOSES			
PRODUCT	VISCOSITY (mPas)	MODIFICATION	PRODUCT DESCRIPTION
WALOCEL™ MT 400 PFV	400	Retarded dissolution	Cellulose with wide formulation versatility and high workability, with improved impact on sedimentation. Suggested for very thin tile grouts.
WALOCEL™ MKW 4000 PF 01	4.000	No	Workable, easy to use cellulose with good adhesion strength and improved adjustment time.
WALOCEL™ MKX 6000 PF 01	6.000	No	High yield cellulose designed to enhance the quality of tile grouts, with excellent adhesion strength, optimum consistency and low stickiness.

Preference for viscosity depends on the market's perception. Our recommendation for thinner tile grouts are celluloses with excellent fluidity, preferably with lower viscosities!

DLPs			
PRODUCT	MFFT (°C)	POLYMER BASE	PRODUCT DESCRIPTION
DRYCRYL DP-2903	10	Acrylic	Redispersable polymer designed for cost efficient "one-pack" systems, providing dramatic improvements in properties such as adhesion and exterior durability.
DLP 2140	0	VAE-Veova	Hydrophobic redispersable polymer, resistant to efflorescence.
DLP 2141	0	VAE-Veova	Redispersable polymer that provides excellent impact resistance to help reduce the formation of cracks.

PRODUCT	DILUTION SYSTEM	DOSAGE %	PRESENTATION	SUGGESTED USE
DOWSIL™ GP SHP 50 Silicone Hydrophobic Powder	Dry ingredient	0,2-0,8	Silane/siloxane-based powder	Free flowing powder added to dry ingredients of cement based dry mixes in order to reduce water absorption. The active material is released upon the addition of water and provides hydrophobicity upon cure.
DOWSIL™ GP SHP 60+ Silicone Hydrophobic Powder	Dry ingredient	0,1-0,8	Resin/siloxane-based powder	Free flowing powder added to dry ingredients of demanding cement based dry mixes in order to reduce water absorption. The active material is released upon the addition of water and provides hydrophobicity upon cure

TAPE JOINT COMPOUNDS CHARACTERISTICS

TYPES

- Taping TJC
- Topping TJC
- All Purpose TJC

FUNCTION

- Eliminate blemishes
- Seal Joints
- Paint base
- Finishing

TECHNICAL PROPERTIES





CELULOSES FOR TAPE JOINT COMPOUNDS



CELLULOSES			
PRODUCT	VISCOSITY (mPas)	MODIFICATION	PRODUCT DESCRIPTION
WALOCEL™ Xtra 40-01	40.000	No	Cellulose with morphology-controlled technology designed to eliminate lumps formed in hand applied TJs.
WALOCEL™ MK 25.000 PFV	25.000	No	Cellulose designed as an efficient thickener for ready to use TJC. Provides well balanced properties such as crack resistance and bond strength.
WALOCEL™ MW 40.000 PFV	40.000	Retarded dissolution	Cellulose with wide formulation versatility and robust performance, suggested as a good cost-efficient solution for thickening purposes.

GYPSUM SOLUTIONS



MACHINE APPLIED GYPSUM BASED PLASTER

HAND APPLIED GYPSUM BASED PLASTER





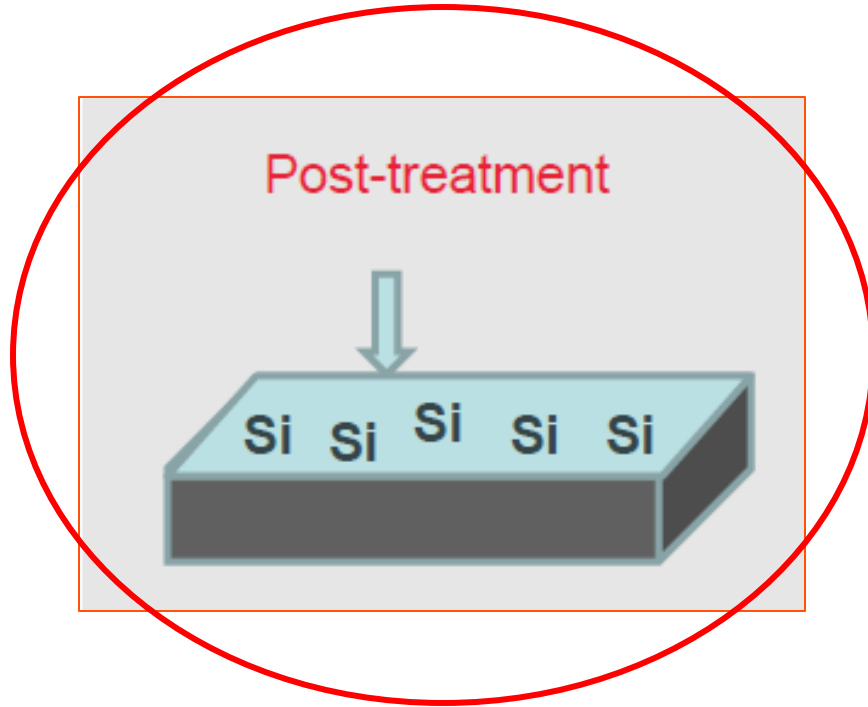
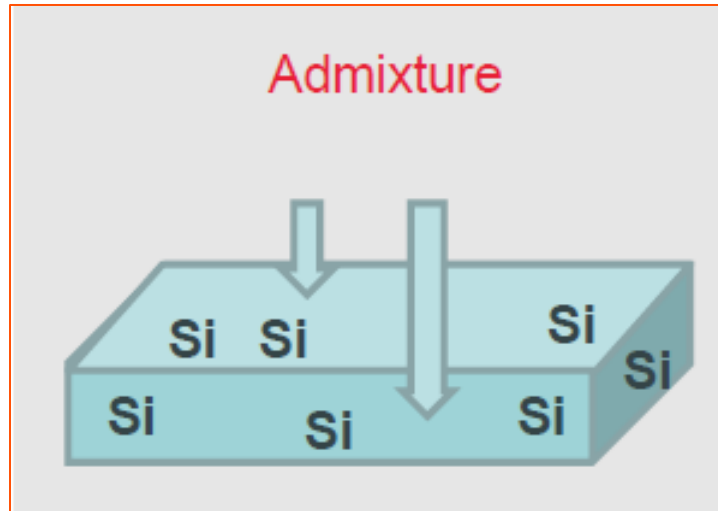
MACHINE APPLIED GYPSUM BASED PLASTER



CELLULOSES			
PRODUCT	VISCOSITY (mPas)	MODIFICATION	PRODUCT DESCRIPTION
WALOCEL™ Xtra 40-30	40.000	Medium	Cellulose with morphology-controlled technology designed to eliminate lumps formed in gypsum. Its modification allows better workability and water retention.
WALOCEL™ Xtra 40-01	40.000	No	Cellulose with morphology-controlled technology designed to eliminate lumps formed in gypsum.

HAND APPLIED GYPSUM BASED PLASTER

CELLULOSES			
PRODUCT	VISCOSITY (mPas)	MODIFICATION	PRODUCT DESCRIPTION
WALOCEL™ Xtra S 50-95	55.000	Very High	Cellulose with morphology-controlled technology designed to eliminate lumps formed in gypsum. Allows easier application for hand applied in-situ formulation.
WALOCEL™ Xtra S 50-96	55.000	Very High	Cellulose with morphology-controlled technology designed to eliminate lumps formed in gypsum. Allows easier application for hand applied in-situ formulation.



POST TREATMENT FOR GYPSUM

PRODUCT	DILUTION SYSTEM	ACTIVE CONTENT %	SUGGESTED ACTIVE CONTENT %	PRESENTATION	SUGGESTED USE
XIAMETER™ OFS-0777 Siliconate	Water	40%	2-5	Potassium methyl siliconate	Water repellent suggested for porous substrates. May be applied by brushing/rolling. This solution is water dilutable and therefore low VOC.
XIAMETER™ OFS-0772 Siliconate	Water	32%	2-5	Sodium methyl siliconate	Water repellent suggested for porous substrates. May be applied by brushing/rolling. This solution is water dilutable and therefore low VOC.

SELF-LEVELLING MORTARS CHARACTERISTICS

USES

- Underlayment
- Finished Flooring
- Repair Material

ADVANTAGES

- Even Distribution
- Higher performance
- Easy Application
- Ready to use

TECHNICAL PROPERTIES



CELLULOSES			
PRODUCT	VISCOSITY	MODIFICATION	PRODUCT DESCRIPTION
WALOCEL™ MT 400 PFV	400	Retarded dissolution	Cellulose with wide formulation versatility and high workability, with improved impact on sedimentation.
WALOCEL™ MKX 6000 PF 01	6.000	No	High yield cellulose designed to enhance the quality of tile grouts, with excellent adhesion strength, optimum consistency and low stickiness.

DLPs			
PRODUCT	MFFT (°C)	POLYMER BASE	PRODUCT DESCRIPTION
DLP 2050	3	VAE	Redispersable polymer designed specifically for self levelling mortars, providing high compressive strength and enhanced surface quality. Low VOC.
DLP 2000	3	VAE	Redispersable polymer with excellent performance, versatility and transversal flexural strength.
DLP 2025	3	VAE	Cost efficient redispersable polymer designed for basic CBTAs.

PRODUCT	DILUTION SYSTEM	DOSAGE %	PRESENTATION	SUGGESTED USE
DOWSIL™ GP SHP 50 Silicone Hydrophobic Powder	Dry ingredient	0,2-0,8	Silane/siloxane-based powder	Free flowing powder added to dry ingredients of cement based dry mixes in order to reduce water absorption. The active material is released upon the addition of water and provides hydrophobicity upon cure.
DOWSIL™ GP SHP 60+ Silicone Hydrophobic Powder	Dry ingredient	0,1-0,8	Resin/siloxane-based powder	Free flowing powder added to dry ingredients of demanding cement based dry mixes in order to reduce water absorption. The active material is released upon the addition of water and provides hydrophobicity upon cure

PRODUCT	DILUTION SYSTEM	ACTIVE CONTENT %	SUGGESTED ACTIVE CONTENT %	PRESENTATION	SUGGESTED USE
DOWSIL™ IE 6683 Emulsion	Water	40	5-10	Silane/siloxane resin blend	Water repellent suggested for porous substrates. May be applied by brushing/rolling or dipping, and does not change the appearance of the substrate. This emulsion is water dilutable and therefore low VOC.
DOWSIL™ Z-6689 Water Repellent	Solvent Dilutable (Aliphatic or alcohol)	> 98	5-10	Silane/siloxane blend	Water repellent suggested for porous substrates. May be applied by brushing/rolling or dipping, and does not change the appearance of the substrate.



**RHOPLEX
PRIMAL**

OUR ACRYLIC SOLUTIONS

- Dow offers water based acrylic solutions that function as concrete sealers, primers, curing membranes and ERCs.

PROPERTIES:

- Durability
- UV Resistance
- Water Resistance
- Gloss Promoters
- DPUR

ACRYLIC SEALERS

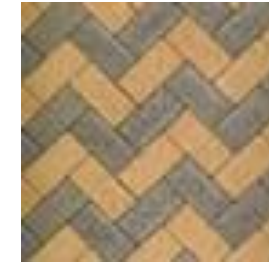
WITHOUT
SEALER



WITH
SEALER

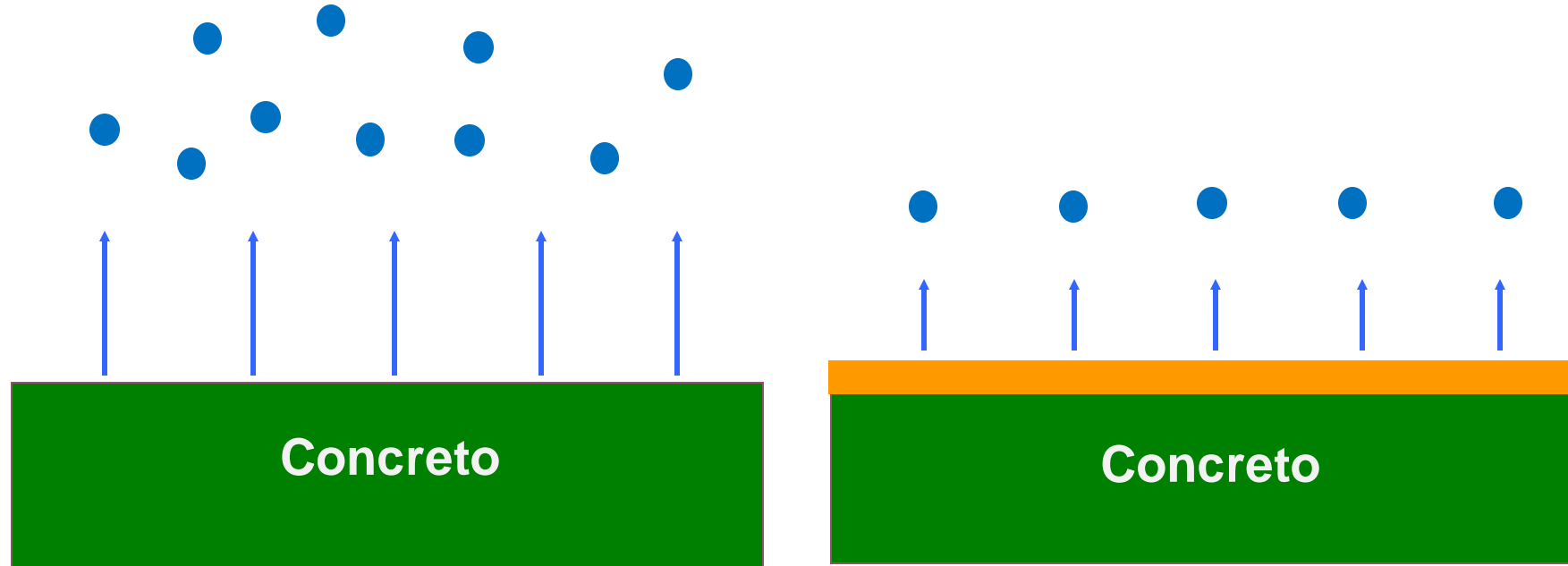


BEFORE



AFTER

ACRYLIC CURING MEMBRANES



MEMBRANA
DE CURADO



FLOOR PROTECTION ACRYLICS



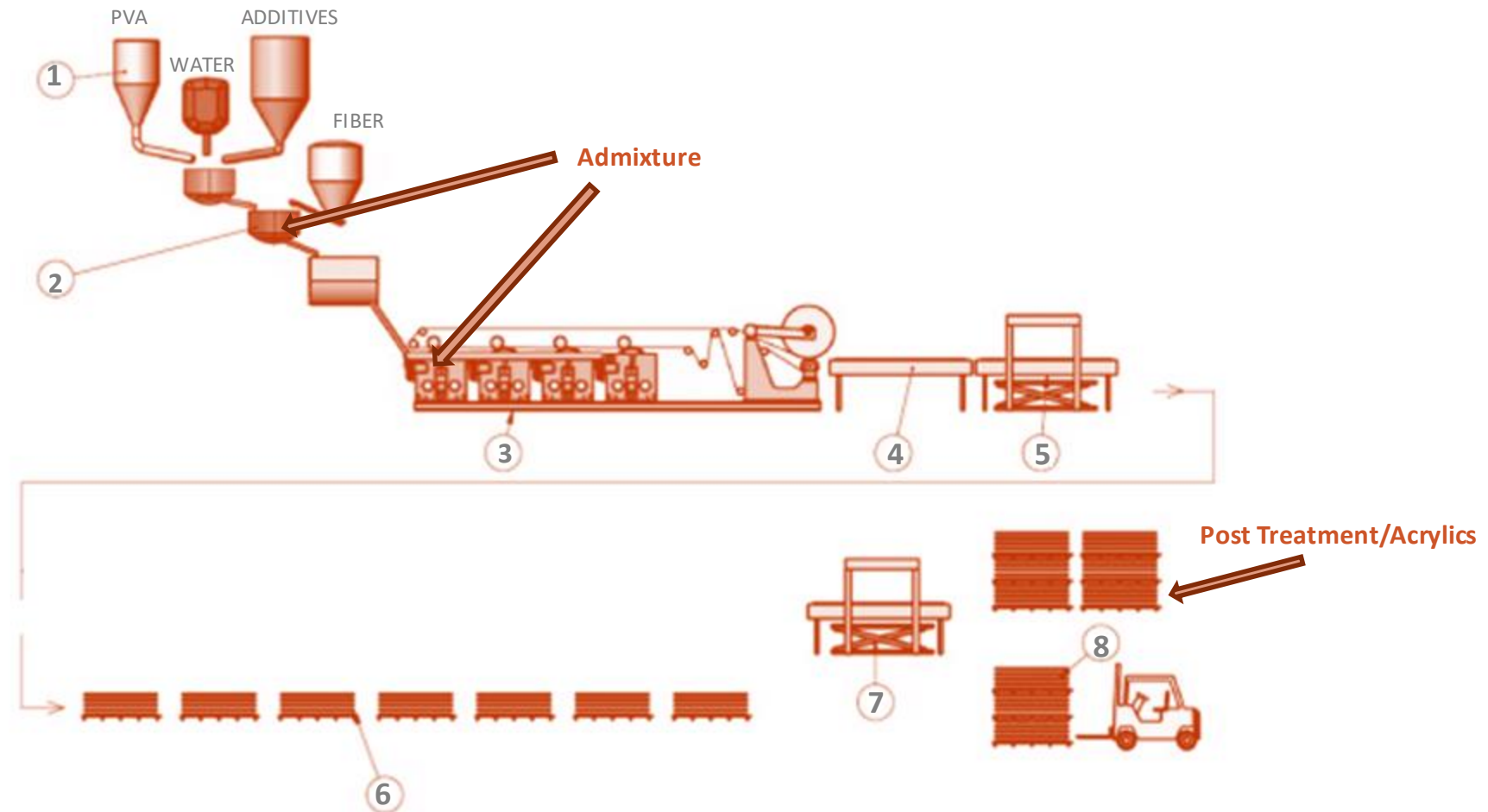
PRODUCT	MFFT (°C)	SOLIDS %	PROMOTED USE
PRIMAL™ CS-4000	27	48	Water resistant binder with excellent durability and gloss. Great adhesion on various substrates. Primer, curing membrane and sealers.
RHOPLEX™ EI-6000	12-16	46	Water based resin with excellent durability to weathering, blushing resistance and gloss. Excellent adhesion to various substrates. Clear sealer and primer.
PRIMAL™ AS-8012	0	56	Cement modifying resin suggested as a primer and binder for high flexibility, alkaline resistant, self levelling floors.

FIBER CEMENT ROOF TILES

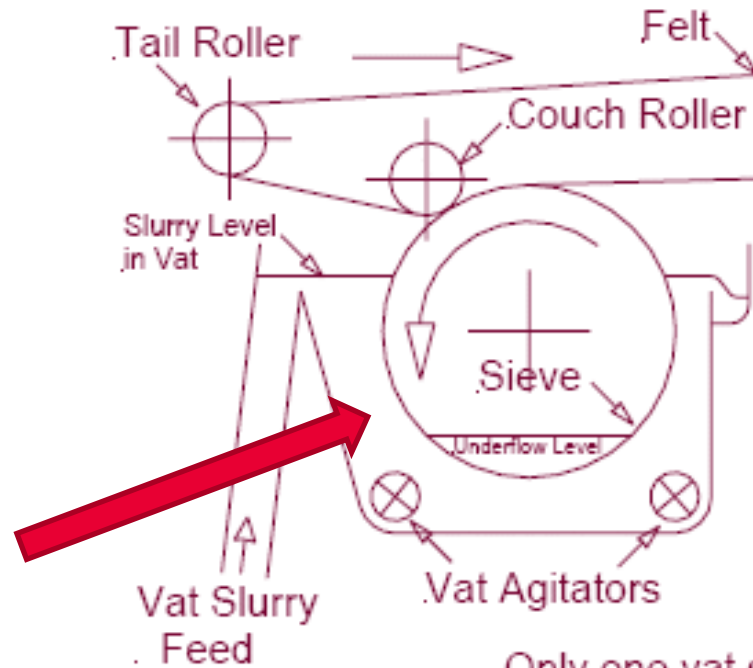
AIR CURED-HATSCHEK PRODUCTION PROCESS

CEMENT 70-80%
LIME 15-20%
CELLULOSE 3-5%
PVOH 2-3%
ADDITIVES 0,5-1%

1	Raw Materials
2	Fiber Dissolver
3	Hatschek Machine
4	Edging
5	Press Machine/Stacking
6	Air Curing
7	Palletizing
8	Storage & Sales



HATSCHEK PRODUCTION PROCESS



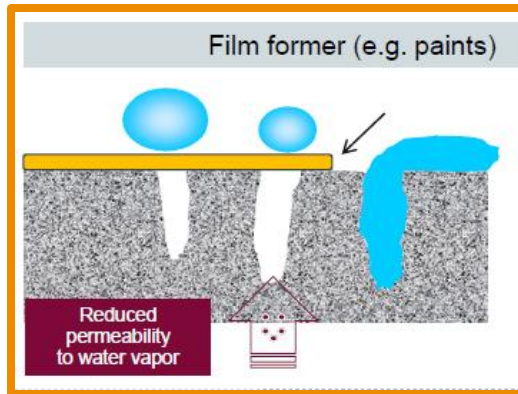
Only one vat shown, could be up to 6 in total
Large arrows show direction of felt and roller movement

**Post
Treatment:
Our products!**



PRODUCT	GENERAL DESCRIPTION	DELIVERY SYSTEM	DOSAGE %	PRESENTATION	SUGGESTED USE
DOWSIL™ Z-6289 Resin	Alkoxy functional silsesquioxane	Neat	0,1-0,5 vs dry composition	Neat silicone resin	Integral water repellent for FRCs, providing long lasting protection against water ingress, which can enable improved durability, improved dimensional stability, reduced efflorescence and longer lasting aesthetics.
DOWSIL™ IE - 6686 Water Repellent	Emulsion of silicone resin	Emulsion	0,2-0,8 vs dry composition	Microencapsulation of a silicone resin	Easy to mix in slurry, integral water repellent for FRCs, providing long lasting protection against water ingress, which can enable improved durability, improved dimensional stability, reduced efflorescence and longer lasting aesthetics.

POST TREATMENT VS ACRYLIC?

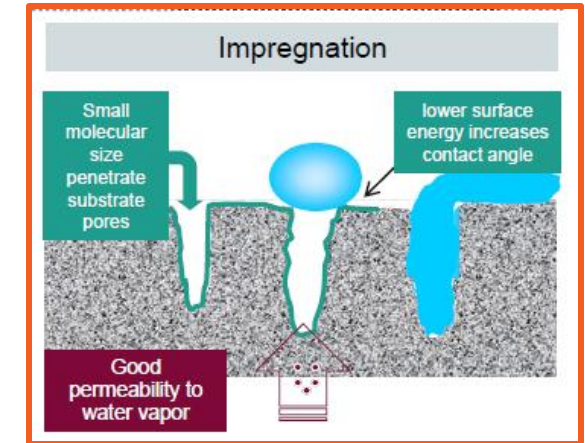


ACRYLIC

- Gloss
- Color
- Improved appearance
- Applied by:
 - Curtain, Flood, Vacuum

POST TREATMENT

- Water Proofing
- Penetrating protection
- Substrate reaction
- Highly durable protection





POST TREATMENT



PRODUCT	DILUTION SYSTEM	ACTIVE CONTENT %	SUGGESTED ACTIVE CONTENT %	PRESENTATION	SUGGESTED USE
DOWSIL™ 520 Dilutable Water Repellent Emulsion	Water	40	5-10	Silane/SiH siloxane emulsion blend	Penetrating water repellent suggested for mineral substrates. May be applied using a roller, brush or low pressure sprayer. This product is free of added solvent, low VOC and doesn't change the appearance of the substrate.
DOWSIL™ IE 6683 Emulsion	Water	40	5-10	Silane/siloxane resin blend	Water repellent suggested for porous substrates with improved beading effect. May be applied by brushing/rolling or dipping, and does not change the appearance of the substrate. This emulsion is free of added solvent and is low VOC.
DOWSIL™ IE 6682 Emulsion	Water	52,5	5-10	Silane/alkoxy resin emulsion blend, contains no free siloxane	Impregnation sealer for cementitious surfaces. Imparts water repellency to porous materials, which can be painted. Is permeable to water vapor, and can be applied as a primer or top coat.
XIAMETER™ OFS-6341	Solvent (Aliphatic/Alcohol)	98	5-100	Alkyl ethoxy silane	Additive for penetrating treatments that provide water repellency. Allows deep penetration in porous surfaces.



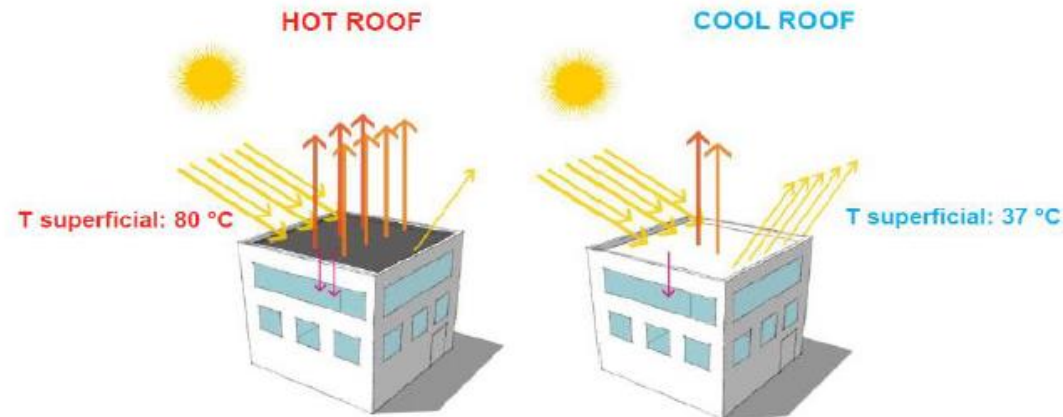
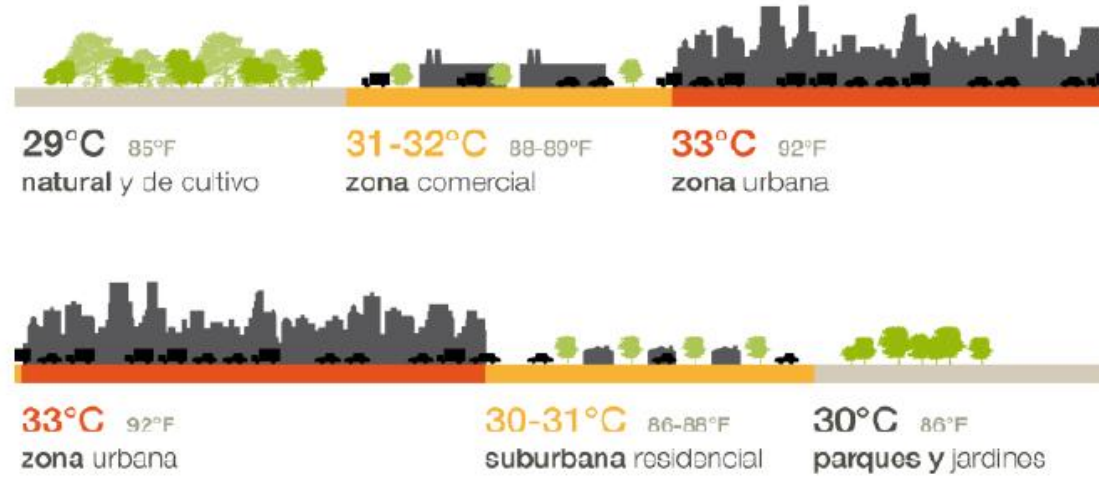
ACRYLICS



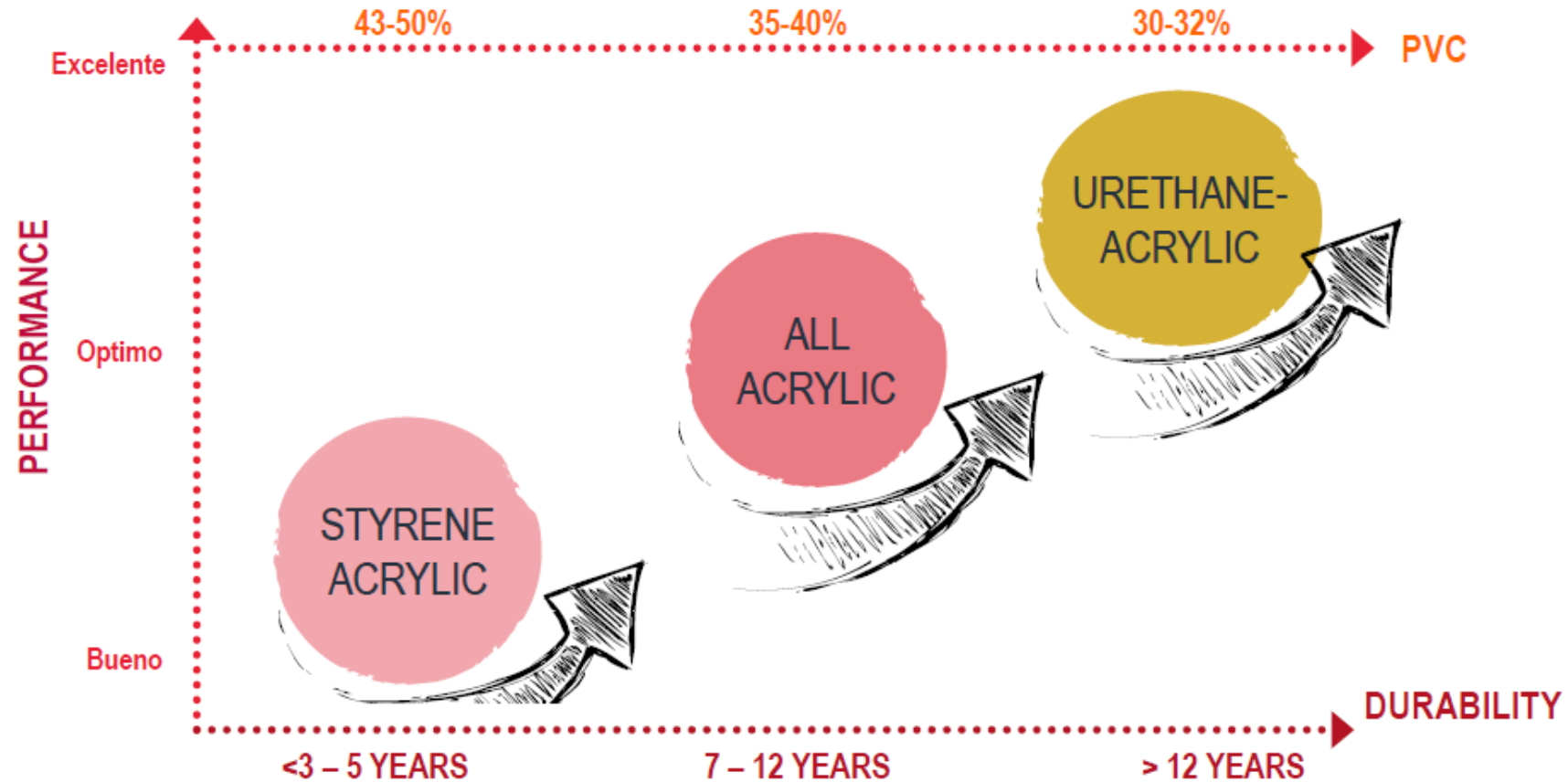
PRODUCT	MFFT (°C)	SOLIDS %	SUGGESTED USE
PRIMAL™ CS-4000	27	48	Water resistant binder with excellent durability and gloss. Great adhesion on various substrates. May be applied as a primer, curing membrane and clear sealer.
RHOPLEX™ EI-6000	12-16	46	Water based resin with excellent durability to weathering, blushing resistance and gloss. Excellent adhesion to various substrates. May be applied as a clear sealer and primer.
PRIMAL™ AC-630	17	50	Tough water resistant sealer that retards efflorescence. Suggested for cured cementitious products. Can be formulated with pigments to generate a top coat.
RHOPLEX™ 585	-	58-59	Resin with premium exterior performance, low VOC and formulation flexibility. Can be formulated with pigments to generate a top coat.

ELASTOMERICS FOR COOL ROOFS

HEAT ISLAND EFFECT



ERC SEGMENTATION



PRODUCT	MFFT (°C)	SOLIDS %	SUGGESTED USE
PRIMAL™ EC-2019R AF	< 0°C	55	Multipurpose binder designed to be applied to metal and asphalt. Provides good adhesion to various substrates, hydrophobic properties and is APEO free.
PRIMAL™ EC-1791	0°C	55	Binder designed to improve adhesion on wet and dry surfaces. Provides excellent durability properties in exteriors and high solar reflectivity properties thanks to its improved DPUR.
PRIMAL™ AU-1920	< 0°C	55	Elastomeric roof coating, designed to provide improved mechanical properties such as excellent adhesion to substrates like FRC and concrete. Presents excellent hydrophobicity and DPUR, and has wide formulation versatility.



iTHANKS!