

Cement based dry mix

Solutions for Dry Mortars
and Plasters



Designing
new values
in chemistry

Science of surfaces

Today, much more than in the recent past, building coatings are required to have mechanical characteristics, durability over the time and high resistance to increasingly aggressive atmospheric agents in order to respond effectively to the ongoing climate changes and to the widespread regulations in the world for energy saving.

At the same time, it is no longer possible to disregard the development of sustainable construction products to meet the medium and long-term objectives to zero the balance on greenhouse gas emissions with favorable product life cycle assessments in a circular economy perspective.

We have made our mission of these issues: to intimately link the performance aspect to that of social and environmental responsibility, by developing a unique product line based on natural sources.

This innovative approach is ingeniously applied in:

- Gypsum & Cement base dry mix
- Gypsum plasterboard and cement boards
- Ready mix solutions for wet systems since it could be used as a solution to change industrial characteristics and to achieve decorative effects as well.

For these fields of the Construction Industry, we developed the whole unique product line that consists of ESACOL®, ESA-ONE®, ESAMID, ESAPON and DEFOMEX additives, most of them composed by natural sources, such as our Guar Gum and Starch.

Plasters, skim coats, joint fillers, tile adhesives, coloured renderings, self-levelling floorings, waterproofing plasterboards and putties are the main applications where our specialties have been applied in the dry mix mortar and pasty systems with a demonstrated history of success over the last 30 years.

The widest range of **sustainable natural polymer** derivatives capable of solving issues caused by **heavy rain, critical freeze-thaw cycles and high humidity.**

Our solutions

Lamberti additives and premixes.

Cement is a building material used in mortars to protect and repair exterior walls, to glue tiles and fill tile joints.

Exterior mortars use to satisfy a large number of parameters such as open and setting time, high adhesion, good workability, high resistance to ageing and good filling power.

The adjustment and control of these characteristics guarantees ease of application and durability of construction works. The use of additives allows the producer to adjust these parameters.

Lamberti has a wide range of additives such as **Esacol**[®], **Esamid**, **Esatec**, **Esapon**, and **Defomex** that can help formulators to set the parameters of their cement formulations. From the complexity of using many additives came the idea of simple formulated solutions.

Esa-One[®] technology facilitates the production process of building products. It simplifies inventory management, guarantees consistent quality and assures quality control. The Lamberti Group development of the **Esa-One**[®] products provides technical support to its customers and offers a wide range of innovative solutions. The standard formulas presented in this document are the starting point of the support that can be provided by Lamberti and his team.

 **Esa-One**[®]

 **Esacol**[®]

 **Carbocel**[®]

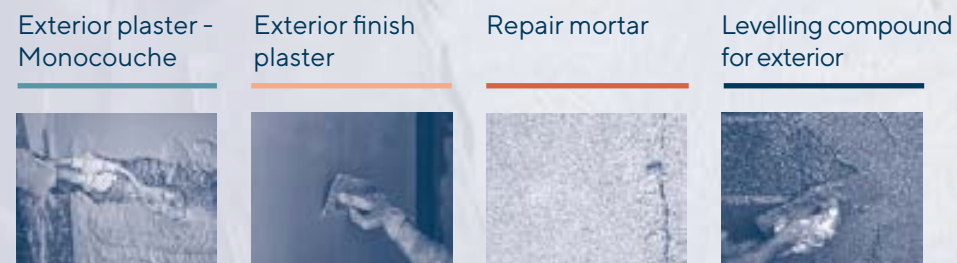
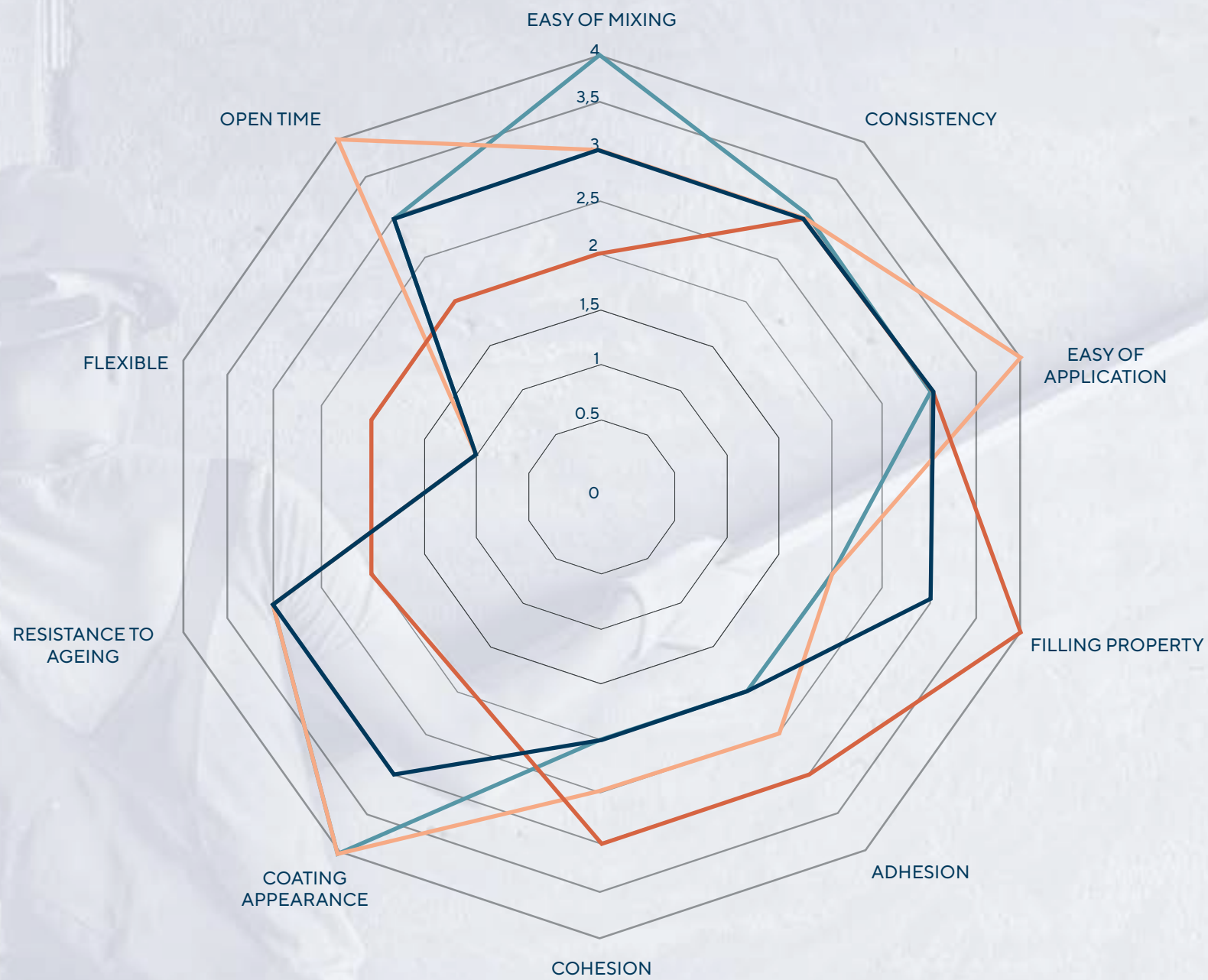
 **Defomex**

 **Esamid**

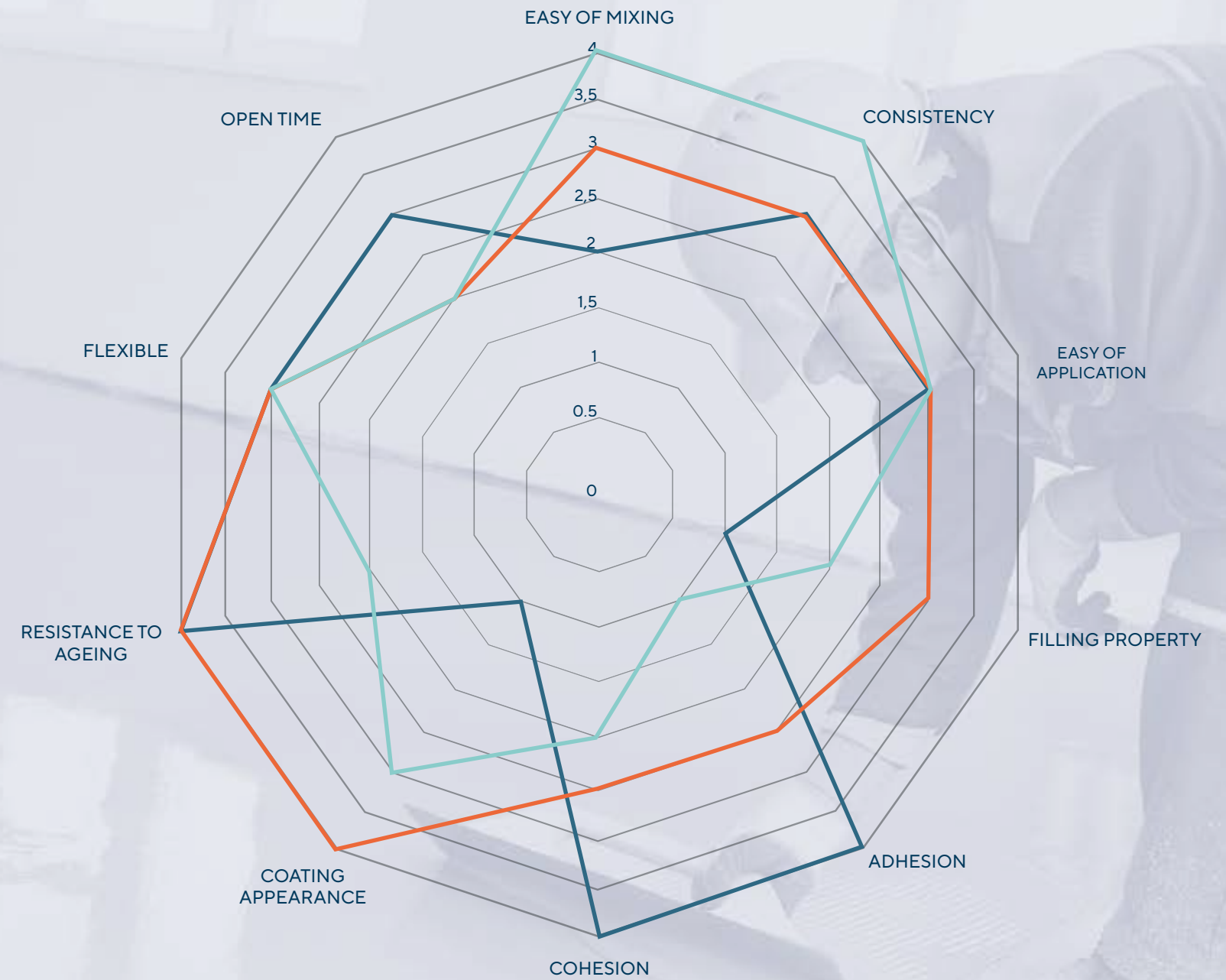
 **Esapon**

 **Esatec**

Cement wall plasters



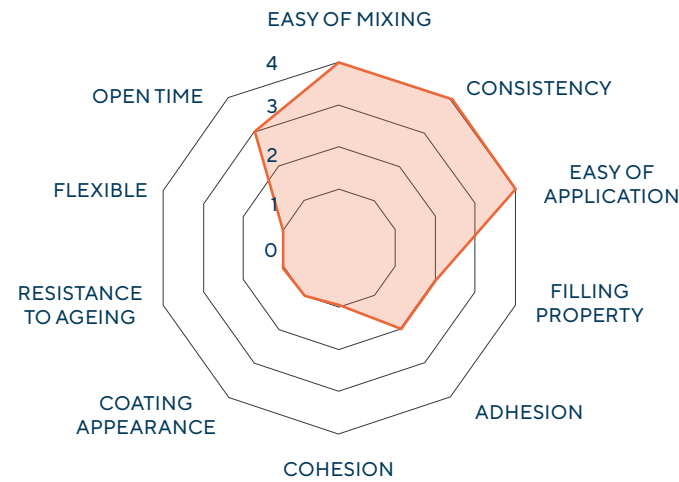
Flooring dry mixes





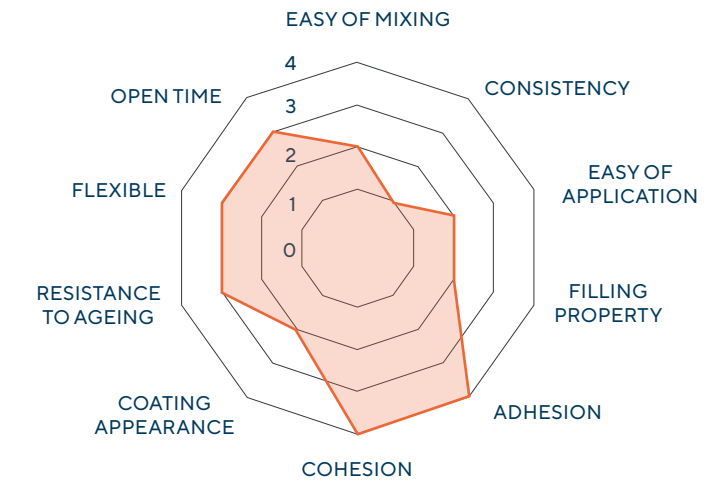
Guar gum base water retentive agents.

Lamberti offers a wide range of thickener with a high capacity to maintain water in the system. Allowing to control open time, workability and the desired consistency.



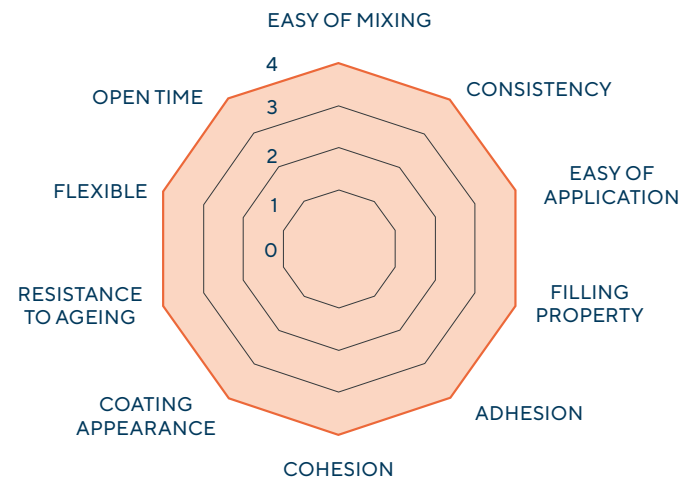
Complementary adjuvant

The Esatec range allows to adjust parameters such as adhesion, cohesion, consistency and setting time.



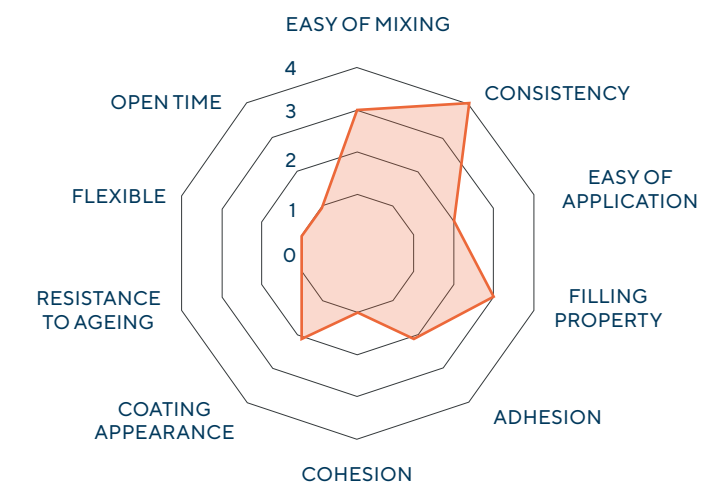
Formulated solutions.

The Esa-One® technology simplifies the production of cement-based drymix. It consists in designing a powder-based premix that will give to the product after blending with fillers and binders (sand, cement, lime), all the characteristics required by our customer.



Starch derivatives.

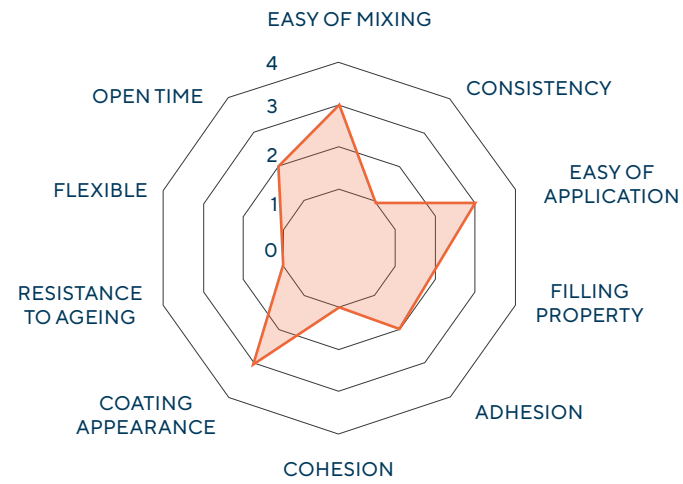
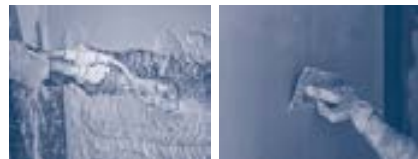
Composed by various chemically modified starches, the Esamid range contains additives able to adjust the consistency but also to enhance the open time, or help to fill in imperfections.



Esapon

Surfactants.

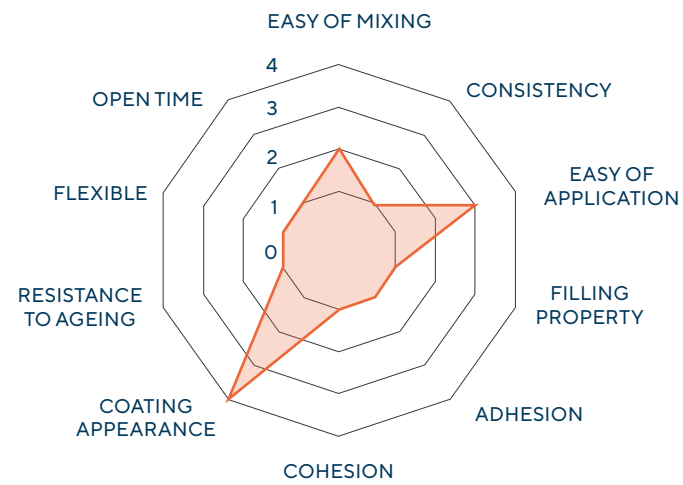
Able to control the air entrained into the system during the mixing, Esapon additives can also improve stability and prevent lump formation.



Defomex

Defoamers in powder form.

Our Defomex for drymix are produced in powder form. They have been designed to prevent bubble formation during the mixing phase and then give a smooth and homogeneous appearance to the finished product.



Guidance formula

Tile adhesive C1E (standard adhesion and open time extended)

Tile adhesives are used to glue tiles of different sizes and thicknesses on concrete screed. The extended open time simplifies the application and gives more correction time to the applicator.

Requirements:

- Good adhesion and cohesion
- Good open time
- Consistency
- Resistance to ageing (water, heat and freeze/thaw)

Wet product characteristics:

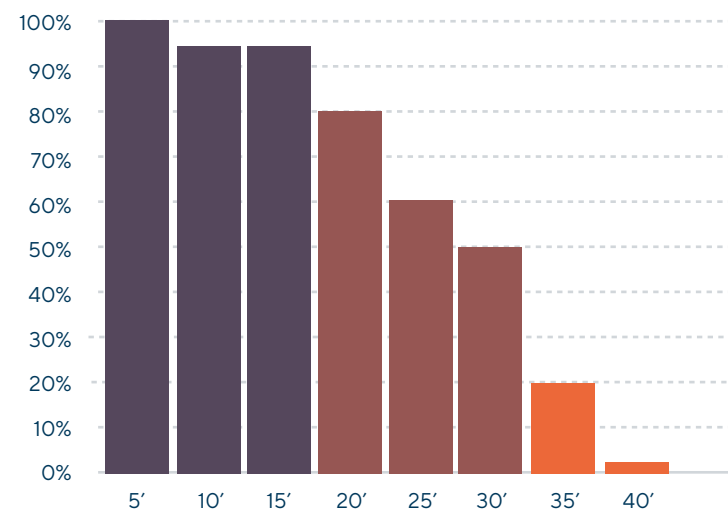
Shock table (15 shocks): 150 – 160 mm
Pot life: ≈ 3h



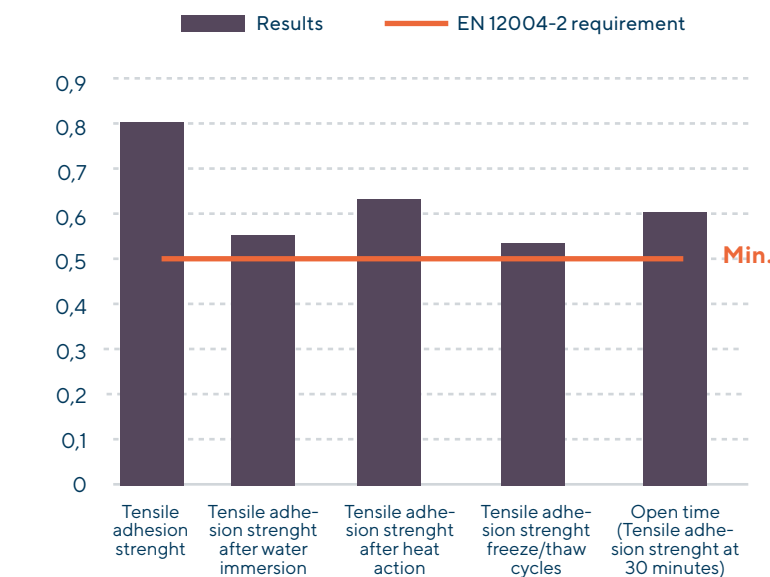
Additive based orientation formula		
Esacol® 55MU	0,50%	Workability, open time
Esatec 285	1,50%	Adhesion, Cohesion
Portland Cement	25,00%	Hydraulic binder
Silica sand 0,4 – 0,8	10,00%	Filler
Silica sand 0,2 -0,5	63,00%	Filler
Mixing water	28,00%	

Esa-one® solution	
Esa-One® CC200	2,50%
Silica sand 0,4 – 0,8	10,00%
Silica sand 0,2 -0,5	62,50%
Portland Cement	25,00%
Mixing water	27,00%

Wetting capability



Tests performed after 28 days



Guidance formula

Tile adhesive C1TE (Standard adhesion, slip resistance and extended open time)

Tile adhesives are used to glue tile of different sizes and thicknesses on various supports (gypsum board, concrete walls or screeds...)

Requirements:

- Good adhesion and cohesion
- Good open time
- Consistency
- Resistance to ageing (water, heat and freeze/thaw)
- No slip

Wet product characteristics:

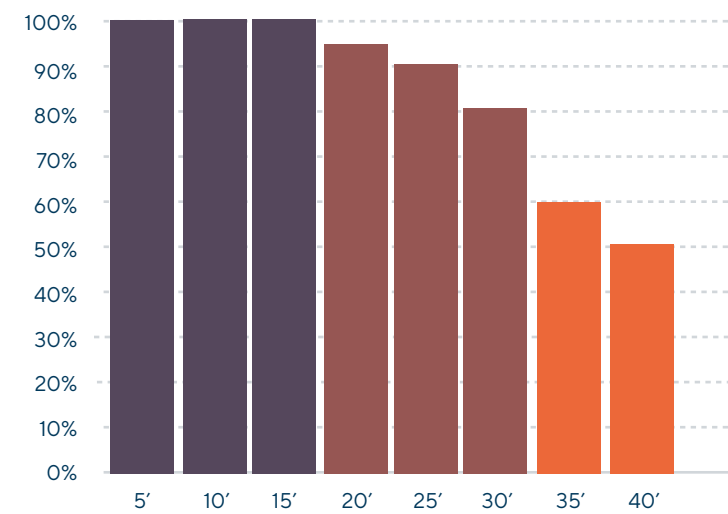
Shock table (15 shocks): 150 – 160 mm
Pot life: ≈ 3h
Slip (EN 12004-2 requirement < 0,5mm): 0,05 mm



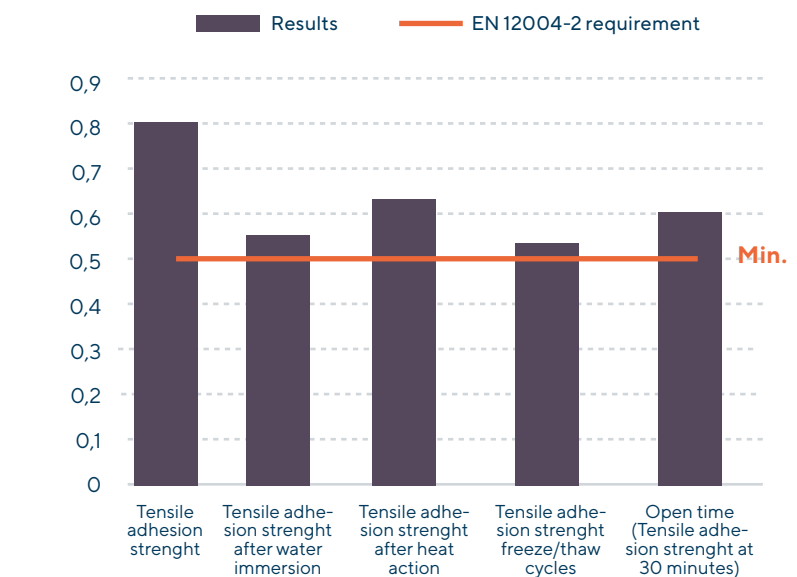
Additive based orientation formula		
Esacol® 50MB	0,60%	Retention, adhesion, open time, consistency and anti-sagging
Esatec 285	1,50%	Adhesion and open time
Portland Cement	25,00%	Hydraulic binder
Silica sand 0,4 – 0,8	10,00%	Filler
Silica sand 0,2 -0,5	62,90%	Filler
Mixing water	28,00%	

Esa-one® solution	
Esa-One® CC200T	2,50%
Silica sand 0,4 – 0,8	10,00%
Silica sand 0,2 -0,5	62,50%
Portland Cement	25,00%
Mixing water	27,00%

Wetting capability



Tests performed after 28 days



Guidance formula

Tile adhesive C2TE (High adhesion, slip resistance and open time extended)

Tile adhesives are used to glue tile of different sizes and thicknesses on various supports such as concrete screeds or walls. C2 tile adhesives are recommended for medium and large tile size. These adhesives have improved adhesion power and higher resistance to ageing.

Requirements:

- High adhesion and cohesion
- Good open time
- Consistency
- Resistance to ageing (water, heat and freeze/thaw)
- No slip

Wet product characteristics:

Shock table (15 shocks): 150 - 160 mm
 Pot life: ≈ 3h
 Slip (EN 12004-2 requirement < 0,5mm): 0,39mm



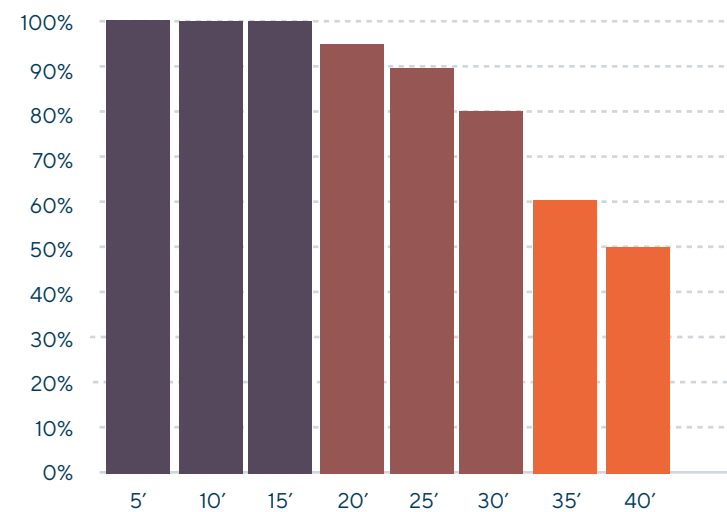
Additive based orientation formula

Esacol® 50MB	0,70%	Retention, adhesion, open time, consistency and anti-slip
Esatec 285	4,00%	Adhesion and open time
Portland Cement	35,00%	Hydraulic binder
Silica sand 0,4 - 0,8	18,00%	Filler
Silica sand 0,2 -0,5	42,30%	Filler
Mixing water	28,00%	

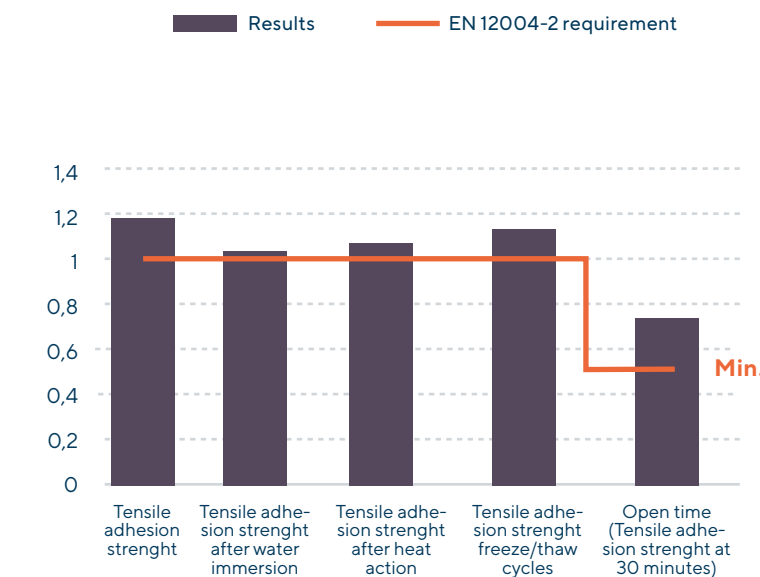
Esa-one® solution

Esa-One® CC510T	5,00%
Sand Sibelco 0,4 - 0,8	18,00%
Silica sand 0,2 -0,5	42,00%
Portland Cement	35,00%
Mixing water	28,00%

Wetting capability



Tests performed after 28 days



Guidance formula

Tile adhesive C2TES1 (High adhesion, slip resistance, open time extended and improved deformability)

C2TES1 guarantees high performances of the adhesives. The improved flexibility (S1 classification) of these dry mixes allows the gluing of very large tiles.

Requirements:

- High adhesion and cohesion
- Good open time
- Consistency
- Resistance to ageing (water, heat and freeze/thaw)
- No slip
- Good flexibility

Wet product characteristics:

Shock table (15 shocks): 150 - 160 mm
 Pot life : ≈ 3h
 Slip (EN 12004-2 requirement < 0,5mm) : 0,45mm



Additive based orientation formula

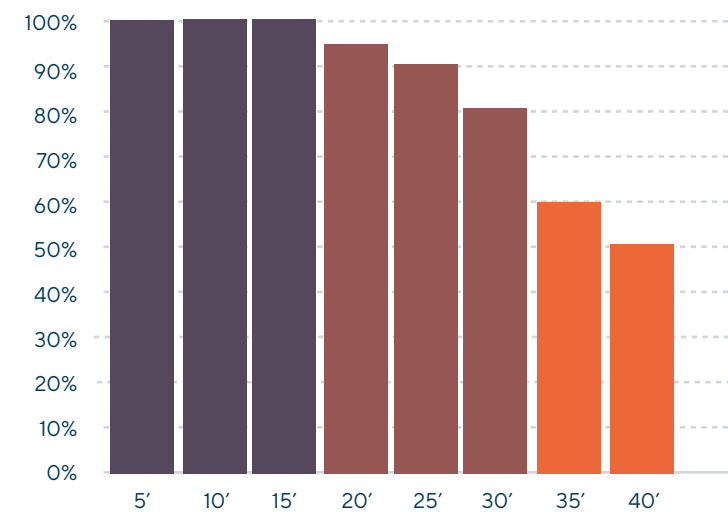
Esacol® 50MB	0,80%	Retention, adhesion, open time, consistency and anti-slip
Esatec 285	6,00%	Adhesion and open time
Portland Cement	40,00%	Hydraulic binder
Silica sand 0,4 - 0,8	15,00%	Filler
Silica sand 0,2 -0,5	38,20%	Filler
Mixing water	28,00%	

Esa-one® solution

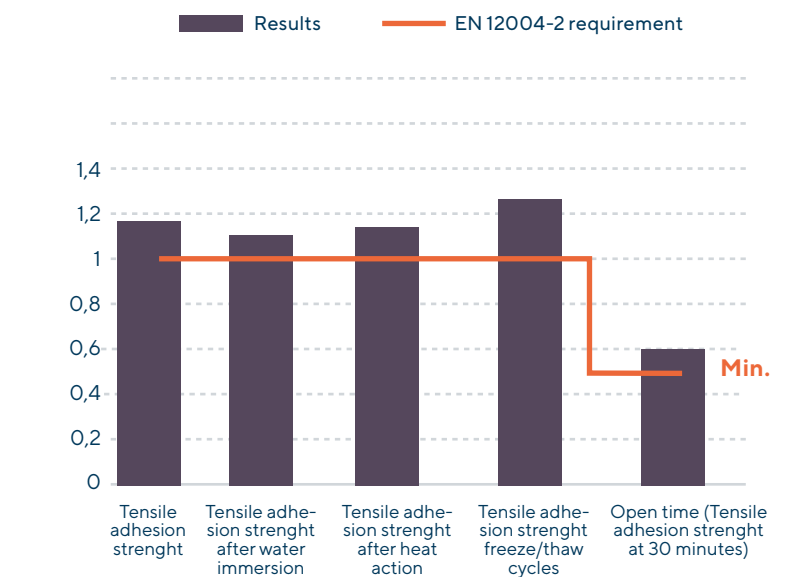
Esa-One® CC730T	7,00%
Silica sand 0,4 - 0,8	15,00%
Silica sand 0,2 -0,5	38,00%
Portland Cement	40,00%
Mixing water	27,00%

Deformability (EN 12004-2 requirement > 2,5mm): 3,53mm

Wetting capability



Tests performed after 28 days



Guidance formula

Tile grout (standard performance)

Mortars for grouting between ceramic tiles to ensure waterproofing.

Requirements:

- Resistance to ageing (water, heat and freeze/thaw)
- Good flexibility



Additive based orientation formula

Esacol® HSL30	0,20%	Rheology modifier, water retentive agent
Esatec 285	2,50%	Cohesion
Defomex AP122	0,30%	Anti-foaming agent
Accelerator	0,50%	Setting time adjustment
Superplasticizer	0,40%	Water mixing adjustment
Portland cement	40,00%	Hydraulic binder
Silica sand 0,4 - 0,8	2,35%	Filler
Silica sand 0,2 -0,5	4,69%	Filler
Silica sand 0,1 -0,3	9,38%	Filler
Silica sand 0,05 -0,2	30,48%	Filler
Calcium carbonate 15 µm	9,20%	Filler
Mixing water	25,00%	

Esa-one® solution

Esa-One® TG400	5,00%
Portland Cement	40,00%
Silica sand 0,4 - 0,8	2,35%
Silica sand 0,2 -0,5	4,69%
Silica sand 0,1 -0,3	9,38%
Silica sand 0,05 -0,2	30,48%
Calcium carbonate 15 µm	8,10%
Mixing water	25,00%

Guidance formula

Tile grout (improved performance)

Mortars for grouting between ceramic tiles to ensure waterproofing.

Requirements:

- Resistance to ageing (water, heat and freeze/thaw)
- Improved flexibility



Additive based orientation formula

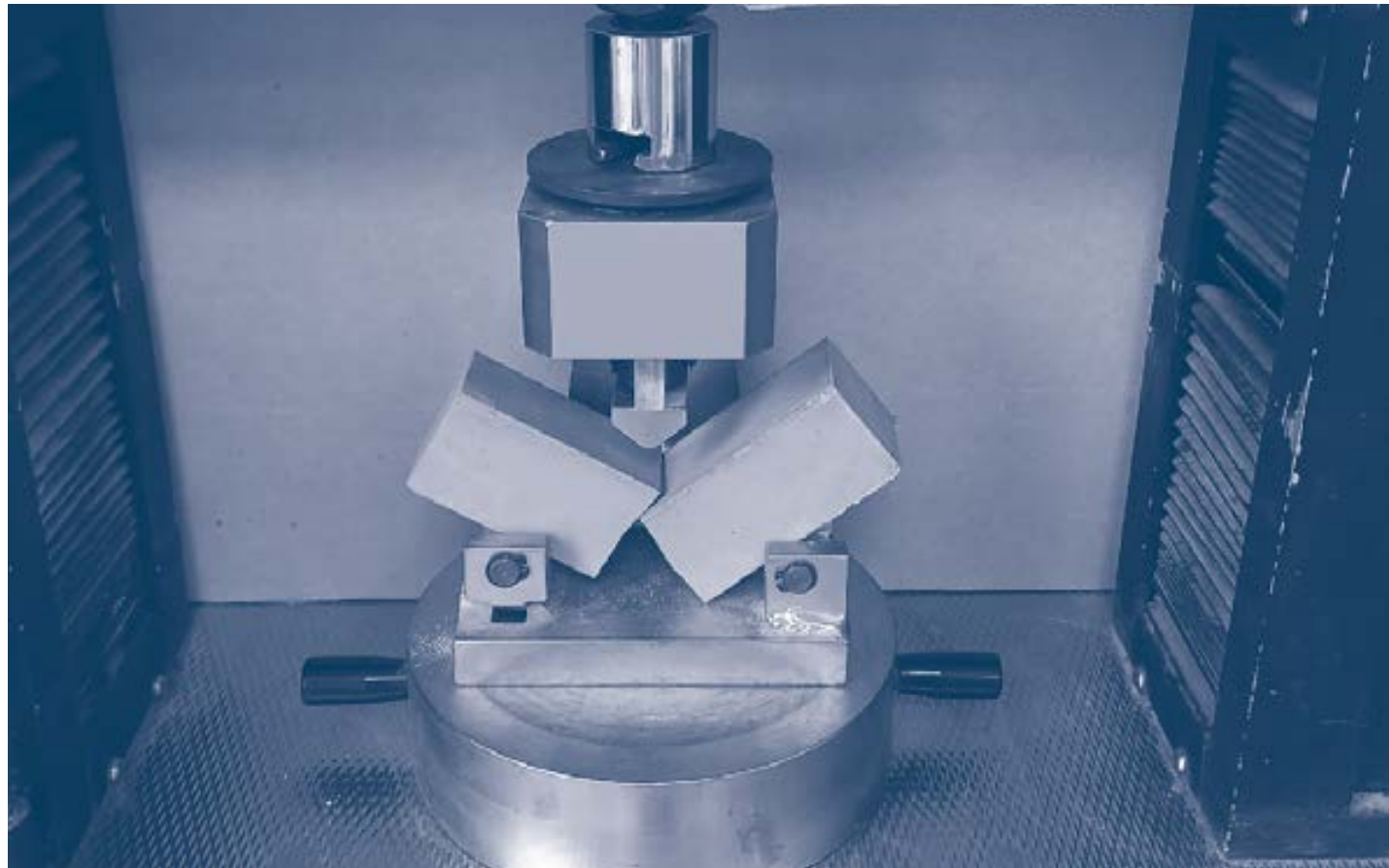
Esacol® HSL30	0,30%	Rheology modifier, water retentive agent
Esatec 285	3,30%	Cohesion
Defomex AP122	0,40%	Anti-foaming agent
Zinc stearate	0,13%	Waterproofing
Accelerator	0,07%	Setting time adjustment
Setting retardant	0,20%	Setting time adjustment
Superplasticizer	0,13%	Water mixing adjustment
Portland cement	1,00%	Hydraulic binder
Aluminous cement	30,00%	Fast setting hydraulic binder
Gypsum	10,00%	Hydraulic binder
Silica sand 0,1 -0,3	12,80%	Filler
Silica sand 0,05 -0,2	19,20%	Filler
Calcium carbonate 15 µm	22,47%	Filler
Mixing water	21,00%	

Esa-one® solution

Esa-One® TG900	5,30%
Portland Cement	1,00%
Aluminous cement	30,00%
Gypsum	10,0%
Silica sand 0,1 -0,3	12,80%
Silica sand 0,05 -0,2	19,20%
Calcium carbonate 15 µm	21,70%
Mixing water	21,00%

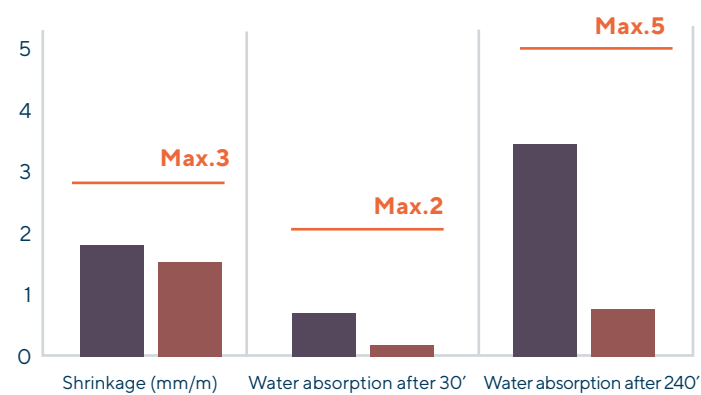
Guidance formula

Results according to CG2W (EN 13888) requirements



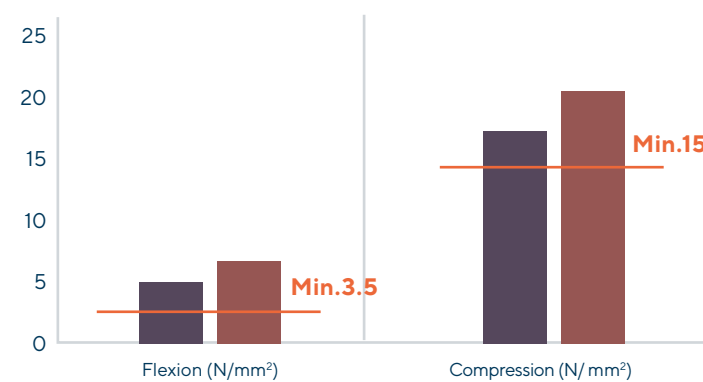
Tests performed after 28 days

■ Tile grout standard performance ■ Tile grout high performance



Tests performed after 28 days

■ Tile grout standard performance ■ Tile grout high performance



Guidance formula

Self-levelling

Liquid screed to be poured directly onto floor in order to fill imperfections and obtain a smooth and homogeneous surface.

Requirements:

- Consistency
- Adapted setting time
- No sedimentation
- Sedimentation: No
- Spreading: 230 - 250 mm
- Thickness: 5,0 - 5,5 mm
- Compression: 7,0 - 9,0 MPa



Additive based orientation formula

Portland cement	25,00%
Silica sand 0,2 -0,5	14,00%
Silica sand 0,1 -0,3	12,00%
Silica sand 0,05 -0,2	15,00%
Silica sand 0,4 -0,8	26,45%
Calcium carbonate 15 µm	5,00%
Esacol® HSL30	0,15%
Accelerator	0,80%
Superplasticizer	1,00%
Defomex AP488	0,60%
Eau	22,00%
Mixing Water	21,0%

Esa-one® solution

Esa-One® SL	1,50%
Accelerator	0,05 - 0,20%
Setting retardant	0,05%
Aluminous cement	25,00%
Portland cement	1,00%
Silica sand 0,2 -0,5	27,00%
Silica sand 0,1 -0,3	17,00%
Calcium carbonate 15	18,40%
Gypsum	10,00%
Mixing water	20,00%

Guidance formula

Exterior plaster - monocouche (application by spray machine)

Plaster projected to cover concrete or brick walls.

Requirements:

- Easy mixing
- Workability
- Water retention
- No shrinkage, no cracking
- Cohesion



Additive based orientation formula		
Esacol HS26s	0,30%	Rheology modifier and water retainer
Esapon 1850	0,03%	Wetting agent, distributes air in the system
Esapon 1214	0,01%	Air entraining agent
Accelerator	0,21%	Setting accelerator
Esatec 310H	0,005%	Consistency adjustment
Portland cement	15,00%	Hydraulic binder
Lime	4,00%	Hydraulic binder
Calcium carbonate 130µm	57,45%	Filler
Calcium carbonate 0,5 - 1,5	23,00%	Filler
Mixing water	23,00%	

Esa-one solution	
Esa-One® MC	0,60%
Portland cement	15,00%
Lime	4,00%
Calcium carbonate 130µm	57,40%
Calcium carbonate 0,5 - 1,5	23,00%
Mixing water	23,00%

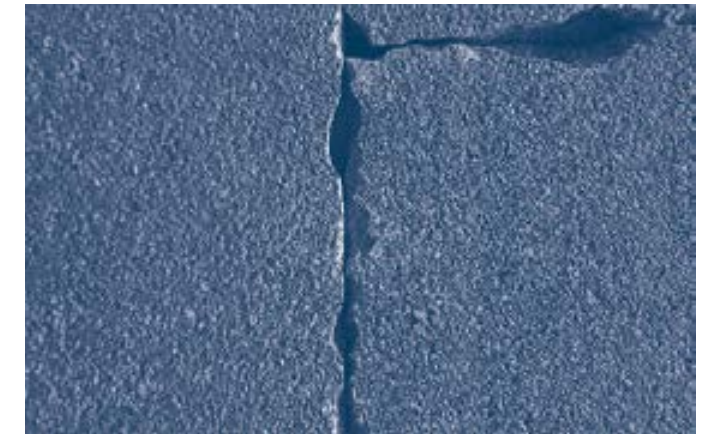
Guidance formula

Repair mortar

These cement-based plasters allow to fill big holes and cracks that can appear within time.

Requirements:

- Workability
- Water retention
- Low shrinkage
- Good Filling property



Additive based orientation formula		
Esacol® HS30R	0,42%	Rheology modifier and water retainer
Esatec 285	1,00%	Cohesion
Zinc stearate	0,20%	Waterproofing
Esapon 1850	0,01%	Wetting agent, distributes air in the system
Esatec 310H	0,01%	Consistency adjustment
Accelerator	0,05%	Setting time adjustment
Setting retardant	0,30%	Setting time adjustment
Portland cement	1,00%	Hydraulic binder
Aluminous cement	25,00%	Fast setting hydraulic binder
Gypsum	10,00%	Hydraulic binder
Calcium carbonate 130µm	30,00%	Filler
Calcium carbonate 15µm	32,01%	Filler
Mixing water	25,00%	

Esa-one® solution	
Esa-One® ELM	2,00%
Portland cement	1,00%
Aluminous cement	25,00%
Gypsum	10,00%
Accelerator	0,05%
Setting retardant	0,30%
Calcium carbonate 15µm	31,65%
Calcium carbonate 130µm	30,00%
Mixing water	25,00%

Guidance formula

Levelling compound for exterior (manual application)

Levelling compounds are used to prepare Walls. They allow to correct the irregularities of the walls before the application of the finishing coats. The application capacity in thin or thick layers of Esa-one RG allows the covering of deformations and imperfections of the walls. It gives excellent adhesion to the wall and good surface hardness

Requirements:

- Workability
- Good consistency
- Water retention
- Filling property



Additive based orientation formula

Esacol® HS26S	0,42%	Rheology modifier and water retainer
Esatec 285	0,50%	Cohesion
Zinc stearate	0,06%	Waterproofing
Esatec 310H	0,08%	Consistency adjustment
Portland cement	30,0%	Hydraulic binder
Calcium carbonate 0,35 - 0,7	35,0%	Filler
Calcium carbonate 0,5 - 1,5	17,0%	Filler
Calcium carbonate 15µm	16,94%	Filler
Mixing water	30,0%	

Esa-one® solution

Esa-One® RG	1,2%
Portland cement	30%
Calcium carbonate 0,35 - 0,7	35%
Calcium carbonate 0,5 - 1,5	17%
Calcium carbonate 15µm	16,8%
Mixing water	30,0%

Guidance formula

Exterior finishing plaster (manual application)

Finishing plasters are used to end walls. They make possible to obtain a smooth surface, without irregularities. A finishing coat must be easy to apply. The mixing should be fast and lump-free. The coating must have a good glide (effortless application) and a long open time (possibility to work on large surfaces). These cement-based products insure exterior wall protection from ageing.

Requirements:

- Workability
- Water retention
- Open time



Additive based orientation formula

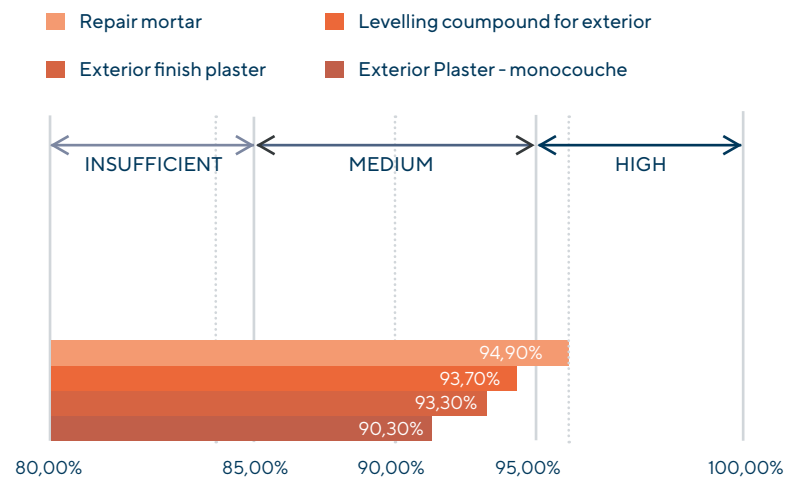
Esacol® HS30R	0,50%	Rheology modifier and water retainer
Esatec 285	1,00%	Cohesion
Zinc stearate	0,20%	Waterproofing
Esapon 1850	0,01%	Wetting agent, distributes air in the system
Esatec 310H	0,01%	Consistency adjustment
Portland cement	40,0%	Hydraulic binder
Calcium carbonate 130µm	35,00%	Filler
Calcium carbonate 15µm	23,28%	Filler
Mixing water	33,00%	

Esa-one® solution

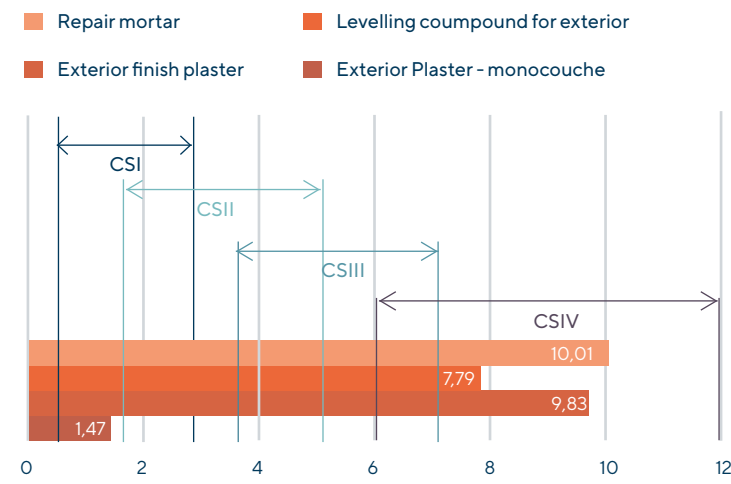
Esa-One® ELM	2,00%
Portland cement	25-40%
Calcium carbonate 130µm	35%
Calcium carbonate 15µm	23-38%
Mixing water	35-40%

Results according to EN 998-1 standard

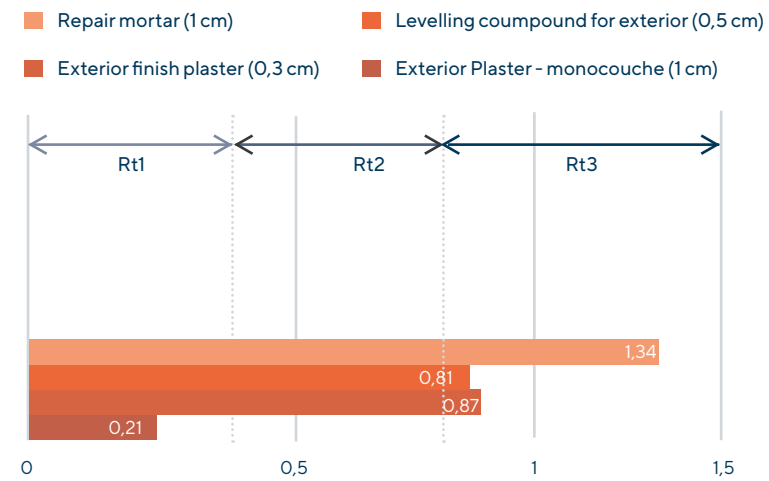
Water retention (-600mmHg during 15 minutes)



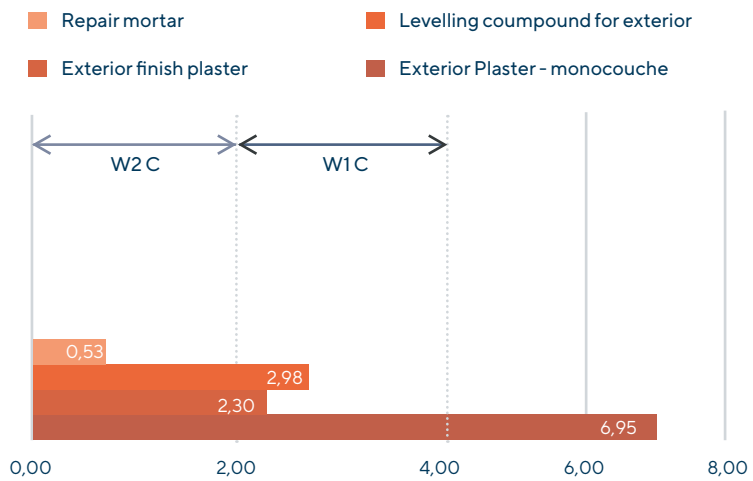
Compression resistance after 28 days (MPa)



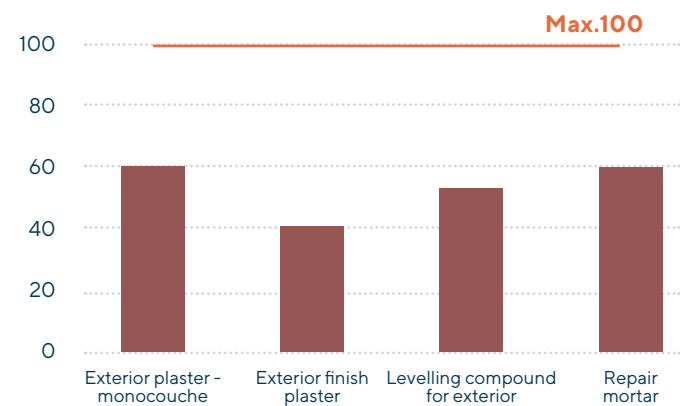
Concrete cohesion after 28 days (MPa)



Water absorption after 28 days (kg/m²min 0,5)



Included air stability after 30 minutes (mv increase in kg/m³)



The Lamberti Group

Explore, Design, Provide, Evolve.

We design and produce customized chemical solutions for different industries: not simply products or formulations, but sets of skills, capabilities, visions, developed with dedication and attention to our customers. Our science is made of experience, technology, and precision, for tailoring and delivering high performing solutions to our customers. Our ability to fit any market evolution demonstrates our capacity to be creative and innovative.

The history of our company is continually written by people's living stories.

Since 1911, our experience stems from over a century of history. From the initial affiliation

to the textile industry, we have learned the value of being part of structured eco-systems. Over time, we have invested in industrial plants and laboratories to cover all geographies. We have fostered a network of relationships, a rich wellspring of experience that gives value to our people.

We want to do better, creating a positive legacy for the future of the planet and living species.

Sustainability became a crucial challenge for Lamberti that we addressed with the subscription to international programs (RSPO and Ecovadis) as well as with the voluntary publication of the Group's Sustainability Report (2020).

Our technologies per market

	Cellulosics	Hydrocolloids	Acrylics	Waterbased polyurethanes	Oleochemicals
Agriculture	•	•	•	•	•
Personal care	•	•	•	•	•
Food and regulated industries	•	•			
Oil&gas	•	•	•		•
Mining and civil engineering	•	•	•		•
Ceramics and glassware	•		•	•	•
Surfactants					•
Wetend paper	•	•			
Drymix for construction	•	•			
Textile printing and finishing	•	•	•	•	•
Architectural paints	•	•	•	•	•
Coated and functional paper	•	•	•	•	•
Industrial coating			•	•	•
Digital inks			•	•	•
Inks ingredients			•	•	•
Leather finishing			•	•	
Synthetic materials		•	•	•	•



construction.lamberti.com