TECHNICAL DATA SHEET

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AERO FLEX

One-component, high-performance, flexible S1, lightweight cementitious adhesive C2, with no vertical slip T, extended open time E and extremely high yield. Easy to apply by trowel with excellent wetting properties, very low emission of volatile organic compounds for ceramic tiles, stone and large size tiles.

C2TE S1

The special AERO Technology used to manufacture AERO FLEX gives it a low density, a characteristic which offers two main advantages:

1. Bags of AERO FLEX have the same volume but weigh less (15 kg) than bags of conventional cementitious adhesive (25 kg). This makes for easier handling and savings in transport costs;
2. Higher yield: yield is approximately 60% higher compared with conventional Avalon cementitious adhesives.

WHERE TO USE:

1. Bonding all types and sizes of ceramic tiles (double fired, single-fired, porcelain, klinker, terracotta, etc.) on uneven internal and external substrates, without having to even out the surface before fixing.
2. Bonding all types of mosaic on internal and external surfaces, swimming pools.
3. Bonding natural stone on internal and external surfaces (for stone which is stable and not sensitive to humidity).
4. Bonding thin porcelain tiles (3-5 mm), even large format (150x300 cm), on floors and walls, including external façades.

Some application examples:
Bonding ceramic tiles (double-fired, single-fired, porcelain, klinker, ceramic and glass mosaic, etc.), stone (if stable in damp environments) and thin and large porcelain tiles on conventional substrates, such as:

- cementitious and anhydrite screeds (after application of AVAGRUND);

- heated screeds;
- cementitious render or lime-mortar render;
- gypsum-based plaster (after applying AVAGRUND);
- plasterboard, pre-fabricated panels, cement-fibre panels;
- waterproofing membranes AQUA BARRIERA NANO SMART;
- Laying ceramic and natural stone on old floors (in ceramic, marble, etc.).
- Laying ceramic and natural stone on balconies and terraces and paving slabs exposed to direct sunlight and thermal gradients.

TECHNICAL CHARACTERISTICS:
AERO FLEX is a grey or white powder made from cement, selected graded sand and a high amount of synthetic resin, with recycled silica micro-spheres which helps to make the mix lighter, according to a special formula developed in Avalon's own Research & Development laboratorie, as a contribution towards a sustainable building industry.

AERO FLEX mix has a low viscosity, which makes application quicker and easier.
In spite of the above characteristics, the thixotropic nature of AERO FLEX means there is no vertical slip when fixing on walls, even with large-sized tiles.
Its excellent back-buttering capacity and thixotropic consistency make AERO FLEX particularly suitable for laying thin porcelain tiles. In fact, the application of AERO FLEX using the double-buttering technique on flat substrates ensures that there are absolutely no voids in the adhesive on the back of the tiles, thus avoiding the risk of fracture when subject to load. Its excellent non-slip properties also make it particularly easy and safe to fix tiles on vertical surfaces.
When mixed with water, AERO FLEX forms a mortar with the following characteristics:

- excellent capacity of absorbing deformation in the substrate;
- excellent back-buttering property of the tiles;
- bonds perfectly to all materials normally used in the building industry;
- particularly long open and adjustment times, to make installation easier.

Do not use AERO FLEX in the following cases:

- on metal, rubber, PVC and linoleum;
- for slabs of marble and natural stone which are subject to efflorescence or staining;
- for natural agglomerate stone with high coefficients of moisture expansion.
- when the floored surface must be put quickly back into service.

Do not use AERO FLEX for installing thin porcelain tiles with reinforcement mesh larger than 7 000 cm² on externall surfaces and external façades. Use an "S2" deformability class adhesive for this type of application such as MEGA FLEX S2, or AERO FLEX, SUPERFLEX S1 and AVAGEL mixed with AVALATEX and water in proportion 1:1.
Do not add water to the mix once it starts to set.

APPLICATION PROCEDURE:
Preparation of the substrate:
Substrates must be mechanically strong, free of loose parts, grease, oil, paintwork, etc. and must be sufficiently dry. Cementitious substrates must not shrink after fixing tiles.

Therefore, in good weather, render must be cured for at least one week per cm of thickness, and cementitious screeds must be cured for at least 28 days, unless they are made using special Avalon binders for screeds, such as AVACEM.
If the surface is too hot due to direct sunlight, cool it down with water.

Gypsum substrates and anhydrite screeds must be perfectly dry, hard enough for the final intended use and free of dust and laitance. They must also be treated with AVAGRUND.
Substrates on which thin porcelain is to be laid must be perfectly flat. Therefore, where necessary, even out the substrate before laying the floor with a self-levelling compound from the HERCULES range.

Preparation of the mix:
Blend AERO FLEX with clean water to obtain a smooth, lump-free mix. Let the mix stand for approximately 5 minutes, then blend again. Approximately 6,0-6,3 liters of water are required for each 15 kg bag of AERO FLEX grey or white.
When blended as described above, the mix lasts for approximately 8 hours.

Spreading the mix:
Apply AERO FLEX on the substrate using a notched trowel. Use a trowel with a notch size which guarantees complete buttering of the back of the tile.
To guarantee a good bond, apply a thin layer of AERO FLEX on the substrate using the smooth side of the trowel, and then immediately apply a further layer of AERO FLEX to the thickness required using a suitable trowel, according to the type and size of the tiles.
When laying external flooring, for tile sizes larger than 900 cm² and floors subject to heavy loads, spread the adhesive also on the back of the tile to ensure complete buttering.
When laying thin porcelain floor tiles, we recommend that the adhesive is also spread (with the suitable notched trowel) on the backs of the tiles to guarantee there are no gaps to avoid the risk of fracture when in service.

Laying tiles:
The tiles do not need to be wet before they are laid. However, if the back faces are particularly dusty, dip them into clean water. When laying tiles, apply a firm pressure to guarantee good contact.
The open time for AERO FLEX is at least 30 minutes in normal weather and humidity conditions. When conditions are not ideal (direct sunlight, dry wind, high temperatures, etc.), or if the substrate is particularly absorbent, this time may be reduced to only a few minutes. Therefore, check often to make sure a layer of skin does not form on the surface of the adhesive, and that it is still fresh. If a layer of skin forms, spread the adhesive again with the notched trowel.
Do not wet the surface of the adhesive if a layer of skin forms. Water does not dissolve the skin, and impedes a good bond.
Final adjustment of the tiles must be carried out within 45 minutes of laying.
Tiles laid using AERO FLEX must be protected from water and rain for at least 24 hours, and from freezing weather and direct sunlight for at least 5 to 7 days.

Grouting and sealing:
Tile joints may be grouted after 4 to 8 hours on walls and after 24 hours on floors.
Expansion joints must be sealed using a special Avalon sealant.

SET TO LIGHT FOOT TRAFFIC:
Floors may be stepped on after approximately 24 hours.

READY-TO-USE:
Surfaces are ready-to-use after approximately 14 days.

Cleaning:
Tools and containers may be cleaned using water while AERO FLEX is still fresh.
Clean the surfaces of the floor using a damp cloth before the adhesive sets.

TECHNICAL DATA (typical values)
Conforms to the following standards:
– European EN 12004 (C2TE S1) – ISO 13007-1 (C2TE S1)

QUALITY STANDARDS
Manufacturing quality assurance standards conform to EN ISO 9001.
All Avalon products are supplied with product guarantee to be free from manufacturing defects and to be fit for purpose. The guarantee covers materials replacement costs and labour. This guarantee is subject to use of product in accordance with Avalon's instructions and technical data, and good working practice.
No liability can be accepted for any loss or damage arising from incorrect use of products or poor workmanship, over which Avalon has no control.
Contact Avalon Marketing Department for full details.

PRODUCT IDENTITY

Consistency:	powder
Colour:	white or grey
Bulk density (kg/m³):	870
Dry solids content (%):	100
EMICODE:	EC1 R Plus - very low emission
APPLICATION DATA (at +23°C - 50% R.H.)	
Mixing ratio:	100 parts of AERO FLEX S1 grey with 40-42 parts of water by weight
Consistency of mix:	creamy paste
Density of the mix (kg/m³):	1.200
pH of mix:	more than 12
Pot life of mix:	more than 8 hours
Application temperature range:	from +5°C to +40°C
Open time (according to EN 1346):	> 30 minutes
Adjustment time:	45 minutes
Grouting tile joints on walls	after 4-8 hours
Grouting tile joints on floors	after 24 hours
Set to light foot traffic:	24 hours
Ready-to-use:	14 days

FINAL PERFORMANCE	Bond strength according to EN 1348 (N/mm²):
initial bond (after 28 days):	1.24
bond after application of heat source	2.15
bond strength after immersion in water:	1.10
bond strength after freeze-thaw cycles:	1.15
Resistance to alkalis:	excellent
Resistance to oils	excellent (poor with vegetable oils)
Resistance to solvents:	excellent
In service temperature range:	from -30°C to +90°C
Deformability according to EN 12002:	S1 - deformable (> 2.5 mm, < 5 mm)

PACKAGING:
AERO FLEX is available in 15 kg paper bags, 48 bags on pallet.

CONSUMPTION:
0.8 kg/m² per mm of thickness, equal to 1.5-2.5 kg/m².

STORAGE:
AERO FLEX may be stored for up to 12 months in its original packaging in a dry place.

Ruse, 07.01.2022

Manager: G. Bonchev

Management System ISO 9001:2015 TÜVRheinland CERTIFIED www.tuv.com ID 9105084610