AGILIA®

The superior self-compacting concrete designed to achieve excellence in surface finish

Agilia® is a self-compacting concrete that will flow freely around congested reinforcement without the need for vibration or other energy input. Agilia® finishing characteristics and high quality surface finish can eliminate the need to power float concrete on site. The Agilia® family of concretes have the same general engineering characteristics, but each category utilises a slightly different mixture design, to ensure the optimum properties for each specific application.

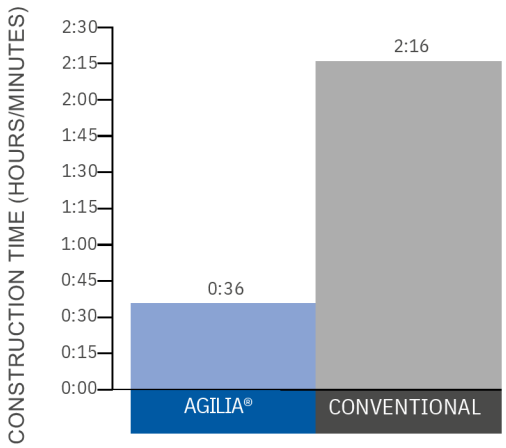
WHY AGILIA®?

Agilia® offers huge benefits and cost savings by allowing placement of concrete in difficult situations and complex formwork quickly and using less labour.

- Agilia® offers enhanced finish characteristics, which can eliminate the requirement for power floating, and can remove the need for screed overlay as flooring can be applied directly
- Agilia® may be placed by pump, skip or direct discharge.
- We're happy to assist with selecting the best method
- No bleeding or segregation
- Product fluidity reduces the labour required and allows placing into otherwise inaccessible locations, such as congested reinforcement conditions without bridging, blocking or honeycombing
- Agilia® self-compacting properties eliminate the necessity for vibration during placing, and a removal of traditional compaction and finishing methods gives the environmental benefit of noise reduction on-site
- Surface finishes of the highest standard are achievable with minimal effort and virtually no secondary or remedial activities
- Floor finish tolerance to BS 8204-1, SR2
- Particularly suitable for bridge decks, walls, columns, slabs, trenches, mass pours and precast applications
- Beneficial in producing cast architectural features

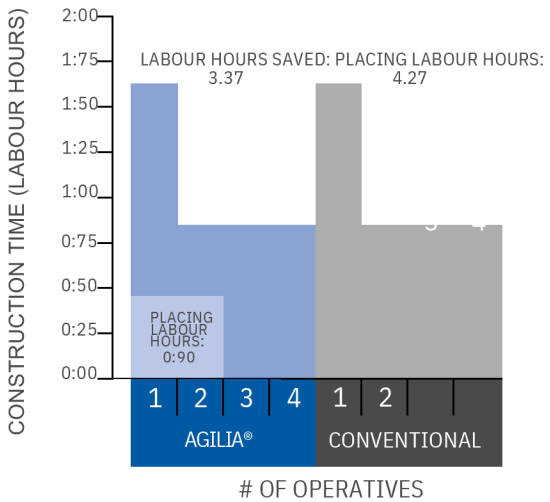
Agilia® is proven[1], to improve your construction processes, with significant savings.

Placement* time of 1m2 concrete



*Where placement includes discharge, tamping, screeding, levelling and with reference to Agilia®, dappling

Placement* time of 1m2 concrete



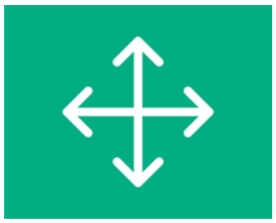
[1]Research undertaken by the Centre for Innovative and Collaborative Construction Engineering at Loughborough University to explore and quantify the effects of SCC in construction.

WHY AGILIA®?

- **Placement with Agilia® can:**
  a. Reduce slab construction time by nearly 75%
  b. Reduce the gang size from four operatives to two
- Removal of the power floating operation reduces an aspect of the variability and unpredictability with concrete slab construction
- Agilia® increases the predictability of construction project time and costs, reducing the risk of unforeseen expenses and delays

APPLICATIONS

- Slabs, columns, beams and walls
- All forms of light and heavy construction
- Composite deck construction (ribbed metal decking)
- Residential dwelling oversite / slabs
- Structural toppings
- Domestic floors
- Low traffic industrial floor slabs
- Mezzanine & office areas within industrial units



TYPICAL PERFORMANCE & TECHNICAL DATA

Available in strength classes from:	C28/35-C40/50*
Compressive strength at 28 days:	< 0.055µm/m
Minimum thickness, flooring applications:	>35MPa
Consistence class:	5mm Dependent on application** (default SF2)
Maintenance of fluidity	≤2 hrs

* If a greater strength is required Aggregate Industries will work to customer specification. Other grades are available.

**Will be discussed and agreed prior to supply.

INSTALLATION

FLOORING

- Agilia® can be laid over any stable substrate or cast into any type of formwork designed for the full hydrostatic head.

BOND TO SUBSTRATE

- When the concrete is laid over any stable surface unbonded to the substrate, a polythene membrane of suitable thickness will be required
- When the concrete is to be laid bonded, steel reinforcement mesh will be required. Bonding compound (such as an SBR type product) must be applied to the substrate

PERIMETER ISOLATION FOR SLABS

- A compressible strip with a minimum thickness of 5mm and maximum of 15mm should be fixed around the walls
- The isolation strip is required to be fixed around vertical features such as columns and pipe ducts
- Particular attention must be taken at re-entrant angles such as doorways, bays and alcoves
- Ensure the perimeter isolation is placed at right angles into all corners of the room
- On exterior angles it may be necessary to double up the isolation to ensure that the minimum thickness is maintained around the angle
- The most suitable material for this is a self-adhesive ethafoam strip; a small amount of steel mesh should also be placed around any internal corner or extrusion through the slab

SUBSTRATE PREPARATION

- In all cases, a polythene membrane of 150µm minimum thickness and 350µm maximum thickness must be laid on the substrate with any folds or peaks being smoothed out
- Agilia® is highly fluid and this requires the membrane to be substantially watertight to prevent loss of material
- The sheet should be laid with a 300mm overlap, adhesive tape at least 50mm wide should be applied along overlapping joints of the sheets to seal them
- Care should be taken to ensure the membrane is folded, or cut and sealed, into a corner
- Around the perimeter of the room, the edges of the polythene membrane should extend well above the intended level of topping or should be taped to the ethafoam strip

STRUCTURAL APPLICATIONS

- Agilia® is highly fluid and where used in columns and walls the formwork should be designed for the hydrostatic head, normally constructed and sealed to retain all of the mortar
- Where the formwork contains intricate textures or relief designs we'll be happy to advise on trials to establish the optimum method of shutter preparation

CONDITIONS

- Agilia® can only be laid when the air temperature is between 5°C and 30°C
- Agilia® should not be placed when air temperatures are 5°C and falling
- The formwork, reinforcement and substrate must not be frozen, should be free from frost and ideally should be kept within the above temperature range

SETTING OUT LEVELS – SLABS

- The thickness of the concrete from the highest point of the prepared substrate should not be less than 50mm and should incorporate measures to counter plastic shrinkage and possible cracking
- To adequately set out the levels before placing the concrete, the highest point should first be found
- To easily identify the thickness to be laid, a series of tripods with a height adjustable indicator should be used. A tripod should be placed at the highest point to denote the top of the finished slab and a nominal minimum thickness of 75mm
- Other tripods should be placed at two to three metre intervals across the slab and the indicators set using a laser-levelling device with the first tripod as the datum

SLUMP-FLOW MEASUREMENT

- Agilia® consistency is measured by slump-flow to BS EN 12350
- When Agilia® arrives on-site, the slump-flow of the material should be within either the agreed consistency class range of values, or any agreed target range of values. The default range is 660mm – 750mm when measured using the correct equipment. If the mix is outside of the target range, then advice should be sought from your Aggregate Industries Readymix representative as to the appropriate course of action
- Do not add water or other materials without the express agreement of Aggregate Industries

PUMP PRIMING

- If the concrete is to be pumped, prior to pumping it is essential that the pump is primed. The pipes must be fully "lubricated" with a suitable slurry. For a small "rotor and stator" pump the slurry is made up using approximately 10 kg of pure cement mixed with 10 litres of water
- In all cases the slurry should be fed through the pipes and fully recovered at the discharge end before any of the concrete is discharged. The slurry must not be incorporated into the pour

PUMPING / TREMIE PLACEMENT

- When placed into vertical formwork, Agilia® must not be dropped as this will result in segregation. The placing hose or tremie should be approximately 150 mm above the previous layer or kicker. During placing the outlet of the pipe / tremie should remain embedded in the concrete and be raised as the level increases. Aggregate Industries staff will provide advice on request
- When placing the product onto floors, the pump hose should be held approximately 500mm from the substrate. The hose should be moved in a sweeping motion and should not be held stationary above any fixed point. Agilia® should be poured until the preset levels, as denoted by the tripods, have been reached

DAPPLING / FINISHING

- Where placed in walls, columns and the like the top surface should be lightly tamped to create a flat relatively smooth surface, and once stiffening begins the concrete should be cured as normal
- When the material has been placed into a slab and to the desired levels it should be dappled immediately to obtain the best surface finish. The T-bar should be moved across the surface of the concrete with a dappling motion to generate a wave-like ripple across the surface
- Dappling must be carried out in two directions, the second being perpendicular to the first. The first pass should be a deep pass to approximately two-thirds of the depth of the concrete, the second a light pass over the surface

CURING

Following placing and dappling in slabs, a curing membrane must be sprayed over the surface using a mist sprayer. Care should be taken to follow all relevant health and safety procedures when using the curing membrane, including goggles and respiratory equipment It's essential to ensure complete coverage of the surface as per manufacturer's guidelines The slab should be protected from excessive winds or drying for 48 hours after placing

FOLLOWING PLACING

- The normal rules for the removal of vertical formwork should be followed but, to avoid damage to high quality finishes and establish optimum striking times, it may be appropriate to wait longer on the first pours
- Slabs and beams should be only struck and propped following the project specification / engineer's guidance. Aggregate Industries are available to discuss project requirements
- All normal curing techniques may be used however, care should be taken to ensure the chosen method is compatible with following finishes
- Slab surfaces will be suitable for light foot traffic after 24 hours and can be worked on after a period of 72 hours from placing
- The slab should not be loaded with palletised materials until at least seven days Partitions can be erected after a minimum of seven days from the time of placing. Floor finishes should ideally be applied within a 60-day period after placing

BAY SIZES (WHEN INSTALLED WITHOUT CRACK CONTROL MESH REINFORCEMENT)

- Saw cut joints should be detailed at 40 times the depth of the slab (in mm) e.g. a slab that is 75mm deep = 40 x 75 = 3,000mm, therefore joints must be at 3m x 3m
- Where the internal walls are built through the slab then a joint should be formed across the door threshold where the wall separates the two rooms

FIBRE SOLUTIONS FOR THE REPLACEMENT OF STEEL MESH IN FLAT SLABS

Agilia® can be combined with various fibre technologies to facilitate the removal of crack control mesh in slab construction. The fibres are distributed evenly within the Agilia® concrete and the material is placed and finished in the usual Agilia® methodology. Depending on the volume and type of steel mesh initially specified, either macro-synthetic or steel fibres can be added to offer a cost effective alternative to traditional crack control mesh.

This dispenses with the need to procure traditional mesh, to take delivery of it and store it on-site, before finally cutting and placing it in the slab. Agilia® with macro or steel fibres provide financial, logistical and health and safety benefits. A design service is also available on request; please contact your Aggregate Industries representative for further details.

SAFETY PRECAUTIONS

The use of full PPE, including eye protection, hard hat, ear defenders, gloves and impervious boots is recommended when placing Agilia® or any other concrete.

FIRST AID

- **Eyes**: Immediately flush eyes, including under lids, with water for at least 15 minutes to remove all particles. If necessary, seek medical advice
- **Skin**: Wash skin with cold water and a pH neutral soap as soon as possible, except where open wounds are visible. Attention should be paid to wounds and fresh scars which should be covered with protective paraffin gauze. Seek medical help in cases of prolonged contact with wet concrete
- **Ingestion**: Rinse mouth with clean water. If swallowing has occurred drink plenty of milk or water. Do not induce vomiting. Seek medical attention immediately
- **Inhalation**: Move to fresh air. If symptoms persist seek medical attention

PRODUCTS IN THE AGILIA® RANGE

- **Agilia H (Horizontal)** - for floor slabs
- **Agilia V (Vertical)** - for wall applications
- **Agilia F (Foundation)** - for domestic and light industrial foundations
- **Agilia A (Architect)** - for visual and fair face concrete finishes (can be supplied with integral pigmentation, subject to availability)
- **Agilia H Housing** - Structural topping containing steel or polypropylene macro fibres for block and beam flooring
- **Agilia ECO -** We can also manufacture Agilia as our low carbon concrete, ECOPact; delivering a carbon saving of 30-50%.

For further guidance on block and beam flooring refer to British Precast Flooring Federation, Application guide for the specification and installation of concrete toppings to beam & EPS block suspended floors.

SUSTAINABILITY & LOCAL SOURCING

Responsible sourcing: Aggregate Industries is the first company in the world to achieve a BES 6001:2008 Responsible Sourcing Certificate from BRE Global. Products are assessed on: Quality management Environmental management Health and safety management Greenhouse gas emissions.

ENERGY USE:

Aggregate Industries is at the forefront of sustainability and has committed to reducing both energy and greenhouse gas intensity 5% year-on-year (18.5% total improvement by 2020).
request

TECHNICAL SUPPORT

Detailed guidance and assistance with the preparation of specifications and use of our concrete range of products is available through the sales offices. A free technical service is also available. Call our technical services at the nearest sales location to your contract.

CONCRETE V1 MANUFACTURING LOCATION:

Produced in the UK, with locally sourced materials under strict environmental and social legislation, for local supply.

RECYCLABLE:

The product has a life expectancy of 60 or more years and is fully recyclable.

CARBON FOOTPRINT:

Aggregate Industries can calculate the carbon footprint of each Agilia® product using our 3rd party accredited calculation tools using EPD methodology. In some areas of the UK we can also provide **Live On-Demand Project Specific EPDs**. a first for the concrete industry giving you the most transparent carbon data available.

KEY AGGREGATE AND RECYCLED CONTENT

This product may be supplied containing a secondary aggregate to achieve a reduced environmental impact and increased Green Guide ratings for structural elements and assist in achieving BREEAM waste credits.

POLICIES

Aggregate Industries' policies on the environment and community, health and safety and sustainable solutions for different product applications can be viewed on our website www.aggregate.com

COSHH DATA

Full COSHH data on our concrete products is available on request

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