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SITE WORK PROCEDURE		Doc. No.	SWP.FS.14.09
Department	QA/QC	Rev.	
Title	ECOCON Floor Screed Works	Date	



SITE WORK PROCEDURE
SWP.FS.14.09
ECOCON FLOOR SCREED WORK

1	Revision-1	
2	Original Issue	
Rev.	Revision information	

Originated by	Reviewed by	Approved by
<i>Signature</i>	<i>Signature</i>	<i>Signature</i>

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FLOOR SCREED WORKS

1.0 OBJECTIVE

To describe the procedure for laying of ECOCON floor screed for the UAE customers.

2.0 GENERAL INFORMATION

ECOCON Screed:

A layer of ECOCON Nanocrete (lightweight cellular concrete), which is produced as dry mix packed in bags (Pos.1) and that is applied to a base at the appropriate thickness (H) and that has a surface suitable for receiving a floor finish. Applicable to all the buildings in living and service areas for loads related to human activity and light traffic. Suitable for following finishing: ceramic and marble tiles, parquette, self-levelling (liquid) screeding.

Surface finish:

The surface of ECOCON screed should be finished according to the type of wearing surface or flooring that is to be laid. For tiles, marble, wood block and strip, and some textile floor coverings, a non-slip finish is appropriate, while parquette, thin sheet and tile floor coverings usually require a special, self-levelling hard and smooth surface.

3.0 REFERENCE

Project Approved Drawings
Applicable Building Code

4.0 PROCEDURE

4.1 MATERIALS

Following materials should be applicable for Floor Screeding work (calculated per 10 square meters, H=10 cm screed):

Option 1: Using Self -Levelling Screed

DESCRIPTION	THK, MM	QTY, KG
ECOCON DryMix, D500	95	500

4.4 SITE CLEARANCE:

4.4.1 On completion of screeding work, arrangements shall be made for curing of the screed and then the site shall be cleaned, clear off all the excess mortar/screed materials, rubbish etc. from the site to rubbish skip.

4.4.2 Request for Inspection shall be submitted to QP for final inspection and acceptance.

Option 2: Without Self-Levelling Screed

DESCRIPTION	THK, MM	QTY, KG
ECOCON DryMix D500	85	430
ECOCON RS-1	15	240

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ECOCON DRY MIX Technical Specifications:

Dry Density	500 kg/m ³
Compressive strength (Average)	2.5 m ²
Material discharge rate	500 kg/m ³
Watering ratio	3.5 l of water for 10 kg of Dry Mix
Mixture durability	20 min
"Stay on surface" curing term	12 - 15 hours
Full curing term	7 days
Adhesion to concrete surface	0.51 MPa
Linear Temperature Extension Ratio	8*10 ⁻⁶ /K



Pos. 1 ECOCON Dry Mix
in 50 kg bags

4.2 ACCESSORIES

Following tools and accessories should be used for Floor screeding work

ECOCON Mixing and Pumping Unit (Pos.2,3)	1 pc.
Ruler	2 pcs.
Spirit level L>2m	1 pc.
Spirit level L=1m	1 pc.
Laser dumpy level or waterpass	1 pc.
Cordless screwdriver	1 pc.
Electric drill mixer	1 pc.
Bucket	2 pcs.
Screws	1 set
Surfacer Plaster Stick	1 pc.
Screed rail and formwork	1 set



Pos. 2 ECOCON 3 bags mixer
(150 kg mixing batch)



Pos. 3 ECOCON 2X9 bags mixer
(450 kg mixing batch)

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4.3 OPERATION PROCEDURES

4.3.1 Surface preparation

The surface of the concrete base must be clean firm and rough to ensure a good bond. This shall be achieved by hacking thoroughly to remove all laitance and to expose the aggregate over the whole area, followed by sweeping clean and hosing down to remove all dust.

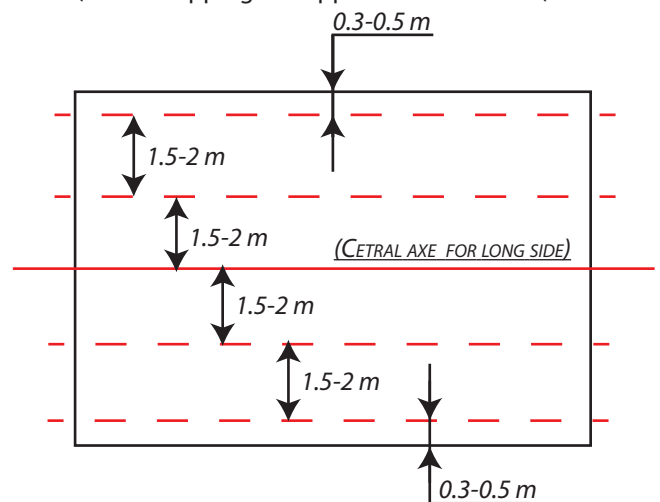
The base shall be soaked with water for at least 12 hours and surplus water removed before laying commences.



Pos. 4 Fixing of PU foam board to wall

4.3.2 Fixing of PU foam board to walls

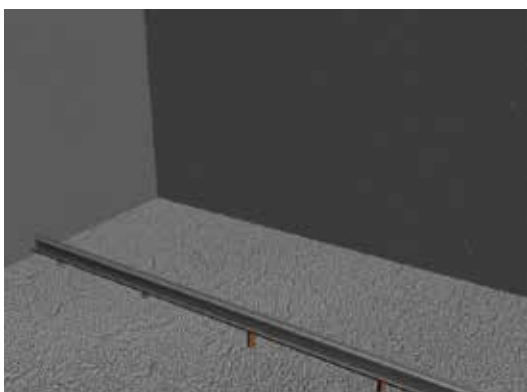
A PU foam board (2-3 mm thickness) is fixed to the wall covering the height of the screed (1-2 cm topping the upper level of screed (Pos. 4)



Pos. 5 Marking of floor base

4.3.3 Concrete base marking

The floor concrete base should be marked in a following way: to mark 1.5 - 2 strips (in dependance on length of available smoothing board and room configuration) from the central long axe to side walls. The last (nearby wall) strip should be 30 - 40 cm width (Pos. 5).



Pos. 6 Levelling bath installation

4.3.4 Levelling laths installation

In accordance with marks, 10 mm holes should be drilled in the floor base each 60 - 70 cm. Wooden plugs are hammered into these holes. The cap of wooden plug should be 3-5 cm higher than floor base level (Pos. 6).

The end plugs height should be adjusted with the help of laser or water level. The rope is stretched from on end plug to the other and other plugs height is adjusted with the level shown by rope.

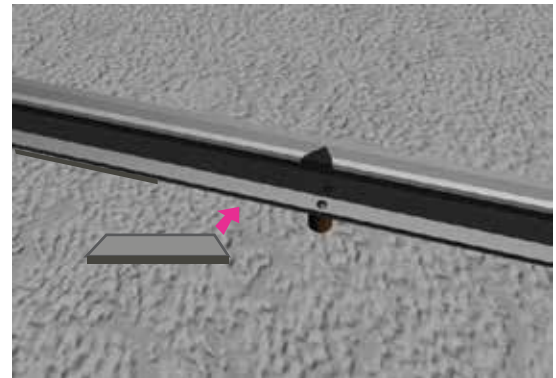
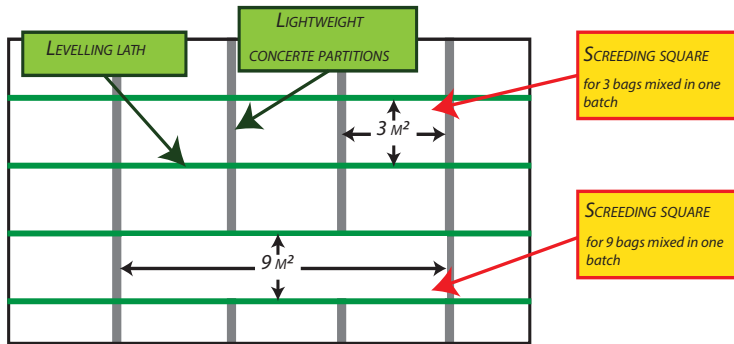
Levelling laths is fixed to the top of fishes with screws (Pos. 7)

The space between floor base and lelling lath should be filled with cuts made with ECOCON Nanocrete panels or blocks.

When screeding work is produced for water-proof areas or areas where the drilling of base is impossible, levelling laths are fixed to floor base with cement-based ECOCON adhesive.

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The screeding strips should be partitioned with ECOCON panels in a such way that the square of one time screeding will be 3 m² for 3 bags mixer and 9 m² for 9 bags mixer (Pos. 8).

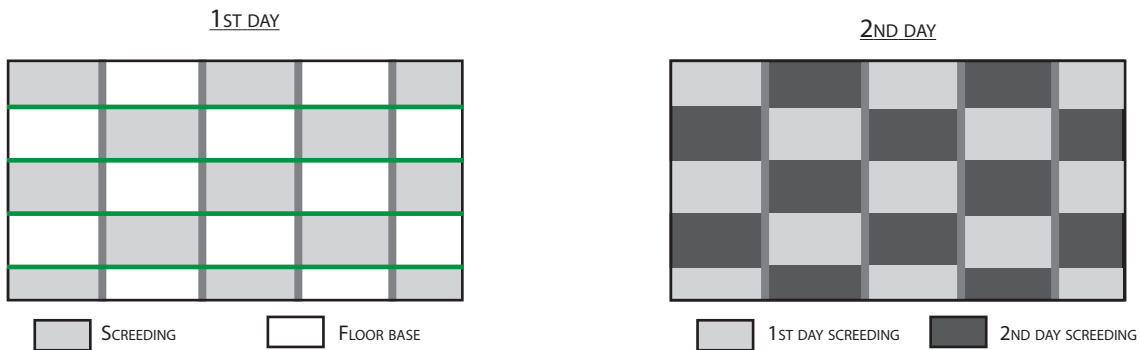


Pos. 7 Levelling lath fixing to wooden plug.

Pos. 8 Dividing the floor base into squares

4.3.5 Mixing and application of ECOCON Nanocrete

The mixing and application of screeding material is carried out in accordance with manual and recommendation for ECOCON nanocrete application. The screeding of squares should be carried out in accordance with Pos. 9



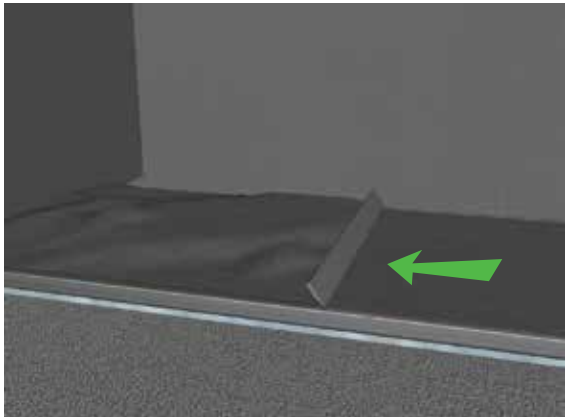
Pos. 9 Screeding work order

After proper preparation and mixing of ECOCON Nanocrete the mixture is poured into the designated square in such way that the level of ECOCON Nanocrete mixture will be half of the screed thickness (Pos. 10).



Pos. 10 Filling of ECOCON screed

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Pos. 11 First levelling of ECOCON screed

After 2 - 2.5 hours it is necessary to make watering of the surface and to level the surface with rounded edge of smoothing bar trying to press the topping volume of screed down (Pos. 11). Sometimes it is necessary to repeat the procedure 2 -3 times in order to achieve smooth and flat surface (Pos. 12).

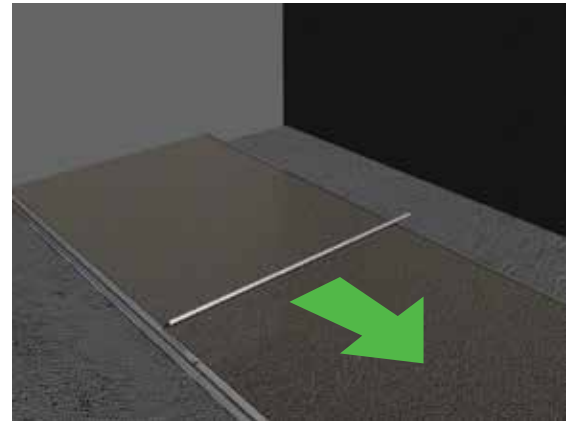
After the accomplishment of screed levelling it is necessary to water the screed and to finish the surface with darby with attached cloth wool. The darby should be applied with round movements without applying the excessive force (Pos. 12). In places where the surface has damages and teases, repair mortar (gesso) could be applied.



Pos. 13 ECOCON screed after second levelling

After pouring mixture it is necessary to spread it uniformly throughout the square and leave for 40 - 45 minutes.

After 40-45 minutes the first levelling should be done by pushing the topping mass of aerated ECOCON Nanocrete to the neighbouring square (Pos. 10)



Pos. 12 Second levelling of ECOCON screed



Pos. 14 Finishing of ECOCON screed with darby

The PU foam board should be cut in the level of screed alongside the screed perimeter.

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4.36 Curing

ECOCON Nanocrete has to be effectively cured if maximum surface strength, maximum resistance to surface abrasion and low impermeability of the concrete are to be attained, and the development of drying shrinkage cracks is to be avoided or minimised. Effective curing also reduces the effect of differential shrinkage, and therefore curling, by delaying the effect of differential drying until the ECOCON Nanocrete is better able to resist its effects.

Curing should start as soon after final finishing as practicable, and should be done by one of the following methods:

- ponding
- covering with thick hessian or similar clean moisture-retaining and non-staining material that is kept wet
- covering with polyethylene or similar vapour-proof material in large sheets, sealed at the edges of the finish and at the side laps of the sheeting.

To prevent surface damage to trowelled and other finishes, it may be necessary to suspend the coverings described in (b) and (c) above, clear of the surface until such time as they can be placed directly onto the surface. Care should be taken to prevent wind tunnelling under coverings.

Curing should continue for at least 7 days. In hot weather, 2-3 times daily ponding are highly recommended. Hot weather may be deemed to be conditions in which the "average" ambient temperature rises above 30°C, where "average" is defined as the arithmetic mean of the maximum and minimum ambient temperatures recorded on site within a period of 24 hours.

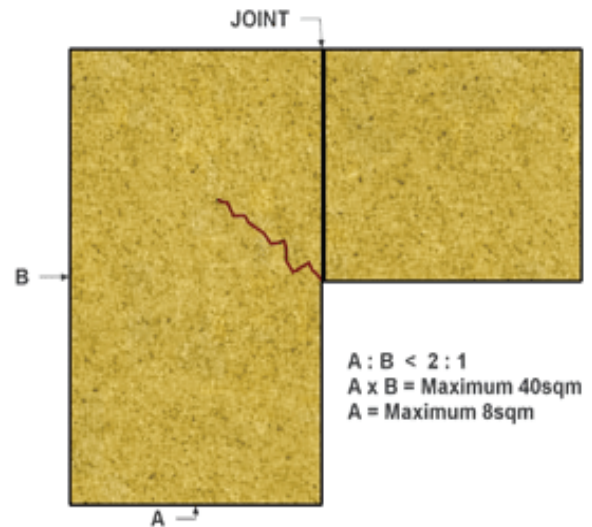
4.3.7 Arrangement fo expansion joints

Guidance for installation & spacing of joints in screed is specified in BS-8204-2.

Expansion joints should be included in the floor if the final floor finish is to be a ceramic tile or similar. These will be required if the floor area is greater than 40m² and then the floor area should be divided into bays with 8m being the maximum length as shown above (Pos. 15).

Other types of joints may be present within the floor structure required as part of the structural design of the floor such as day joints.

With screeded floors, crack inducers may be included in the top surface of the screed these are a 5mm mechanical saw cut in the top surface of the screed.



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6.0 INSPECTION

The work should be inspected during progress and after completion, attention being paid to the following points:

- a) materials
- b) preparation of the base, where the finish is to be bonded
- c) mixing and pouring
- e) correct levelling and finishing
- f) correct curing

6.1 INSPECTION TESTS

After completion of the work, the following tests should be carried out:

6.1.1 Levels and surface flatness

Deviation from datum may be checked with conventional survey instruments.

A straightedge at least 3 m long can be used to check surface regularity. It should be supported on two rigid blocks of identical height (say 15 mm) placed 3 m apart on the screed surface. Deviations of the screed surface from the straight line joining the points at which the blocks are placed should be not more than 3 mm.

6.1.2 Adhesion between ECOCON screed and a base

The adhesion between the screed and the base should be examined by tapping the surface with a rod or a hammer, a hollow sound indicating lack of adhesion.

Tests to check the adhesion of a screed to its base should be made after 5-7 days of work accomplishment when the maximum effect of drying shrinkage has taken place.

6.1.3 Curling and lipping of toppings and screeds

ECOCON screed should be considered unsatisfactory if it has lifted by a visible or measurable amount at joints and cracks, to the extent that there is a risk of fracture under imposed loads.

6.2 ASSESSMENT OF CRACKS AND CURLING

Cracks should be assessed in relation to the area involved and the flooring to be applied, and likely future movement. Fine cracks are not normally detrimental to any applied flooring and do not need filling; wider cracks may need filling or other remedial work.

Loss of adhesion does not necessarily mean that the ECOCON screed is unsatisfactory. It may, however, be critical in the case of structural toppings.

Those areas of the ECOCON screed that are considered to be unsatisfactory should be isolated by sawing, removing and re-laying. Care should be taken to minimise the effect that any cutting-out operations may have on the adhesion of adjacent parts of the screed.