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Note: Test marked with * is in the scope of ENAC's Accreditation.

Bellaterra : : 02nd March 2020

Dossier number : : **19/21099-3620**

Petitioner's reference: : **TOPCRET**
Gran Via de les Corts Catalanes 828
08016 Barcelona

TEST REPORT

Sample no.: 19/3620

RECEIVED MATERIAL:

On december 12th, 2019 Applus Laboratories received a sample of liquid-applied water impermeable membrane , with the next reference:

BASE ELÁSTICA

ENSAYOS SOLICITADOS:

Liquid-applied water impermeable products for use beneath ceramic tiling bonded with adhesives, UNE-EN 14891:2012+AC:2013 and UNE-EN 14891:2017

1- Water impermeability, A.7(*) EN 14891:2012+AC:2013
2- Initial tensile adhesion strength, A.6.2
3- Tensile adhesion strength after water contact, A.6.4
4- Tensile adhesion strength after heat ageing, A.6.5
5- Tensile adhesion strength after freeze-thaw cycle, A.6.6
6- Tensile adhesion strength after contact with lime water, A.6.9
7- Crack bridging ability, A.8.2
8- Determination water penetration under indirect pressure following the basic parameters of the standard UNE-EN 12390-8

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TEST DATE: from 11/12/2019 to 25/02/2020

RESULTS: See attached pages.

Firmado digitalmente por JUAN MARTINEZ EGEA

Responsible for Construction Mat.
LGAI TECHNOLOGICAL CENTER, S.A.

Firmado digitalmente por RAUL MARTIN GARCIA

Responsible Technician
LGAI Technological Center, S.A.

Notified Body nº 0370 for CE Marking; System 3; UNE-EN 14891:2012+AC:2013

LGAI Technological Center S.A. Inscrita en el registro Mercantil de Barcelona, Tomo 35.803, Folio1, Hoja Nº B-266.627 Inscripción 1ª C.I.F. : A-63207492

RESULTS:

Application instructions indicated by the petitioner:

- 2 layers 1,6 kg/m^2 separated by 2 hours
- Mix ratio: 24,8 % Component B

1- Water impermeability, A.7(*) EN 14891:2012+AC:2013

The liquid water impermeable product is applied to the surface of three concrete slabs in accordance with the manufacturer's instructions, using a primer if required.

The three coated concrete slabs are dried under standard conditions (23±2)ºC and (50±5)% R.H.

Before starting the waterproofing test the specimens were weighed and then placed in the pressure equipment and subjected to a water pressure of 150 kPa for seven days. The pressure was kept constant throughout the test.

Specimen	Weight increase (g)	Final Result
1	3	**No visual penetration of water and increase of weight ≤ 20 g**
2	2	
3	2	

Uncertainty associated with weight gain: ± 4g

Tensile adhesion strength tests:

Adhesion tests were carried out with a tile adhesive classified C2-S1 (20% water) classified according to EN 12004. Tile adhesive was placed over the membrane according to EN 14891:2017 after 24 hours.

Before the bond strength was determined, the sample surface had been cut through to the surface of the concrete slab, around the perimeter of each tile.

2- Initial tensile adhesion strength, A.6.2

Specimen	Tensile Strength (N/mm²)	Failure pattern
1	0,98	Cohesion Failure of membrane
2	1,23	
3	1,07	
4	1,02	
5	1,08	
6	1,02	
7	0,94	
8	1,03	
9	1,00	
10	1,06	
Mean	**1,0 N/mm²**	

3- Resistencia a la adherencia tras inmersión en agua, UNE-EN 14891:2017 Apdo. A.6.4

Specimen	Tensile Strength (N/mm²)	Failure pattern
1	0,83	Cohesion Failure of membrane
2	0,73	
3	0,80	
4	0,66	
5	0,76	
6	0,82	
7	0,65	
8	0,77	
9	0,84	
10	0,76	
Mean	**0,8 N/mm²**	

4- Tensile adhesion strength after heat ageing, A.6.5

Specimen	Tensile Strength (N/mm²)	Failure pattern
1	1,38	Cohesion Failure of membrane
2	1,15	
3	1,27	
4	1,18	
5	1,21	
6	1,29	
7	1,33	
8	1,36	
9	1,28	
10	1,19	
Mean	**1,3 N/mm²**	

5- Tensile adhesion strength after freeze-thaw cycle, A.6.6

Specimen	Tensile Strength (N/mm²)	Failure pattern
1	0,83	Cohesion Failure of membrane
2	0,82	
3	0,95	
4	0,85	
5	0,85	
6	0,91	
7	0,73	
8	0,79	
9	0,84	
10	0,91	
Mean	**0,8 N/mm²**	

6- Tensile adhesion strength after contact with lime water, A.6.9

Specimen	Tensile Strength (N/mm²)	Failure pattern
1	0,62	Cohesion Failure of membrane
2	0,54	
3	0,68	
4	0,54	
5	0,56	
6	0,59	
7	0,54	
8	0,51	
9	0,60	
10	0,57	
Mean	**0,6 N/mm²**	

7- Crack bridging ability, A.8.2

Specimen no.	Crack Bridging at 23ºC (mm)
1	2,33
2	2,18
3	2,27
Mean	**2,26**

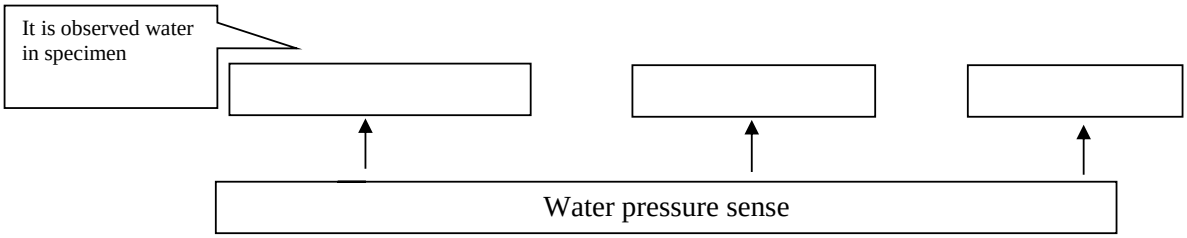
8- Determination water penetration under indirect pressure following the basic parameters of the standard UNE-EN 12390-8

INDIRECT PRESSURE TEST: 5 Bar for 3 days.

Specimens 3 cm thick have been used. The diameter of the test pieces was 15 cm.

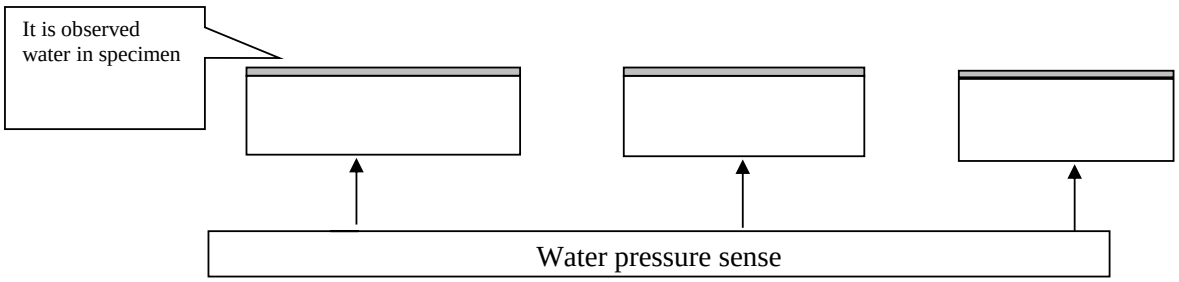
The appearance of the first dampness and water in the test pieces is observed on the opposite side, waterproofed.

- Standard speciemen (without application):



Visual effects			
Specimen no.	**1**	**2**	**3**
Time to wet surface	4 h 10 min	4 h 05 min	4 h 35 min
Time to observe water over surface	4 h 15 min	4h 25 min	5 h 00 min

- Test specimen (with sample):



Visual effects			
Specimen no.	**1**	**2**	**3**
Time to wet surface	23h 15 min	23h	23h 25 min
Time to observe water over surface	24h 30 min	24h 30 min	24h 15 min