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Bellaterra	:	16th December, 2016
Report Nº	:	16/31706728
Petitioner's reference	:	**ISOMAT S.A.** **BUILDING CHEMICALS AND MORTARS** And on its behalf, Mr. Georgios Syriopoulos 17th km Thessaloniki – Ag. Athanasios Road GR 570 03 Agios Athanasios

TEST REPORT

MATERIAL RECEIVED

Sample is received on 16th September, 2016, referenced by the Petitioner as:

ISOFLEX-PU 500

Remarks: The sampling of the material received was performed by the petitioner

TESTS REQUESTED BY THE PETITIONER

- *Geosynthetic barriers.Test method for determining the resistance to roots according to Standard s/n UNE CEN/TS 14416 EX: 2014.*

DATE OF TESTS PERFORMANCE: From 20.09.16.16 to 12.12.16

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PROCEDURES AND RESULTS

DETERMINATION THE RESISTANCE TO ROOTS

Test method according to standard UNE CEN/TS 14416 EX: 2014.
- Geosynthetic barriers.Test method for determining the resistance to roots

Test conditions:

- Test specimen: Circular approx. 20 cm diameter.
- Number of test specimens: 3
- Test period: 8 weeks
- Seeds: Lupinus Albus.

Note: To ensure rapid growth of plants, seeds were germinated before being planted

Test Procedure:

According to the indications of the standard, emptying and inspection after 8 weeks according to section 5 UNE CEN/TS 14416 EX:2014 and prior verification that the roots penetrated the sample of bitumen.

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Results:

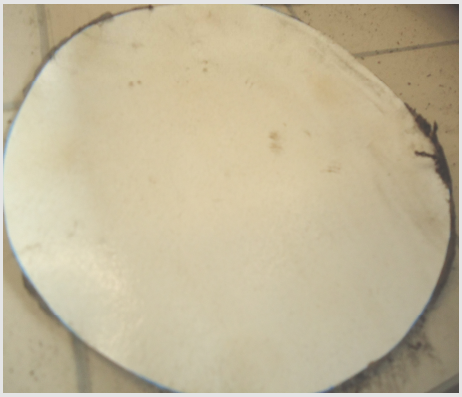
After the test, upper and lower surface of the test sheet are inspected.
No roots penetration into or through of the sheet or the joint area is observed in either of the 3 test specimens.

*Upper surface of the test specimen **ISOFLEX-PU 500***





*Lower surface of the test specimen **ISOFLEX-PU 500***



Firmado digitalmente
por Marina Curto Diego

IPE Manager
Materials & Process
LGAI Technological Center S.A

The results refer exclusively to the sample, product or materials delivered to the laboratory, as indicated in the section pertaining to the description of the material received, and tested under the conditions stated in this test report.

Applus+ guarantees that this task has been carried out in compliance with the requirements of our Quality and Sustainability System, and furthermore, that the contractual terms and legal regulations have been complied with.
In the framework of our improvement programme, we would appreciate any comments you may deem appropriate. These should be addressed to the manager who signs this document, or to the Quality Director of Applus+ at the following address: **satisfaccion.cliente@applus.com**.