



MASUKO Material
lab-test results
for polyester foam concrete



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T-381/2008

Expert Appraisal

about the characteristics of

LASSO LTD's polystyrene concrete

Customer's name: **LASSO LTD**
address: **1026 Budapest, Szilágyi E. fasor 67**

Customer's executive: **Károly Bus**
Dr Csanád Némethi

Order date: **25.11.2008**

This Expert Appraisal comprises 4 pages and 6 enclosures

Budapest
24 June 2009

KBiA-VII-1-19.05.2009

1. BACKGROUND

LASSO LTD manufactures various types of polystyrene concrete and has ordered an inspection regarding the technical characteristics of the products.

The products are in a patent pending status.

We draw up Test Reports about the inspections, and the results are summarised and evaluated in an Expert Appraisal.

2. DETAILS

For the product inspection, the following polystyrene concrete types have been identified to provide guidance:

- polystyrene foam concrete 100
- polystyrene foam concrete 200
- polystyrene foam concrete 300

The type numbers refer to the cement content of 1 cu.m product. The manufacturer has furthermore supplied the test specimens required for inspecting the products.

3. INSPECTIONS

In the framework of the contract, we have carried out the following tests on the polystyrene concrete specimens:

- compressive strength
- vapour diffusion resistance
- water absorption
- water tightness
- thermal conductivity
- fire safety characteristics

We have performed the inspections in ÉMI Nonprofit Kft.'s laboratories, and the method and results of the tests are described in the Test Reports attached as enclosures.

Enclosure 1: Test Report about the compressive strength of PS concrete types, 20.02.2009.

Enclosure 2: Test Report about the vapour diffusion characteristics of PS concrete types, 31.05.2009.

Enclosure 3: Test Report about the water absorption of PS concrete types, 26.03.2009.

Enclosure 4: Test Report about the water tightness of PS concrete types, 26.03.2009.

Enclosure 5: Test Report about the thermal conductivity of PS concrete types, 04.03.2009.

Enclosure 6: Test Report about the fire safety characteristics of PS concrete types, 11.06.2009.

4. TEST RESULTS

On the basis of the laboratory tests carried out, the inspected technical characteristics of polystyrene concrete types are as follows:

➤ Compressive strength (N/sq.mm)	7 days	28 days
• product 100	0.09	0.13
• product 200	0.26	0.36
• product 300	0.31	1.32
➤ Vapour diffusion coefficient (kg/Pa sq.m sec)		
• product 100	3.51·10 ⁻¹⁰	
• product 200	3.69·10 ⁻¹⁰	
• product 300	3.04·10 ⁻¹⁰	
➤ Vapour diffusion factor (μ)	10 to 12	
➤ Water absorption after 24 hours (m/m%)		
• product 100	3.20	
• product 200	2.78	
• product 300	1.69	
➤ Water tightness		
• product 300 at a pressure of 1 bar	water tight	
➤ Thermal conductivity λ (W/mK)		
• product 100	0.056	
• product 200	0.070	
• product 300	0.082	
➤ Fire safety classification in accordance with the Standard MSZ EN 13501-1		
• product 100	B-s1, d0	
• product 200	A2-s1, d0	
• product 300	A2-s1, d0	

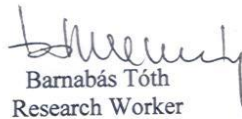
5. ASSESSMENT

The test results of the inspected polystyrene concrete types make an influence on the applicability of the products.

In envisaging the use of and applying polystyrene concrete types, the reported test results should and shall be taken into consideration.

Budapest, 24.06.2009

Expert Appraisal drawn up by


Barnabás Tóth
Research Worker

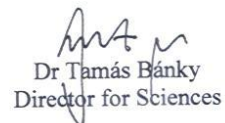
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Építészeti Minőségellenőrző
Innovációs Nonprofit Kft.
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