



ÉMI NON-PROFIT LIMITED LIABILITY COMPANY FOR  
QUALITY CONTROL AND INNOVATION IN BUILDING

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ÉMI NON-PROFIT LIMITED LIABILITY COMPANY FOR QUALITY CONTROL AND INNOVATION IN BUILDING  
ÉMI SOCIÉTÉ À BUT NON LUCRATIF POUR LE CONTRÔLE DE QUALITÉ ET L'INNOVATION DU BÂTIMENT, RESPONSABILITÉ LIMITÉE  
ÉMI NON-PROFIT GESELLSCHAFT FÜR QUALITÄTSKONTROLLE UND INNOVATION IM BAUWESEN MIT BESCHRÄNKTER HAFTUNG

A-59/2021

**NMÉ**  
**NATIONAL TECHNICAL ASSESSMENT**

**Product name:** Manti® Ceramic Technological M

**Intended use of the product:** Thermal protection coating of roof waterproofing systems and natural stone, concrete, brick walls, gypsum and cement plasters and coated metal sheet surfaces

**Product area:** Thermal insulation products. Composite insulating kits/systems.

**Manufacturer of the product:** Műszer Automatika Kft.  
2040 Budaörs, Komáromi u. 22.

**NMÉ valid from \*:** 03. 09.2021



Zoltán Budavári  
Head of the Technical  
Assessment Office

The National Technical Assessment consists of 7 pages including 0 numbered Annexes.

\* The validity of the NMÉ is subject to certain conditions. The validity of the NMÉ shall be checked on the website of the ÉMI Non-profit Ltd. (www.emi.hu).

Project number: É1-M203X-23154-2021  
DK-M999X-23495-2021

**I. LEGAL BASES AND GENERAL CONDITIONS**

1. This NMÉ has been issued by the ÉMI Non-profit Ltd. for Quality Control and Innovation in Building based on
  - Government Decree No. 275/2013 (VII. 16.) on the detailed rules relating to the planning and installation of construction products into construction works and the verification of performance during this process,
  - the designation of the Hungarian Trade Licensing Office (MKEH-128/22/2013/FHÁ), as well as
  - the data detailed in Performance Assessment Report No. A-59/2021 dated on 03.09.2021.
2. The holder of the NMÉ is the manufacturer of the construction product.
3. The holder of the NMÉ is not allowed to assign the NMÉ to third party. The NMÉ is valid exclusively for products manufactured in the indicated production plants.
4. The manufacturer of the product or their authorized representative shall notify if the important characteristics of the product, the quality of its raw materials or the production circumstances change and shall apply for the revision and, if necessary, for the amendment of NMÉ.
5. The ÉMI Non-profit Ltd. withdraws the NMÉ for the product based on the request of the manufacturer or their authorized representative, based on the decision of the market surveillance authority or at the end of co-existence period, as stipulated in the Regulation No. 305/2011/EU Article 17 (5) of the European Parliament and Council, of the harmonized standard covering the construction product subject of this NMÉ.
6. ÉMI Non-profit Ltd. shall issue the NMÉ in Hungarian, and on subsequent request of the manufacturer or their authorized representative for an additional fee in English language. The legal basis is the Hungarian version of the NMÉ.
7. The NMÉ may only be copied or published by means of other data medium in its entirety. Extracts are only allowed on the prior written approval of ÉMI Non-profit Ltd. The fact of publishing extracts shall be indicated. Text and figures of advertising materials cannot be contrary to the content of the National Technical Assessment and cannot give rise to misunderstanding.
8. The NMÉ will not replace other permits and certificates (e.g. environment protection and property protection, building authorities' permits) necessary for distribution, installation and use of the product specified by separate provision of law and the documents relating to the constancy of product performance (e.g. product certificate, factory production control certificate, declaration of performance).
9. The declaration of performance issued on the basis of the NMÉ shall not entitle either the manufacturer or their authorized representative to use CE conformity marking on the product or on its packaging or accompanying documents.
10. The NMÉ does not state the fitness for purpose of the product for the particular use. It provides only performance values for essential characteristic as a basis for the declaration of performance. Based on the performances specified in the declaration of performance issued by the manufacturer the product can be installed into construction works in which it complies with the expected technical performance.



## II. SPECIFIC CONDITIONS OF THE NATIONAL TECHNICAL ASSESSMENT

### 1. DATA

#### 1.1. Manufacturing site of the product

Műszer Automatika Kft.  
9500 Celldömölk, Tó u.4.

#### 1.2. Description of the product

Manti® Ceramic Technological M is a water-based pore-sealed thermal protection coating which can be applied as a solvent-free paint in a thin layer and forms a stable coating containing micro-sized vacuum ceramic spheres. The coated surface formation reduces heat load against solar radiation, mainly due to its reflective and infrared emission capabilities. It forms a uniform decorative, aesthetic coating with a waterproofing effect.

Main properties of the raw materials of the product:

Properties	Value	Assessment method
Raw material: Manti® Ceramic Technological M		
Appearance [-]	white, creamy, easy-to-mix suspension	by visual inspection
Layer thickness /layer [μm]	700	MSZ EN ISO 2808:2020
Non-volatile matter content [% (m/m)] (120 °C)	61,92	MSZ EN ISO 3251:2019
Residue from ignition [% (m/m)] (600 °C-on)	41,28	MSZ EN ISO 14680-2:2006
Organic matter content [% (m/m)]	21,6	calculated
Organic volatile compound content (V.O.C.) [g/l]	140	MSZ EN ISO 11890-2:2020
Density [g/cm <sup>3</sup> ] (20 °C-on)	0,940 ± 0,01	MSZ ISO 2811-1:2016
pH value [-] (In a 10% aqueous suspension)	9,1	MSZ ISO 787-9:2019
Apparent viscosity (25°C) -at 2.5 rpm, [mPa.s] -at 20 rpm, [mPa.s]	300 000 55 000	MSZ ISO 2555:2018
Drying time [hour] (complete drying)	24	MSZ ISO 9117-1:2009
Conditioning time [day]	28	MSZ EN 23270:1993

#### 1.3. Description of the intended use of the product

Thermal protection coating of roof waterproofing systems and natural stone, concrete, brick walls, gypsum and cement plasters and coated metal sheet surfaces.

## 2. ESSENTIAL CHARACTERISTICS, PERFORMANCE AND ASSESSMENT METHODS

### 2.1. Mechanical resistance and stability

### 2.2. Safety in case of fire

Essential characteristics	Performance	Assessment method
Product code: Manti® Ceramic Technological M		
Reaction to fire class [-]	E*	MSZ EN 13501-1:2019
Reaction to fire class of roofs exposed to external fire	NPD**	MSZ EN 13501-5:2019

\* Without air gap, on a substrate surface of A2-s1,d0 at least

\*\* NPD – No performance determined

### 2.3. Hygiene, health and the environment

Essential characteristics	Performance	Assessment method
Product code: Manti® Ceramic Technological M		
Water vapour permeability - V: Air layer thickness equivalent [g/m <sup>2</sup> /day]; - S <sub>d</sub> value [m] (2 mm coating)	10,09 2,08	MSZ EN ISO 7783-2:2000 (withdrawn standard)
Vapour diffusion resistance coefficient [μ]	297,4	
Water permeability, w [kg/m <sup>2</sup> h <sup>0.5</sup> ]	0,0754	MSZ EN 1062-3:2009
Wet abrasion resistance, layer reduction, [Δ μm] (after 200 cycles)	70	MSZ EN ISO 11998:2006

### 2.4. Safety and accessibility in use

Essential characteristics	Performance	Assessment method
Product code: Manti® Ceramic Technological M		
Bond strength [N/mm <sup>2</sup> ] (perpendicular to the surface, on concrete specimen)	1,1	MSZ EN ISO 4624:2016
Crack bridging ability [μm]	>100 (class A1)	MSZ EN 1062-7:2004 method "A"
Brightness: at 60°: at 85°:	2,1 0,4	MSZ EN ISO 2813:2015

### 2.5. Protection against noise

## 2.6. Energy economy and heat retention

Essential characteristics	Performance	Assessment method
Product code: Manti® Ceramic Technological M		
Reflectance of thermal protective coating: Layer thickness 500 µm 450-1050 (nm)	87,3-91,7 %	ASTM E903 - 12
Layer thickness 1000 µm 450-1050 (nm)	88,4-92,7 %	

## 2.7. Sustainable use of natural resources

Essential characteristics	Performance	Assessment method
Product code: Manti® Ceramic Technological M		
Brightness: at 60°: at 85°: (after 250 hours Xenontest)	2,2 0,6	MSZ EN ISO 2813:2015
Xenon lamp aging (250 hours)	no change is visible	MSZ EN ISO 16474-1,-2:2014 „A” method
Accelerated heat aging process 5 x 8 hours 70°C	no change is visible	MSZ 9640-16:1984 EOTA Technical Report TR-011
Bond strength [N/mm²] (perpendicular to the surface, on concrete specimen, after 250 hours Xenontest)	1,3	MSZ EN ISO 4624:2016

## 3. REQUIREMENTS FOR THE ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE

### 3.1. System(s) for the assessment and verification of constancy of performance)

On the basis of Commission Decision 99/91/EC and according to Annex V of the European Parliament and Council Regulation No. 305/2011/EU:

#### System (3)

### 3.2. Tasks of the manufacturer

#### 3.2.1 Factory production control (FPC)

The manufacturer shall develop, document and operate an FPC system that ensures that the performance of the products to be installed meets continuously the values specified in the present NMÉ in a verifiable way.

If the manufacturer's quality management system complies with standard EN ISO 9001 and their system is complemented with the requirements in relation to factory



production control stipulated in this NMÉ, this factory production control system can be considered to have met the requirements.

Regarding the product the manufacturer shall develop, operate and control a factory production control system, which ensures the constancy of performance of the product.

The factory production control system shall include:

- the tasks and their responsible persons required in the procedure,
- the rules regarding the review of the qualifications and training of personnel, production and testing equipment, raw materials, supplied products, manufacturing process, handling of emerging non-compliances and complaints and the review of the factory production control system by the manufacturer,
- evaluation of the results of tests made in the framework of factory production control by comparing with the results of the performance assessment,
- tests to be carried out in the scope of the factory production control, according to the control plan of the factory control; requirements concerning the frequency and test methods in accordance with the table below:

Product characteristics tested	Test method	Minimum frequency of tests
Density	MSZ ISO 2811-1:2016	Per production
pH	MSZ ISO 787-9:2019	
Non-volatile matter content	MSZ EN ISO 3251:2019	
Bond strength	MSZ EN ISO 4624:2016	Once every six months
Reaction to fire class [-]	MSZ EN 13501-1:2019	In case of change of raw material

### 3.2.2. Issuing the declaration of performance

The declaration to be issued by the manufacturer must contain the following data detailed in points:

- the identification number of the declaration,
- the individual identification code of the product type,
- the intended use(s) of the construction product specified by the manufacturer,
- the name, the registered trade name and the registered trade mark as well as the mailing address of the manufacturer,
- optionally the name and mailing address of the authorized representative,
- system or systems in relation to the assessment and verification of constancy of performance of the construction products,
- the name of the organization issuing the NMÉ and the identification number of the NMÉ,
- the performance values given in section 2,
- the following sentences:
  - The performance of the product specified in section 1.2 of NMÉ No. A-59/2021 complies with the performance specified in the declaration.
  - Exclusively the manufacturer (or the authorized representative) is responsible for issuing this declaration of performance.
- person signing in the name and on behalf of the manufacturer (or the authorized representative) (name/position),
- place/date/signature.

### 3.3. Tasks of the designated testing laboratory

#### 3.3.1. Assessment of the performance of the product

This NMÉ can be considered as the assessment of the performance of the product in accordance with point 1.6 in Annex V of the European Parliament and Council Regulation No. 305/2011/EU. Therefore, the designated testing laboratory shall not undertake this task.

### 4. ANNEXES

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The NMÉ prepared by:



Brigitta Balogh  
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Professionally checked and approved by:



Péter Solyomi  
product manager