

Test reports
MasterSeal Roof 2111

European Technical Assessment

ETA 18/0296
of 15.12.2020



General part

Technical Assessment Body issuing the ETA: ITeC

ITeC has been designated according to Article 29 of Regulation (EU) No 305/2011 and is member of EOTA (European Organisation for Technical Assessment)

Trade name of the construction product

MasterSeal Roof 2111

Product family to which the construction product belongs

Product Area Code: 03
Liquid applied roof waterproofing kit based on polyurethane.

Manufacturer

BASF Coatings GmbH
372 Donnerschweer
D-26126 Oldenburg
Germany

Manufacturing plant(s)

BASF Coatings GmbH
372 Donnerschweer
D-26126 Oldenburg
Germany

This European Technical Assessment contains

7 pages including 2 annexes which form an integral part of this assessment.

This European Technical Assessment is issued in accordance with Regulation (EU) 305/2011, on the basis of

EAD 030350-00-0402.

This ETA replaces

ETA 18/0296 issued on 02.09.2019.

General comments

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may be made, with the written consent of issuing Technical Assessment Body. Any partial reproduction has to be identified as such.

Specific parts of the European Technical Assessment

1 Technical description of the system

MasterSeal Roof 2111 is an in-situ applied liquid roof waterproofing kit based on polyurethane manufactured by BASF Coatings GmbH, which consists of the following components:

Components	Trademark	Consumption	Thickness
Primer	MasterSeal P 770	0,25-0,4 kg/m ²	0,2 mm - 0,35 mm
Waterproofing membrane	MasterSeal M811	≥ 2,3 kg/m ²	Min. 1,9 mm
Coating	MasterSeal TC 269	0,15-0,20 kg/m ²	100 µm - 200 µm

Table 1: Components and application data of MasterSeal Roof 2111 system.

For an adequate adhesion of the waterproofing layer, a primer is required.

The minimum thickness of the assembled waterproofing kit is 2 mm.

As an assembled system, these components form a homogeneous seamless roof waterproofing kit. The system build-up of the roof waterproofing kit MasterSeal Roof 811 is given in Annex 1.

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

The kit is used for the waterproofing of roof surfaces against penetration of atmospheric water.

The kit is applied on concrete support. In the technical documents the manufacturer gives information about the substrate pre-treatment, if needed.

The provisions made in this ETA are based on an assumed working life of at least 25 years for the system MasterSeal Roof 2111. These provisions are based upon the current state of the art and the available knowledge and experience.

The indications given on the working life cannot be interpreted as a guarantee given by the producer but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

The levels of use categories are given in Annex 1, according to EAD 030350-00-0402. These categories are only valid if the liquid applied roof waterproofing kit is used in compliance with the specifications and conditions given in Annex 2 and the installation instructions of the manufacturer stated in the technical documents.

3 Performance of the system and reference to the methods used for its assessment

Performance of MasterSeal Roof 2111 related to basic requirements for construction works (hereinafter, BWR) were determined according to EAD 030350-00-0402. Essential characteristics of the LAWRK system are indicated in table 2.

Essential characteristic	Performance
<i>BWR 2 – Safety in case of fire</i>	
External fire performance	B_{ROOF} (t2)¹
Reaction to fire	Not assessed
<i>BWR 3 – Hygiene, health and the environment</i>	
Resistance to water vapour	$\mu = 2519$
Watertightness	Pass (the assembled system remains watertight)
Content, emission and/or release of dangerous substances	Not assessed
Resistance to wind loads	Delamination strength: 1390 kPa (≥ 50 kPa)
Resistance to mechanical damage (perforation)	P4 (I4, L4)
Resistance to fatigue movement	W3
Resistance to low and high surface temperatures.	Resistance to the effects of low temperatures: I4 (P4). Resistance to the effects of extreme low temperatures TL4 (- 30 °C): test passed. Resistance to the effects of high temperatures TH4 (+ 90 °C): L4 (P4)
Resistance to ageing media	W3, S (severe) Resistance to heat ageing: - TL4 (- 30 °C): I4 (P4) - Resistance to fatigue movement at - 10 °C: test passed. - Tensile properties: see table 3. Resistance to UV radiation + moisture ageing: - I4 (P4) - Tensile properties: see table 3. Resistance to water ageing: - L4 (P4) - Resistance to wind loads (delamination strength): 980 kPa (≥ 50 kPa)
Resistance to plant roots	Not assessed
Effects of variations in kit components and site practice	Not assessed
Effect of day joints	Not relevant
<i>BWR 4 - Safety and accessibility in use</i>	
Slipperiness	0,39

Table 2: Performance of MasterSeal Roof 2111.¹ System tested on plasterboard (12,5 mm, 680 kg/m³).

Conditions of testing	Tensile strength (MPa)	Elongation at break (%)
Before ageing	4,6	67
After heat ageing	4,3	43
After UV radiation + moisture ageing	5,2	33

Table 3: Tensile properties of MasterSeal Roof 2111.

The verification of durability and serviceability is part of testing the essential characteristics. Durability and serviceability are only ensured if the specifications of intended use according to Annex 2 and specifications of technical documents of the manufacturer are kept.

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the European Commission² Decision 98/599/EC, amended Decision 2001/596/EC³, the system of AVCP (see EC delegated regulation (EU) No 568/2014 amending Annex V to Regulation (EU) 305/2011) given in the following table applies.

System	Intended use(s)	Level or class	System
MasterSeal Roof 2111	Liquid applied roof waterproofing kit subjected to fire regulations	A1, A2, B, C, D, E (*)	3
	Liquid applied roof waterproofing kit not subjected to fire regulations	Any	3

(*) Products/materials, as the components of MasterSeal Roof 2111, without a clearly identifiable stage in the production process that results in an improvement of the reaction to fire classification.

Table 4: Applicable AVCP system.

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

All the necessary technical details for the implementation of the AVCP system are laid down in the *Control Plan* deposited with the ITeC⁴, with which the factory production control shall be in accordance.

Any change in the manufacturing procedure which may affect the properties of the system shall be notified and the necessary type-testing revised according to the *Control Plan*.

Issued in Barcelona on 15 December 2020 by the Catalonia Institute of Construction Technology.

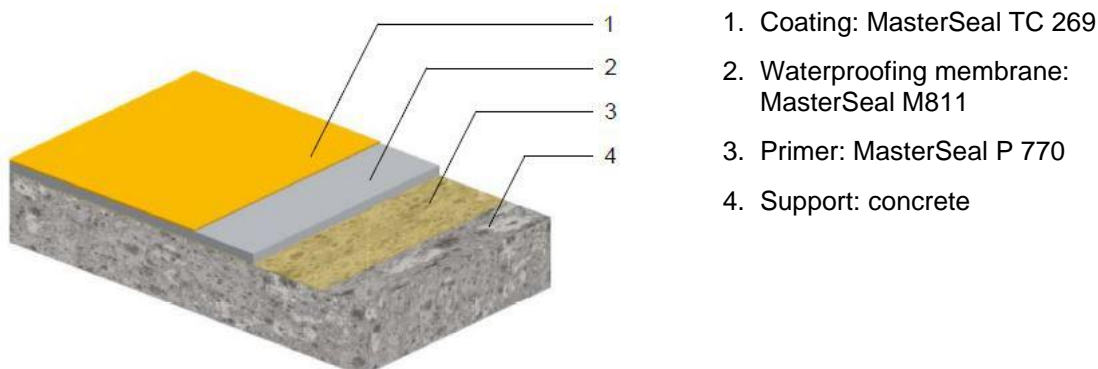


Ferran Bermejo Nualart
Technical Director, ITeC

² Official Journal of the European Union (OJEU) L287 of 24/10/1998.

³ Official Journal of the European Union (OJEU) L209 of 02/08/2001.

⁴ The *Control Plan* is a confidential part of the ETA and is only handed over to the notified certification body involved in the assessment and verification of constancy of performance.

ANNEX 1: Classification of the roof waterproofing system MasterSeal Roof 2111**Figure 1:** Components of the LARWK MasterSeal Roof 2111.

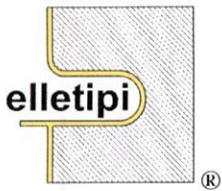
Minimum consumption	See Table 1
Minimum thickness of the assembled kit	2 mm
Classification to use categories	
Working life	W3 (25 years)
Climatic zone	S (severe)
Resistance to mechanical damage (perforation)	P4
Roof slope	S1-S4
Maximum temperature	TH4 (+ 90°C)
Minimum temperature	TL4 (- 30°C)
Performances of the system	
Reaction to fire	Not assessed
External fire performance	B _{ROOF} (t2)
Water vapour diffusion resistance factor	$\mu = 2519$
Watertightness	Pass
Release of dangerous substances	Not assessed
Root resistance	Not assessed
Resistance to wind loads	≥ 50 kPa
Slipperiness	0,39

Table 5: Level of use categories.

ANNEX 2: INSTALLATION

The levels of use categories and the performance of the roof waterproofing can be assumed only if the installation is carried out according to the installation instructions stated in the technical file of the manufacturer, in particular taking account of the following points:

- Installation by appropriately trained personnel,
- Installation of only those components which are marked components of the kit,
- Installation with required tools,
- Precautions during installation,
- Inspecting the roof surface for cleanliness and correct preparation,
- Inspecting compliance with suitable weather and curing conditions,
- Ensuring a thickness of the assembled waterproofing kit of at least 2 mm by processing of appropriate minimum quantities of material,
- Inspections during installation and of the finished product and record of the results.



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Laboratorio Materiali da Costruzione autorizzato con Dec. n. 0000006 del 27/01/2015, art. 59 del D.P.R. 380/2001, Circolare Ministeriale 7617/STC
Laboratorio Geotecnico autorizzato con Dec. n. 6572 del 07/10/2014, art. 59 del D.P.R. 380/2001, Circolari Ministeriali 7618/STC
Organismo Notificato n° 1308 (DM 826149 del 22/03/2004 del Ministero delle Attività Produttive) rinnovata ai sensi della circ. 305/2011, DM 156/2003

CUSTOMER: BASF COATINGS GMBH
ADDRESS: Donnerschweer Str. 372 - 26123 Oldenburg

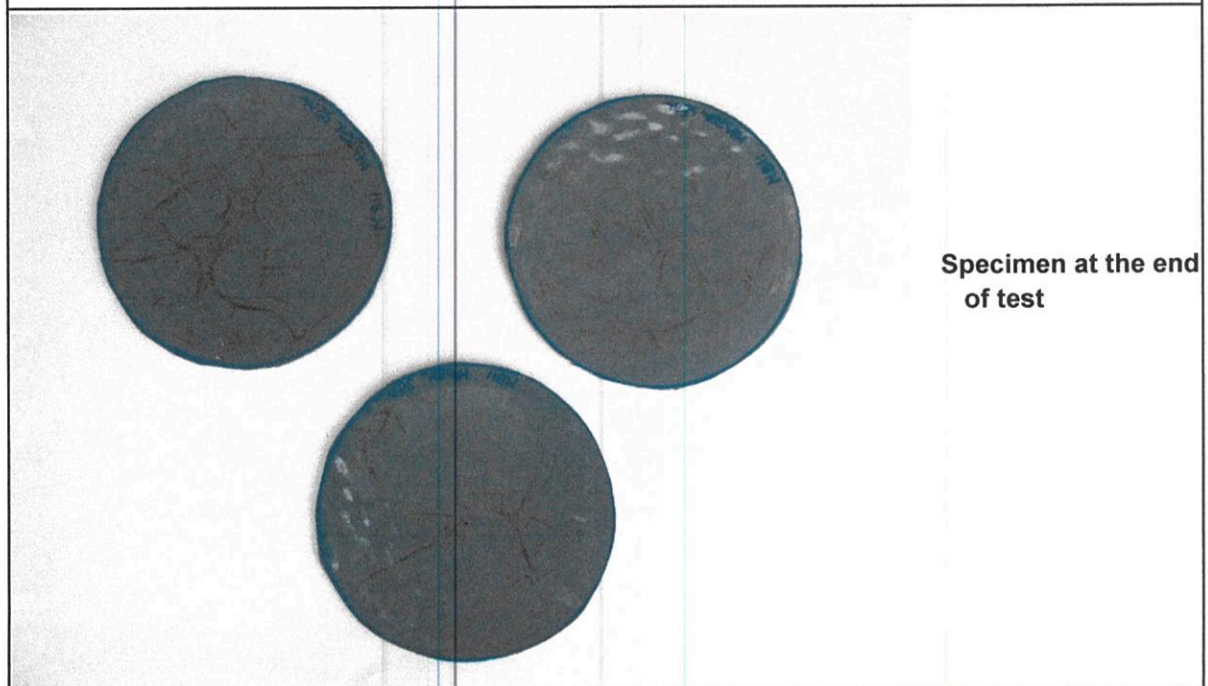
SAMPLE: MasterSeal M 811

WORK NUMBER: 15600/16

PROT. N. 36513/16 rev.0 of 22/11/16

TEST METHOD FOR DETERMINING THE RESISTANCE TO ROOTS - UNI CEN/TS 14416

Test N°	Test piece dimensions (mm)	Testing time (days)	Evaluation at the end of test
1	ø 220 x 4	42	The roots have not penetrated
2	ø 220 x 4	42	The roots have not penetrated
3	ø 220 x 4	42	The roots have not penetrated
4 - Control specimen in bitumen 85/40	ø 220 x 4	42	The roots have penetrated the bitumen



NOTE:

Test carried out on sample prepared by cutting from the mould .

Date of testing: 07/10/16 -18/11/16

Internal code equipments used: 115 - 311.

Il Direttore del laboratorio tecnologico

m_TE250 (rev.0 del 05/14)

Lo sperimentatore

Det. Alessandro Marzola
Sistema Qualità Elletipi Srl

RAPPORTO DI CLASSIFICAZIONE N. 327294
CLASSIFICATION REPORT No. 327294

Luogo e data di emissione: Bellaria-Igea Marina - Italia, 31/08/2015

Place and date of issue:

Committente: BASF Coatings GmbH - Donnerschweer Straße, 372 - 26123 OLDENBURG - Germany

Customer:

Numero e data della commessa: 66316, 22/04/2015

Order number and date:

Oggetto: classificazione al fuoco dei prodotti e degli elementi da costruzione - Parte 5: Classifica-

Purpose: zione in base ai risultati delle prove di esposizione dei tetti a un fuoco esterno secondo la norma UNI EN 13501-5:2009

fire classification of construction products and building elements - Part 1: Classification using data from external fire exposure to roofs tests in accordance with standard UNI EN 13501-5:2009

Provenienza del campione: campionato e fornito dal Committente

Origin of sample: sampled and supplied by the Customer

Denominazione del prodotto*.

Product name.*

"MASTERSEAL ROOF 2111".



(*) secondo le dichiarazioni del Committente.
according to information supplied by the Customer.

Comp. PM Revis. AG	Il presente rapporto di prova è composto da n. 4 fogli ed è emesso in formato bilingue (italiano e inglese); in caso di dubbio, è valida la versione in lingua italiana. <i>This test report is made up of 4 sheets and it is issued in a bilingual format (Italian and English); in case of dispute the only valid version is the Italian one.</i>	Foglio / sheet 1 / 4
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Descrizione del prodotto classificato*.*Description of classified product*.*

Descrizione generale del prodotto <i>General description of the product</i>			Spessore <i>Thickness</i>	Densità superficiale <i>Surface density</i>	Densità <i>Density</i>	
			[mm]	[kg/m ²]	[kg/m ³]	
membrana impermeabilizzante <i>waterproofing membrane</i>			2,95	//	//	
Descrizione dei singoli componenti partendo dalla faccia esposta al fuoco <i>Description of individual components from the face exposed to fire</i>						
Descrizione <i>Description</i>	Produttore <i>Manufacturer</i>	Denominazione <i>Name</i>	Spessore <i>Thickness</i>	Densità superficiale <i>Surface density</i>	Densità <i>Density</i>	Colore <i>Colour</i>
			[mm]	[kg/m ²]	[kg/m ³]	
finitura <i>finish</i>	BASF Coatings GmbH	MasterSeal TC 269	0,15	//	//	//
membrana impermeabilizzante <i>waterproofing membrane</i>	BASF Coatings GmbH	MasterSeal M 811	2,5	//	//	//
primer <i>primer</i>	BASF Coatings GmbH	MasterTop P 604	0,3	//	//	//

Riferimenti normativi.*Normative references.*

La classificazione è stata determinata secondo le prescrizioni della norma UNI EN 13501-5:2009 del 26/11/2009 "Classificazione al fuoco dei prodotti e degli elementi da costruzione Parte 5: Classificazione in base ai risultati delle prove di esposizione dei tetti a un fuoco esterno".

Classification has been assigned in accordance with the provisions of the standard UNI EN 13501-5:2009 dated 26/11/2009 "Fire classification of construction products and building elements Part 5: Classification using data from external fire exposure to roofs tests".

Rapporti e risultati in supporto a questa classificazione.*Reports and results in support of this classification.***Rapporti.***Reports.*

Nome del laboratorio <i>Name of laboratory</i>	Nome del Committente <i>Name of Customer</i>	Rapporto n. <i>Report No.</i>	Metodo di prova e data* <i>Test method and date*</i>
Istituto Giordano S.p.A.	BASF Coatings GmbH	327293	UNI CEN/TS 1187:2012

(*) UNI CEN/TS 1187:2012 del 02/02/2012 "Metodi di prova per tetti esposti al fuoco dall'esterno".

UNI CEN/TS 1187:2012 dated 02/02/2012 "External fire exposure of roofs and roof coverings".

Risultati in supporto alla classificazione.*Results in support of this classification.*

Parametro <i>Parameter</i>	Provetta <i>Specimen</i> [n. / No.]	Lunghezza <i>Length</i> [mm]	Criteri <i>Criteria</i> [mm]
Lunghezza danneggiata a 2 m/s - copertura <i>Damaged length at 2 m/s - roof covering</i>	Media <i>Mean</i>	435	< 550
	Massimo <i>Max</i>	460	< 800
Lunghezza danneggiata a 2 m/s - substrato <i>Damaged length at 2 m/s - substrate</i>	Media <i>Mean</i>	25	< 550
	Massimo <i>Max</i>	30	< 800

Parametro <i>Parameter</i>	Provetta <i>Specimen</i> [n. / No.]	Lunghezza <i>Length</i> [mm]	Criteri <i>Criteria</i> [mm]
Lunghezza danneggiata a 4 m/s - copertura <i>Damaged length at 4 m/s - roof covering</i>	Media <i>Mean</i>	470	< 550
	Massimo <i>Max</i>	475	< 800
Lunghezza danneggiata a 4 m/s - substrato <i>Damaged length at 4 m/s - substrate</i>	Media <i>Mean</i>	26	< 550
	Massimo <i>Max</i>	32	< 800

Classificazione e campo di applicazione.*Classification and field of application.***Riferimento di classificazione.***Reference of classification.*

Questa classificazione viene definita in accordo con la norma UNI EN 13501-5:2009.

*This classification is assigned in accordance with standard UNI EN 13501-5:2009.***Classificazione.***Classification.*

Il prodotto "MASTERSEAL ROOF 2111", in relazione al suo comportamento al fuoco esterno, è classificato:

The product "MASTERSEAL ROOF 2111" in relation to its external fire performance is classified:

B_{ROOF} (t2)

Campo di applicazione.

Field of application.

Questa classificazione è valida per le seguenti condizioni:

substrati combustibili e non combustibili con densità maggiore o uguale a 0,75 volte il substrato:
pannello truciolare con massa volumica di $(680 \pm 50) \text{ kg/m}^3$ e spessore $(19 \pm 2) \text{ mm}$.

This classification is valid for the following conditions:

*combustible and not combustible substrates having a density greater than or equal to 0,75 times the density of the substrate:
wood particle board of density $(680 \pm 50) \text{ kg/m}^3$ and thickness $(19 \pm 2) \text{ mm}$.*

Limitazioni.

Limitations.

Questo rapporto di classificazione è valido fintanto che la composizione e la struttura del prodotto non cambia.

Questo rapporto di classificazione non rappresenta un'approvazione di tipo o una certificazione di prodotto.

This classification report is valid so long as product composition and structure remain unaltered.

This classification report does not represent type approval or certification of the product.

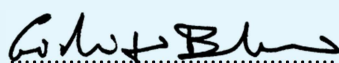
Nota del laboratorio.

Note from the laboratory.

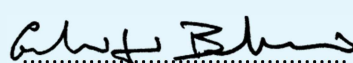
La classificazione è stata determinata sulla base dei valori ottenuti mediante misurazione, in linea al paragrafo 2.6 della guida ILAC G8:03/2009 "Guidelines on the reporting of compliance with specification", avendo soddisfatto i requisiti sulle misure e sulle apparecchiature definiti nella norma di prova.

The classification has been determined on the basis of the values obtained from measurements, in accordance with paragraph 2.6 of ILAC G8:03/2009 guide "Guidelines on the reporting of compliance with specification", having fulfilled the measurement and equipment requirements defined by the testing standard.

Il Responsabile Tecnico
Chief Test Engineer
(Dott. Gian Luigi Baffoni)



Il Responsabile del Laboratorio
di Reazione al Fuoco
Head of Reaction to Fire Laboratory
(Dott. Gian Luigi Baffoni)



L'Amministratore Delegato
Chief Executive Officer
(Dott. Arch. Sara Lorenza Giordano)



Firmato digitalmente da GIORDANO SARA LORENZA