Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
TV 60107030

Blatt *Page*
0001

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Längstens gültig bis**	*Latest expiration date* *(day/mo/yr)*
	0010-- 21251562 001	10.05.2021	

Genehmigungsinhaber *License Holder*
Rheinzink GmbH & Co. KG
Bahnhofstr. 90
45711 Datteln
Deutschland

Fertigungsstätte *Manufacturing Plant*
Rheinzink GmbH & Co. KG
Bahnhofstr. 90
45711 Datteln
Deutschland

Prüfzeichen *Test Mark*

TÜVRheinland® ZERTIFIZIERT — Produktmerkmale geprüft — www.tuv.com ID 0020000000

Geprüft nach *Tested acc. to*
2 PfG S 0032/01.16 Bauzink - Quality Zinc

Zertifiziertes Produkt **(Geräteidentifikation)**
Certified Product ***(Product Identification)***

Tafeln und Bänder aus Zink / Zinc sheets and strips

Tafeln und Bänder aus Zink, mit dem Warenzeichen
RHEINZINK:
Zinc sheets and strips, bearing the RHEINZINK trademark:

- walzblank / bright rolled
- blaugrau / blue-grey
- schiefergrau / graphite-grey

Keyword: Qualitätsmerkmale / Quality Features
Certipedia-ID: 0000040991

Digitally signed by Mavrodi Oleg
Date: 2020.04.29 16:27:06 EEST
Reason: MoldSign Signature
Location: Moldova

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH — TÜVRheinland® — Zertifizierungsstelle

Dr. K. Sander

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com
Fax: +49 221 806-3935 http://www.tuv.com/safety

Ausstellungsdatum *Date of Issue* : 11.05.2016 **(day/mo/yr)**

Certificate

Standard **ISO 14001:2015**

Certificate Registr. No. **01 104 052151/01**

Certificate Holder: **Rheinzink GmbH & Co. KG**
Bahnhofstr. 90
45711 Datteln
Germany

Scope: Production of finished products from RHEINZINK®

Proof has been furnished by means of an audit that the requirements of ISO 14001:2015 are met.

Validity: The certificate is valid in conjunction with the main certificate from 2018-11-04 until 2021-11-03.

2018-11-27

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com

DAkkS Deutsche Akkreditierungsstelle D-ZM-16031-01-00

TÜVRheinland®
Precisely Right.

shielding effect tested

IGEF

confirmation under:
www.IGEF.info

International Association for Electrosmog-Research IGEF Ltd.

Internationale Gesellschaft für Elektrosmog-Forschung IGEF Ltd.

CERTIFICATE

The results of the available investigations for determining the shielding effectiveness against electromagnetic waves revealed that the product

>RHEINZINK-Roof and facade system made of titanium zinc<

(IGEF-ID: ARH150720-00)

attenuates externally impacting electromagnetic waves within a frequency range of 20 kHz to 4 GHz by at least 99.999%. An situational assessment is advisable.
The requirements of the International Association for Electrosmog-Research IGEF for awarding the IGEF test seal are satisfied.
The preconditions for awarding the IGEF test seal must be verified once yearly.

20.07.2018

Wulf-Dietrich Rose

President of the International Association for Electrosmog-Research IGEF

Safe

The usage of rolled titanium-zinc for construction has proven itself to be a safe protector against the effects of weather in the areas of roof drainage, roofing and façade cladding.

"The usage of rolled zinc is not only to be judged positively due to the mechanical-technological properties of the material; in addition, it is very resource-economical thanks to the durability, favourable energy balance and the nearly 100% recycling rate of titaniumzinc". Material erosion as a result of natural weathering is also, according to scientific findings, proven to be extremely minor and environmentally safe as well.

In order to inform critical consumers about the selected construction material as completely and objectively as possible, responsible-minded manufacturers submit their products for voluntary testing.
The test criteria checklist was developed by the experts of the TÜV Rheinland. It defines the method of testing and establishes threshold limits. As an independent, accredited institution, we can test and certify your products.

The QUALITY ZINC label shows that:

- The chemical composition of the zinc alloy has been regularly tested.
- The mechanical and technical properties, and the chemical composition, are constantly monitored.
- The measurement tolerances are regularly checked.
- The quality management in accordance with ISO 9001:2008 supports consistent process safety.
- The ISO 14001 : 2004 certification underscores the concern shown for environmental protection in your company.
- The product declaration according to ISO 14025, Type III, documents the environmental friendliness of the products.

Contact

Document your sense of responsibility.
Use the QUALITY ZINC label:

TÜVRheinland® CERTIFIED
Quality Features
www.tuv.com
ID 0000040991

Your contact person:

TÜV Rheinland LGA Products GmbH

Dr. Karl Sander

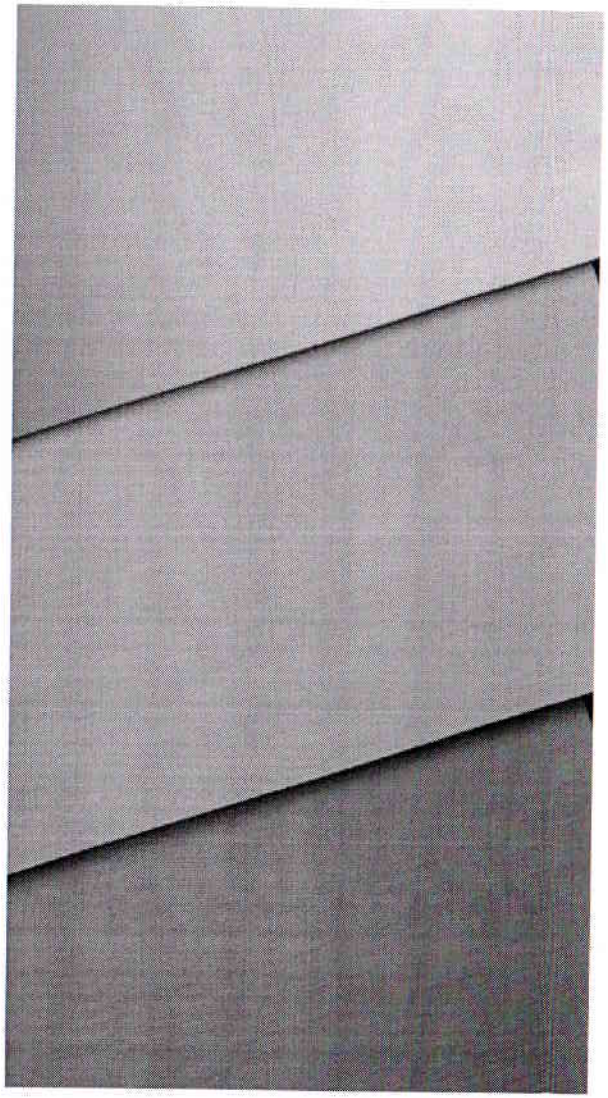
Tillystraße 2
90431 Nürnberg
Germany

Telephone: +49 (02 21) 8 06-29 58
Fax: +49 (02 21) 8 06-28 82

www.tuv.com

101030-RZ-GB-002-09-16

QUALITY ZINC
The quality standard for tested titanium-zinc



Choose quality

The QUALITY ZINC label attests to a level of care beyond the usual standard with regard to the manufacturing and processing of rolled zinc. With QUALITY ZINC, products are identified that meet the stringent demands stemming from the test criteria of the norm.

This norm sets high standards, particularly regarding the mechanical-technical properties and the chemical composition.

The QUALITY ZINC label guarantees an independent control of the material. That evokes trust.

QUALITY ZINC test criteria for sheets and strips

Sta

Test criterion	DIN EN 988	QUALITY ZINC	
		Standard (bright rolled, blue-grey)	High Cu-alloy (graph
Chemical composition			
Zinc	Zn 99,995 % (Z1 as per DIN EN 1179)	Zn 99,995 % (Z1 as per DIN EN 1179)	Zn 99,995 % (Z1 as per DIN EN 11
Copper	Cu: 0,08 – 1,0 %	Cu: 0,1 – 0,18 %	Cu: 0,8 – 1,0 %
Titanium	Ti: 0,06 – 0,2 %	Ti: 0,06 – 0,12 %	Ti: 0,06 – 0,12 %
Aluminium	Al: max. 0,015 %	Al: max. 0,015 %	Al: max. 0,015 %
Measurement tolerances for standard dimensions			
Thickness of sheet and strip	± 0,03 mm	± 0,020 mm	± 0,020 mm
Width of sheet and strip	+ 2/-0 mm	+ 2/-0 mm	+ 2/-0 mm
Length of sheet	+ 10/-0 mm	+ 2/-0 mm	+ 2/-0 mm
Mechanical-technical properties			
0,2 % expansion limit ($R_{p0,2}$)	min. 100 N/mm²	min. 110 N/mm²	min. 115 N/mm²
Tensile strength (Rm)	min. 150 N/mm²	min. 150 N/mm²	min. 160 N/mm²
Breaking elongation (A50)	min. 35 %	min. 40 %	min. 45 %
Vickers hardness (HV3)	-	min. 40	min. 45
Folding test	No cracks at the edge of fold	No cracks at the edge of fold	No cracks at the edg
Bending back after folding test	-	No crack when bending back	No crack when bend
Fold tensile force test	-	D min. 0,7 [1]	D min. 0,7 [1]
Erichsen cupping	-	min. 8,0 mm	min. 8,0 mm
Remaining stretch in creeping behaviour test ($R_{p0,1}$)	max. 0,1 %	max. 0,1 %	max. 0,1 %
Longitudinal curvature	max. 1,5 mm/m	max. 1,0 mm/m	max. 1,0 mm/m
Flatness	max. 2,0 mm wave height	max. 1,5 mm wave height	max. 1,5 mm wave h
Monitoring			
External monitoring	-	4 x annually, taken from plant [2]	4 x annually, taken f
Certification			
Quality management	-	Certified according to ISO 9001	Certified according t
Environmental management	-	Certified according to ISO 14001 Environmental product declaration as per ISO 14025, Type III	Certified according t Environmental produ tion as per ISO 1402

1) Bending by 180°, then bending back the top end of the sample by 90° and conduct of a tensile force test; D = (tensile strength of the folding sample)/(tensile strength of the mater
2) Test of the mechanical-technical properties and the chemical composition. Neutral sampling by TÜV Rheinland

Co-applicable standards: The technical stipulations and the respective plant standards and respective test requirements of the manufacturer apply.

CRADLE TO CRADLE

PRODUCTS

INNOVATION

INSTITUTE

LICENSED MARKS:

Cradle to Cradle Certified™ Bronze

THE LICENSED MARKS IDENTIFIED ABOVE MAY BE LICENSED TO:

RHEINZINK GmbH & Co. KG

FOR THE BELOW LISTED CERTIFIED PRODUCTS ASSOCIATED WITH THE NAME:

RHEINZINK-prePATINA® Roof and Façade

Peter Templeton

Cradle to Cradle Products Innovation Institute

START DATE
24 August 2019

CERTIFICATION #
4098

EXPIRATION DATE
16 September 2021

LEAD ASSESSMENT BODY:
EPEA GmbH - Part of Drees & Sommer

EPEA
PART OF DREES & SOMMER

Only the following products are considered Certified Product(s) within the scope of this certification and the associated Trademark License Agreement:

RHEINZINK-prePATINA® Roof and Façade

Certified under Version 3.1 of the *Cradle to Cradle Certified*™ Product Standard
Use of Licensed Marks is subject to terms and conditions of the C2CPII Trademark License Agreement and Trademark Use Guidelines.
Cradle to Cradle Certified™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **09 100 4346/01**

Certificate Holder: **Rheinzink GmbH & Co. KG**
Bahnhofstr. 90
45711 Datteln
Germany

Scope: Production of finished products from RHEINZINK®

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity: The certificate is valid in conjunction with the main certificate from 2018-11-04 until 2021-11-03.

2018-11-08

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com

DAkkS Deutsche Akkreditierungsstelle D-ZM-16031-01-00

TÜVRheinland®
Precisely Right.