natureplus e.V.

Guideline 0803

Loam/Clay Based Mortar

Version: Oct. 23, 2026
for the awardance of the eco-label

Introduction

The International Association for Sustainable Building and Living - natureplus association - pursues the goal of promoting sustainable building products and increasing their popularity and use. To this end, sustainability criteria for building products are defined and verified as part of regular conformity assessments at the applicant's premises.

Three comprehensive sustainability definitions are created to achieve a holistic understanding of quality.

CLIMATE PROTECTION

The climate crisis is worsening, and the consequences are becoming increasingly visible. The construction sector is one of the largest emitters, accounting for around 40% [1] of global greenhouse gas emissions. Energy-intensive manufacturing processes, long transport routes and short renovation cycles are often still characteristic of the status quo.

The natureplus certification requires manufacturers to meet limit values on CO2 emissions and primary energy consumption.

[1] UNEP, 2020, 2020 Global Status Report for Buildings and Construction, p. 4.

HEALTHY LIVING

In Western societies, we spend about 90% [2] of our lives in buildings. Pollutants emitted by building materials can accumulate in the indoor air we breathe daily, posing unnecessary health risks to occupants. The accumulation of chemical pollutants from building materials in household dust is also a cause for concern.

The natureplus certification ensures that hazardous input materials are avoided or used in quantities that are harmless to health. Emissions from building products are strictly regulated and regularly monitored.

[2] Umweltbundesamt, o. D., Ausschuss für Innenraumrichtwerte (AIR)

CONSERVATION OF RESOURCES

All construction activities have an impact on nature and the environment, with the consumption of finite resources remaining unacceptably high. The production of building materials in Germany consumes about 60% of our resources, and as much as 90% if only mineral raw materials are considered. At the same time, the construction sector is responsible for 50% of the waste generated. [3]

The natureplus certification sets out requirements for increased transparency in the supply chain, respect for human rights and the environment, and the responsible use of resources throughout the life cycle of a building product.
Sustainable materials should also be durable, reusable, or recyclable.

[3] VDI ZRE, 2019, Ressourceneffizienz im Bauwesen – Von der Planung bis zum Bauwerk, p. 5.

Notes on this product guideline:

The eco-label, the certification programme including all associated documents is the property of the non-profit natureplus® environmental organisation. The Association and its specially appointed Criteria Commission are therefore responsible for the further development of the requirements.

The label is awarded by the European cooperative natureplus Institute SCE mbH.

In the event of textual discrepancies between different language versions of a guideline, the Criteria Commission's Task Force will determine the valid wording. The affected language versions will be amended to reflect the valid wording.

In the event of conflict between the basic guidelines (50XX) and this product guideline, the product award guideline shall prevail.

For questions, criticism and suggestions, please contact:

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1 Application Areas

The following award criteria contain requirements for the natureplus®-ecolabel.

This guideline applies to clay plaster mortar for interior use with an application thickness of at least 5 mm.

The guidelines apply exclusively to the products mentioned.

Products for the color design of the interior and for application thicknesses of less than 5 mm are regulated in the natureplus award guideline GL0607 Clay thin-layer coatings and clay coatings.

2 Award Criteria

The prerequisite for a product to be awarded the natureplus® quality label in accordance with these guidelines is compliance with the following award guidelines:

- GL5001 Chemicals Directive
- GL-5003 Nature Conservation when Exploiting Mineral Resources
- GL5004 Transparency and Social Responsibility
- GL5010 Low-emission building products
- GL5020 Climate compatibility and energy efficiency

2.1 Functional Suitability

The following points must be certified by an appropriate testing institute:

A measurement of the dry shrinkage (mm/m) according to DIN 1060 part 3 with a spread measure of 140 mm instead of 180 mm

- The sorption capacity measured upon reaching a moisture equilibrium level of 50% relative humidity and 21°C and increasing the relative humidity to 80% in time intervals of 0.5; 1.5; 3; 6; 12; 24; and 48 hours.
- The flexural tensile strength DIN EN 196-1 in N/mm²
- The compression resistance according to DIN EN 196-1(Test Sample 40 x 40 x 40 mm) in N/mm²

2.2 Composition, Forbidden Substances, Substance Restrictions

The product must be made from 100 M-% from mineral and renewable raw materials.

Only clay and loam/clay are permitted as binding agents.

The use and addition of biozides is not permitted.

The use of halogen-organic compounds is prohibited.

In particular, the following materials may not be used in the loam/clay mortar:

- Synthetic materials and fibres (e.g. Acrylate, Polyvinyl acetate)
- Lime, gypsum and cement as binding agents
- Cellulose and carbohydrate derivatives

The following substances must not be added to the product:

- glycol ether and esters
- APEOs (alkylphenol ethoxylates)
- halogenated isothiazolinones
- formaldehyde releasing substances

Only pigments prepared from iron oxides or anorganic substances with comparable or less toxicity may be added to the product.

The product must not be prepared with pigments and siccatives based on lead, cadmium, chrome VI and their compounds.

The product is subject to assessments as detailed in section 3 and must comply with the limits specified therein.

2.3 Raw Material Sourcing, Production of Preliminary Products, Production

A certificate of origin must be provided for all raw materials.

When using mineral raw materials, the requirements of RL-5003 " Nature conservation in the mining of mineral raw materials" must be complied with.

If secondary raw materials are used, the product may if required, be tested for material specific parameters.

2.4 Usage

During use, the product must not have any odor or no odor foreign to the product (see 3.3 Other analysis: Odor).

The product emissions must not exceed the natureplus requirement values for the use phase (see section 3.1 Volatile organic compounds and GL5010 Low-emission building products).

2.5 Reuse, recycling and disposal

Proof must be provided that the products can be recycled (compliance with the requirements of the functional suitability).

The products must be disposable in inert landfills in accordance with the "Decision of the EU Council of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC".

2.6 Ecological Parameters

All products in this product group must be manufactured in such a way that the environmental parameters listed in RL5020 are complied with.

2.7 Public Declaration

A public declaration of ingredients[1] must be provided in the official language of the country in which the product is intended for sale. It must be freely accessible. Ingredients must be listed in descending order of weight. The following publicly accessible documentation paths are permitted:

- Product packaging
- Technical data sheet
- Sales brochures
- Website

Ingredients from preliminary products or preparations that remain in the final product with a content of >1 M% must also be included in the full declaration.

The following applies to the public declaration of ingredients:

- above 1 M% the name of the ingredient
- below 1 M% at least the functional name of the ingredient, the mass order is cancelled.

[1] Ingredients are substances and mixtures that remain in the final product. Reactants and ancillary input materials are included in the non-public full declaration submitted to the assessment body

Furthermore, there is an obligation to include the following information with the product or to make it available to the consumer or user in an appropriate manner (e.g. online):

- Instructions for use and safety instructions
- Storage and disposal instructions
- Batch numbers
- Country of production
- Country of origin of input materials > 20 M-% where there is a deviation from the country of production

When using ingredients with an environmentally hazardous potential, the applicant must indicate at an appropriate place which measures are to be taken within the framework of dismantling and demolition work to protect the environment (e.g. controlled dismantling).

Additionally, the following product-specific information must be made available to the consumer or user.

- Type and quantity of the organic aggregates
- Consumption data
- The dry shrinkage measurement in mm/m; including processing/handling instructions if necessary
- Details of the flexural tensile strength.
- Details of the compression resistance according to EN 988-1.
- The pH-Value.
- The sorption capacity after 1.5 and 12 hours.
- Details of the abrasion resistance
- A warning note: Surface treatments may influence the sorption capacity.
- Information to the guarantee terms and guarantee period
- Minimum durability

If the loam/clay mortar is not sold or distributed exclusively by trained specialists, then the manufacturer must make reference on the product to possible serious processing/ handling errors (i.e. the addition of excess amounts of water or an insufficient drying period).

2.8 Processing and Installation

No further requirements in this section.

2.9 Packaging

The packaging used must be recyclable.

The manufacturer must belong to a recycling system, if one exists for the corresponding material.

Paper and cardboard packaging must be made from recycled paper. Alternatively, paper from sources as per GL5002 is also permitted.

Plastic packaging must be made from polyolefins. PET, polystyrene or polycarbonates are allowed exceptionally in reasonablecases.

PVC packaging is generally not permitted.

Packaging must not contain biocides.

Once awarded, the natureplus label together with the license number must be printed on the packaging or made visible to the consumer in another suitable place.

3 LaboratoryTests

The products are subject to laboratory analyses to test for harmful substances and undesirable ancillary ingredients. A representative sample is collected during the production audit. If the sample collection cannot be conducted by a natureplus examiner, an independent person designated by natureplus can collect the sample. For products with different sizes but the same composition, a single sample is sufficient.

3.1 Volatile Organic Compounds VOC / TVOC

To check the emission of VOC and to determine the TVOC and TSVOC, an emission chamber test is carried out with the product. Measurements are usually performed after 3 and 28 days. The test-chamber examination is performed according to the current version of natureplus guideline 5010. The product must comply with the limit values specified in guideline 5010.

3.2 Element Analyses

The product is subject to an element analysis to determine the content of harmful elements and to check for undesirable contaminations. The measurements have to be in compliance with the limit values. The analysis is performed according to the current version of the test method TM-02 metals.

An eluate analysis is mandatory if the required values of the content analysis are not met.

Element	Limit value [mg/kg]
Arsenic (As)	≤ 5
Cadmium (Cd)	≤ 1
Cobalt (Co)	≤ 20
Chromium (Cr)	≤ 20
Copper (Cu)	≤ 35
Mercury (Hg)	≤ 0,5
Nickel (Ni)	≤ 20
Lead (Pb)	≤ 15
Antimon (Sb)	≤ 5
Tin (Sn)	≤ 5
Zinc (Zn)	≤ 150

3.3 Other Analyses

Halogenic organic compounds

Test parameters	Limit values	Unit	Method
Halogenic organic compounds: AOX/EOX	≤ 1	mg/kg	TM-03 Halo

pH value

Test parameters	Limit values	Unit	Method
pH value	≤ 12,75		ISO 10390

Odour

Test parameters	Limit values	Unit	Method
Odour	≤ 3	Odour intensity	TM-04 Odour

Pesticides

Analysis if necessary, if the product contains input materials based on renewable raw materials from agriculture or forestry:

Test parameters	Limit values	Unit	Method
Total pesticides	≤ 1	mg/kg	TM-05 Pesticides
Individual pesticides Organochlorine pesticides: Aldrin, Chlordane, DDD, DDE, DDT, Dichlofluanid, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene, Lindane, Pentachlorophenol Organophosphate pesticides: Dimethoat, Fenthion, Parathion-methyl, Parathion-ethyl, Phosalon Pyrethroids: Cypermethrin, Lambda-Cyhalothrin, Permethrin Other: Benomyl, Carbendazim, Prochloraz	≤ 0,1	mg/kg	TM-05 Pesticides

4 Appendix

Test methods

TM-01 VOC : Volatile Organic Compounds VOC/TVOC, formaldehyde, acetaldehyde and TSVOC: DIN EN ISO 16000 series expanded by the natureplus implementation rules in guideline 5010.

TM-02 Metals: ICP-MS measurements according to DIN EN ISO 17294-2, supplemented with the natureplus implementation rules and a sample preparation adjusted to the issue analysed.

TM-03 Halo: Halogenic organic compounds after combustion, determined by microcoulometry according to the natureplus implementation rules "AOX/EOX".

TM-04 Odour: natureplus implementation rules "odour intensity", 6-degree grading scale 3 days after loading the test chamber following VDA 270:2018.

TM-05 Pesticides: DFG S 19 extended by natureplus implementing regulations

TM-08 Foreign fibres and foreign substances: scanning electron microscopy SEM

TM-09 Monomeric isocyanates: 24h after test chamber loading

TM-10 PAH: HPLC / GC-MS, sum according to EPA