

# **BLUE ANGEL**

**The German Ecolabel**



## **External Thermal Insulation Composite Systems (ETICS)**

**DE-UZ 140**

**Basic Award Criteria**

**Edition January 2010**

**Version 9**

## The Environmental Label is supported by the following four institutions:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.



The German Environmental Agency with its specialist department for "Ecodesign, Eco-Labeling and Environmentally friendly Procurement" acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Criteria for Award of the Blue Angel.



The Environmental Label Jury is the independent, decision-making body for the Blue Angel and includes representatives from environmental and consumer associations, trade unions, industry, the trade, crafts, local authorities, academia, the media, churches, young people and the German federal states.



The RAL gGmbH is the awarding body for the Environmental Label. It organises the process for developing the relevant award criteria in independent expert hearings – which involve all relevant interest groups.

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**This document is a translation of a German original. In case of dispute, the original document should be taken as authoritative.**

# **1 Introduction**

## **1.1 Preface**

In cooperation with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the German Environmental Agency and considering the results of the expert hearings conducted by RAL gGmbH, the Environmental Label Jury has set up these Basic Criteria for the Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.

Upon application to RAL gGmbH and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH, the permission to use the Environmental Label may be granted to all products, provided that they comply with the requirements as specified hereinafter.

The product must comply with all the legal requirements in the country in which it is to be marketed. The applicant shall declare that the product meets this requirement.

## **1.2 Background**

External Thermal Insulation Composite Systems (ETICS) (also known as: EWIS – External Wall Insulation Systems (UK) or EIFS - Exterior Insulation and Finish Systems (USA)) are used for thermal insulation of building facades. ETICS principally stands for well-defined materials approved by the building authorities ("components") which are „inter-connected“ and applied to the external wall in order to improve the thermal insulation of buildings.

In principle, an external thermal insulation composite system is constructed as follows: The insulating material in the form of panels or lamellas is fixed to the existing wall by the use of bonding mortar or, if applicable, anchors and covered with a reinforcing layer. The insulating material can also be fixed by means of suitable rails anchored to the existing wall. The reinforcing layer consists of an undercoat (reinforcing mortar) with a reinforcing mesh embedded therein. The reinforcing mesh is placed in the upper third. The system is completed by a final (external) plaster coat that may be painted according to requirements and design choices.

Thus, the external thermal insulation composite system consists of at least four layers:

- Adhesive layer or mechanical fixing by means of rails, anchors etc.
- Thermal insulating layer made of insulating materials in different layer thickness
- Reinforcement layer made of reinforcing plaster and reinforcing mesh
- Final plaster coat for surface design as well as for weather protection of the external surfaces.

## **1.3 Objectives of the Environmental Label**

External thermal insulation composite systems can greatly improve the energy efficiency of buildings. The pollution of the environment by components of these external thermal insulation composite systems must be low in order to make sure - both from the environmental and from the health point of view - that emissions from these products are as low as possible. Here, the Blue Angel eco-label will help consumers to identify low-emission products.

That is why the requirements for the Blue Angel eco-label refer not only to the substances and materials used in the manufacture but also to the period of use and the disposal of containers/packages and product residues.

A check of the substance intrinsic properties (recipe test) alone will not be sufficient to meet the complex requirements for building products such as, for example, external thermal insulation

composite systems: the building products used in an ETICS which are suitable from the substance point of view might be used in an unsuitable design (planning), improperly mounted or damaged during installation with the result that the environmental objectives (thermal insulation – energy saving – climate protection) will not be achieved. That is why the eco-label for external thermal insulation composite systems defines criteria in terms of minimum requirements for:

- Quality assurance / standard workmanship
- Stability / durability
- Optical properties
- Provision of information

The Blue Angel eco-label for external thermal insulation composite systems may be awarded to products that are

- manufactured by the use of substances and materials which have less environmental impact than other products within that product group,
- free from pollutants which would seriously interfere with disposal,
- featuring high durability,
- installed in accordance with the legal provisions in force.

## **2 Scope**

These Basic Award Criteria apply to external thermal insulation composite systems generally approved by the building authorities and designed in accordance with DIN 55699, February 2005, „Application of external thermal insulation composite systems“.

## **3 Requirements**

The Blue Angel eco-label shown on page 1 may be used for the labelling of products under paragraph 2, provided that they meet the requirements set forth hereinafter.

### **3.1 Manufacture**

#### **3.1.1 General Substance Requirements**

The components of the external thermal insulation composite system may not contain as constituent parts or split off under processing conditions any substances or preparations<sup>1</sup> which:

**[1]** are listed in EC Regulation 1272/2008<sup>2</sup>, Table 3.1 in Annex VI for H Phrases and in Table 3.2 of Annex VI for R Phrases and/or exhibit the properties mentioned in Section 4, GefStoffV

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<sup>1</sup> Terms as defined in Section 3, paras. 1 - 4, Publication of the Revised Version of the German Chemicals Act of 2 July 2008, as amended (Federal Law Gazette I, No. 28, p. 1146)

<sup>2</sup> Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, Annex VI on harmonized classification and labelling of hazardous substances, Part 3: Harmonized classification and labelling, Tables, Table 3.2, – List of harmonized classification and labelling of dangerous substances from Annex I to Directive 67/548/EEC and Regulation 790/2009 amending

(Ordinance on Hazardous Substances)<sup>3</sup> as well as the following ones as specified in Annex VI to Directive 67/548/EEC or meet the classification criteria (self-classification<sup>4</sup>):

- ♦ very toxic (T+)
- ♦ toxic (T);

**[2]** are listed in EC Regulation 1272/2008<sup>2</sup> Table 3.1 in Annex VI for H Phrases and / or in Table 3.2 of Annex VI for R Phrases and/or exhibit the properties mentioned in Section 4, GefStoffV (Ordinance on Hazardous Substances)<sup>3</sup> as well as the following ones as specified in Annex VI to Directive 67/548/EEC or meet the classification criteria (self-classification)<sup>4</sup>:

- ♦ carcinogenic (Carc.Cat. 1, Carc.Cat. 2) or (Carc.Cat.1A, Carc.Cat. 1B), resp.
- ♦ mutagenic (Mut.Cat. 1, Mut.Cat. 2) or (Muta.Cat. 1A, Muta.Cat. 1B), resp.
- ♦ reprotoxic (Repr.Cat 1, Repr.Cat. 2) or (Repr. Cat. 1A, Repr. Cat. 1B), resp.

**[3]** are classified in TRGS 905<sup>5</sup> as:

- ♦ carcinogenic (K1, K2)
- ♦ mutagenic (M1, M2)
- ♦ reprotoxic (RF1, RF2)
- ♦ teratogenic (RE1, RE2)

**[4]** are evaluated and classified in the MAK Value List<sup>6</sup> as:

- ♦ carcinogenic working materials, category 1 or 2
- ♦ germ-cell mutagenic working materials, category 1 or 2

**[5]** Substances with other hazardous substances being present in concentrations that require a classification and labelling of the finished product with a GHS hazard pictogram for health and environmental hazards. Exempted are internal plasters which because of their high pH value during processing must be labelled with the GHS hazard pictogram GHS05 (corrosion) or GHS07 (exclamation mark).

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Regulation (EC) No. 1272/2008, each as amended, short: GHS-Regulation [http://www.reach-info.de/ghs\\_verordnung.htm](http://www.reach-info.de/ghs_verordnung.htm), each as amended.

The GHS Regulation (Global Harmonization System), that has come into force on January 20, 2009, replaces the old Directives 67/548/EEC and 1999/45/EC. According to the said regulation, substances are classified, labelled and packed until December 1, 2010 according to Directive 67/548/EEC (Dangerous Substances Directive) while mixtures are classified, labelled and packed until June 1, 2015 according to Directive 1999/45/EC (Dangerous Preparations Directive). Notwithstanding this, the classification, labelling and packaging of substances and preparations may be performed according to the provisions of the GHS Regulation already before December 1, 2010 or June 1, 2015, respectively.

<sup>3</sup> Gefahrstoffverordnung (Ordinance on Hazardous Substances) dated 23 December 2004 (Federal Law Gazette I, page 3758) as amended, last amended by Article 2 of the ordinance, dated December 18, 2008 (Federal Law Gazette I, page 2768)

<sup>4</sup> From December 1, 2010 the European Chemicals Agency (ECHA) keeps a classification and labelling system according to Article 113 of REACH which lists all self-classifications and legal classifications in Annex VI to the EU GHS Regulation.

<sup>5</sup> TRGS 905, List of carcinogenic, mutagenic or reprotoxic substances, as amended, last amended in May 2008

<sup>6</sup> MAK and BAT Value List, Senate Commission for the Testing of Health-Endangering Working Materials, as amended, last amended by Communication No. 45 (2009)

**Compliance Verification:**

*The applicant shall demonstrate compliance with the requirements by submitting the corresponding declarations from manufacturer and suppliers according to Annex 2.*

**3.1.2 Requirements for Insulation Materials****3.1.2.1 Fibrous Insulation Materials**

Mineral fibres may cause temporary short-term skin irritations. Therefore, the packages or instruction leaflets of insulation material manufactured from mineral wool must include application information, for example, in the form of pictograms or notices.

**Compliance Verification:**

*The applicant shall submit the package text or the instruction leaflet.*

**3.1.2.2 Foamed Insulation Materials**

Insulation material for external thermal insulation composite systems shall not be manufactured using halogenated organic compounds as blowing agents (for example, fluorinated greenhouse gases [HFCs]).

**Compliance Verification:**

*The applicant shall declare compliance with the requirement in Annex 2 or submit a corresponding declaration from the pre-suppliers.*

**3.1.2.3 Flame Retardants**

Thermal insulation materials used in the external thermal insulation composite system may not contain any flame retardants identified as persistent, bioaccumulative and toxic (PBT) substances or as very persistent and very bioaccumulative (vPvB) substances according to the criteria of Annex XIII to the REACH Regulation 1907/2006/EC. Moreover, thermal insulation materials may not contain as flame retardants any halogenated organic compounds<sup>7</sup>.

**Compliance Verification:**

*The applicant shall declare compliance with the requirement in Annex 2. If compliance cannot be declared applicant shall determine the contents of the halogens fluorine, chlorine and bromine by means of combustion analysis (total digestion). As a part of tolerable impurities their contents shall not exceed 1 g/kg.*

**3.1.2.4 Biocides**

Insulation materials used in external thermal insulation composite systems may not contain any biocides<sup>8</sup>.

**Compliance Verification:**

*The applicant shall declare compliance with the requirement in Annex 2 or submit a corresponding declaration from the pre-suppliers.*

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<sup>7</sup> At the suggestion of the Federal Environmental Agency the Environmental Label Jury may except substances from the general exclusion of halogenated organic compounds. In addition, all substances marked with the Risk Phrases R50 and R53 shall be excluded.



### **3.1.3 Requirements for Plasters and Finishing Coats**

#### **3.1.3.1 Plasters (Adhesive, Undercoat and Final Plaster Coat)**

Plasters shall meet the requirements of DIN EN 998-1 or prEN 15824.

##### **Compliance Verification:**

*The applicant shall declare compliance with the requirement in Annex 2 or submit a corresponding declaration from the pre-suppliers.*

#### **3.1.3.2 Biocides**

Plasters may not contain any biocides<sup>8</sup> to protect the surface against growth of algae, fungi and lichens.

In-can preservatives for pasty preparations according DE-UZ 102, Annex 1 shall be permitted.

##### **Compliance Verification:**

*The applicant shall declare compliance with the requirement in Annex 2 or submit a corresponding declaration from the pre-suppliers.*

#### **3.1.3.3 Additional Finishing Coats**

If an additional finishing coat is applied to the external thermal insulation composite system the coats may not contain any biocides to protect the surface from growth of algae, fungi and lichens.

In-can preservatives according DE-UZ 102, Annex 1 shall be permitted.

##### **Compliance Verification:**

*The applicant shall declare compliance with the requirement in Annex 2 or submit a corresponding declaration from the pre-suppliers.*

### **3.2 Requirements for Thermal Insulation**

The external thermal insulation composite system shall exhibit an R-value of at least 4.0 m<sup>2</sup>\*K/W. This corresponds to an insulating layer thickness  $\geq$  140 mm for an insulation material with a thermal conductivity of 0.035 W/(m\*K) or an insulating layer thickness  $\geq$  160 mm for an insulation material with a thermal conductivity of 0.040 W/(m\*K)<sup>9</sup>.

The R-value refers to the thermal resistance of a building element layer.

##### **Compliance Verification:**

*The applicant shall declare compliance with the requirement in Annex 1 and submit the corresponding product information (e.g. technical data sheets, printout of the corresponding portions of the manufacturer's or distributor's websites).*

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<sup>8</sup> The definition of „biocide“ corresponds to the definition contained in the act transposing Directive 98/8/EC of the European Parliament and the Council of 16 February 1998 concerning the placing on the market of biocidal products (Biocidal Products Act) of 20 June 2002 (Federal Law Gazette I, No. 40, of 27 June 2002)

<sup>9</sup> Upon revision of the EnEV (Regulation on energy-saving thermal insulation and energy-saving systems engineering for buildings – Energy Savings Regulation – dated July 24, 2007 (Federal Law Gazette I,p.1519) which is changed by Article 1 of Regulation dated April 29, 2009 (Federal Law Gazette I,p.954) the values are to be checked and, if applicable, adjusted.

### **3.3 Proper Workmanship (Quality Assurance)**

The external thermal insulation composite system must meet the generally accepted rules of technology (standards, manufacturer and professional association guidelines). DIN 55699 – „Application of external thermal insulation composite systems“ as well as ATV 18 345 (General technical specifications in construction contracts) shall be complied with. For this purpose the technical data sheets shall at least give a detailed description of the requirements set by DIN 55699 and by the general approval of the building authorities for proper workmanship.

The manufacturer shall make the technical data sheets and other application instructions as well as safety data sheets available to client, site manager, contractor etc., for example in the form of corporate literature or information pages on the internet.

#### **Compliance Verification:**

*The applicant shall declare compliance with the requirement in Annex 1 and submit the corresponding product information (e.g. technical data sheets, manufacturer's or distributor's websites).*

### **3.4 Declaration and Consumer Information**

The manufacturer shall provide clear product information either on the packaging or on a label including the following details. Alternatively, the manufacturer shall make the information available to trade for presentation to the customer at the latter's request.

- Identification of manufacturer or supplier,
- Product name and material,
- Product / system details,
- Traceability information, e.g. batch number,
- Approval of the building authorities

The product shall be accompanied by a short version of the following instructions and recommendations. The information may, alternatively, be made available at customer's request. Such information shall include a note on how a detailed version can be made available to the owner or site manager (e.g. upon request to the manufacturer, reference to the manufacturer's website).

- Installation instructions and notices
- Maintenance and cleaning instructions
- Disposal instructions for packages and product residues (e.g. return and recycling options)
- Notes and information on sound insulation and possible improvements.

#### **Compliance Verification:**

*The applicant shall declare compliance with the requirement in Annex 1 and submit the corresponding product information (e.g. technical data sheets).*

#### **3.4.1 Additional Instructions for Marked Internal Plasters**

The container/package text and the technical data sheet of internal plasters that require marking under chemical law with the hazard pictograms GHS05 (corrosion) or GHS07 (exclamation mark) shall, in addition to para. 3.2.4.1, include the following cautions/instructions in an easy-to-read form (other similar wording may be used):

- „Always wear safety glasses!“

- „In case of contact with your eyes rinse immediately with plenty of water and see an ophthalmologist.“
  - „Always wear heavy-duty waterproof gloves to protect your hands!“
  - „Always wear long trousers!“
  - „Avoid prolonged skin contact with the plaster. Rinse affected areas immediately with plenty of water.“
  - „The longer fresh plaster remains on your skin the greater the risk of severe skin damage.“
  - „Keep children away from fresh plaster!“
- „Follow the manufacturer’s instructions for safety and health during application.“

### **3.5 Advertising Statements**

Advertising statements may not include any notes such as „tested for its biological material quality“ or those which would play down risks in terms of Article 23, para. 4 of Directive 67/548/EEC, as, for example, „non-toxic“, „non-hazardous to health“.

#### ***Compliance Verification:***

*The applicant shall declare compliance with the requirement in Annex 1 and submit the corresponding product information (e.g. technical data sheets).*

## **4 Applicants and Parties Involved**

Distributors of final products according to Paragraph 2 shall be eligible for application.

Parties involved in the award process are:

- RAL gGmbH to award the Blue Angel Environmental Label,
- the federal state being home to the applicant’s production site,
- Umweltbundesamt (German Environmental Agency) which after the signing of the contract receives all data and documents submitted in applications for the Blue Angel in order to be able to further develop the Basic Award Criteria.

## **5 Use of the Environmental Label**

The use of the Environmental Label by the applicant is governed by a contract on the use of the Environmental Label concluded with RAL gGmbH.

Within the scope of such contract, the applicant undertakes to comply with the requirements under Paragraph 3 while using the Environmental Label.

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until December 31, 2022. They shall be extended by periods of one year each, unless terminated in writing by March 31, 2022 or March 31 of the respective year of extension.

After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

The applicant (manufacturer) shall be entitled to apply to RAL gGmbH for an extension of the right to use the ecolabel on the product entitled to the label if it is to be marketed under another brand/trade name and/or other marketing organisations.

The Contract on the Use of the Environmental Label shall specify:

- Applicant (manufacturer/distributor)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

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