



**EUROPEAN TECHNICAL APPROVAL
ACCORDING TO ETAG 005**

- EXPLANATIONS -

1. Particular Abbreviation

ETZ : Europäische Technische Zulassung
ETA : European Technical Approval
ETAG : European Technical Approval Guideline/
Leitlinie für Europäische Technische Zulassung
EOTA : European Organisation for Technical Approvals
CE : Conformité Européenne/Communauté Européenne
LARWK: Liquid Applied Roof Waterproofing Kit

2. Legal Basis

Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products

„Essential Requirements“

ER1: Mechanical resistance and stability
ER2: Safety in case of fire
ER3: Hygiene, health and the environment
ER4: Safety in use
ER5: Protection against noise
ER6: Energy economy and heat retention

CE - marking and information

The ETA shall indicate the information to accompany the CE-marking, the placement of CE-marking and the accompanying information (eg. on the kit and/or components, an attached label, the packaging or on the accompanying commercial documents).

3. ETAG 005

Each (LARWK) shall be **classified** according to Part 1 - clause 4.7.2 as follows:

1. external fire performance
2. reaction to fire

Each (LARWK) shall be **categorised** according to Part 1 - clause 4.7.3 as follows:

3. expected working life
4. climatic zone of use
5. user loads
6. roof slopes
7. minimum surface temperatures
8. maximum surface temperatures

Each (LARWK) shall have, according to Part 1 – clause 5.3.1

9. a declared value regarding water vapour permeability

Each (LARWK) shall have, according to Part 1 – clause 5.3.2

10. a declaration regarding presence of dangerous substances

Categorisation according to working life

	Category W1	Category W2	Category W3
Expected working life (years)	5	10	25

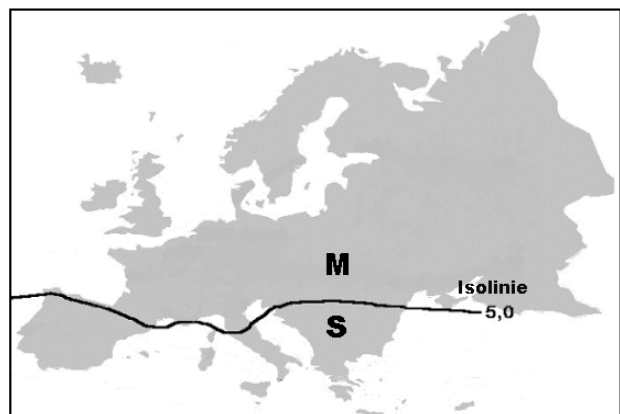
The indication given on the working life of assembled system(s) cannot be interpreted as a guarantee by the Applicant (or the Approval Body) but is regarded only as a means of choosing the appropriate products in relation to the expected economically reasonable working life of the works

Categorisation according to climatic zone

	Category M Moderate climate	Category S Severe climate
Annual radiant exposure on horizontal surface	< 5 GJ/m ² and	≥ 5 GJ/m ² and/or
Average temperature of the warmest month per year	< 22 °C	≥ 22 °C

Note 1: *The annual radiant exposure is the total amount of solar energy received by horizontal global surface within a defined geographical region, calculated as a mean measured value over a period of five years. The average temperature of the warmest month is the calculated mean value over a period of five years for the average measured maximum air temperature of that month.*

Note 2: *The "isoline 5" can be used as an indicative dividing line between "moderate" and "severe" climatic zones of use*



Categorisation according to user loads

Category	User load	Examples of accessibility
P1	Low	non-accessible
P2	Moderate	accessible for maintenance of the roofing only
P3	Normal	accessible for maintenance of plant and equipment and to pedestrian traffic
P4	Special	roof gardens, inverted roofs, green roofs

Categorisation according to roof slopes

Category	Slope (%)	Examples of possible related effects
S1	< 5	<ul style="list-style-type: none"> - frost (thickness of ice layer) - UV/standing water - user loads (accessibility) - effects of standing water - fire behaviour - plant roots (roof gardens and green roofs)
S2	5 - 10	<ul style="list-style-type: none"> - frost (thickness of ice layer) - UV - user loads (accessibility) - fire behaviour - plant roots (green roofs only)
S3	10 - 30	<ul style="list-style-type: none"> - sliding - frost (freezing snow) - UV - user loads (accessibility) - fire behaviour - plant roots (green roofs only)
S4	> 30	<ul style="list-style-type: none"> - sliding - UV - user loads (accessibility) - fire behaviour

Categorisation according to minimum surface temperature of the assembled system

Category	Climatic zone	Surface protection	Minimum surface Temperature (°C)
TL1	All climatic zones	Inverted roofs and roof gardens (excluding "green" roofs)	+ 5
TL2	Moderate low temperature	All other protected assembled systems or exposed roofs	- 10
TL3	Severe low temperature		- 20
TL4	Extreme low temperature*		- 30

** Note: The particular location(s) for which Category TL4 has to be taken into account may be declared by Member States*

Categorisation according to maximum surface temperature of the assembled system

Category	Climatic zone	Surface protection	Maximum surface Temperature (°C)
TH1	All climatic zones	Inverted roofs and roof gardens	30
TH2	Moderate high temperature	Exposed, un insulated roofs or heavily protected roofs	60
TH3		Exposed, insulated roofs	80
TH4	Severe high temperature *	Exposed, insulated roofs	90

** Note: For southern European regions considered as having "severe" climatic conditions related to high surface temperatures (area south of indicative "isoline 5)*

4. METHODS OF VERIFICATION

To gain high categories, one has to match higher demands. Following some examples:

Resistance to fatigue movement

A fully bonded assembled system shall be subjected to fatigue movements at -10°C. The number of cycles to which the assembled system shall be subjected will be determined by the categorisation of the kit according to the expected working life and is defined in a table.

Number of cycles of fatigue movement

Categorisation of expected working life	Number of cycles
W1	250
W2	500
W3	1000

Resistance to heat ageing

The effects of heat ageing on the resistance to mechanical damage shall be verified by subjecting an assembled to heat for a period defined by the categorisation according to climatic zone and the categorisation according to expected working life. The relationship between these aspects and the period of exposure is given in a Table.

Relationship between climatic zone, working life and period of exposure to heat

Climatic zone category	Moderate (M)			Severe (S)		
	W1	W2	W3	W1	W2	W3
Working life category						
Exposure period (days)	25	50	100	50	100	200

Resistance to water ageing

The effects of water ageing shall be determined by exposing the upper surface of the assembled system to water. The period of exposure will be determined by the categorisation of working life and of the roof slope of the kit.

Relationship between application, working life and exposure period

Application	Exposure period (days)		
	Kategorie	W1	W2
S1 or S2	15	30	60
P4	Not applicable *	90	180

Note: The categorisation according to expected working life of kits for applicaion in roof gardens, inverted roofs and green roofs (P4) shall be at least 10 years (W2)

5. European Technical Approvals KEMPER SYSTEM

KEMPEROL V 210	ETA-03/0025
KEMPEROL BR	ETA-03/0026
KEMPEROL 1K-PUR	ETA-03/0043
KEMPEROL 2K-PUR	ETA-03/0044

Classifications and Categories are the same for all LARWK KEMPEROL:

6. Example for CE-Mark

CE	
KEMPER SYSTEM	
8	
Component X ETA-03/00XX	
External fire performance	NPD
Reaction to fire	E
Working life:	W3
Climatic zones:	M and S
Imposed loads:	P1 to P4
Roof slope:	S1 to S4
Lowest surface temperature:	TL4
Highest surface temperature:	TH4