Technical Recommendations

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TECHNICAL RECOMMENDATION
ICiMB-RT-2024/0006 edition 1

Łukasiewicz Research Network – Institute of Ceramics and Building Materials, having carried out a relevant procedure at the request of the manufacturer:

STABICA Sp. z o.o.
ul. Płocka 81A
32-543 Myślachowice

declares that the following product is suitable for use in construction and made in accordance with the principles of technical knowledge and technical solutions:

STABICA LC600 fireplace panel

DIRECTOR
Łukasiewicz Research Network – Institute of Ceramics and Building Materials

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1. Purpose of the recommendation

The purpose of this technical recommendation is to confirm compliance and suitability of the technical solutions concerned and to assess their properties as required by Article 5 of the Construction Law of July 7, 1994 (consolidated text: Journal of Laws 2024, item 725), that is, to confirm that those solutions meet the technical and building codes and the principles of technical knowledge and ensure compliance of civil structures with the essential requirements. A technical recommendation is a voluntary document.

2. Subject of the recommendation

This technical recommendation concerns the technical solution being a fireplace panel available under the trade name STABICA LC600. The STABICA LC600 fireplace panel is made of a composite mixture containing inorganic thermally expanded glass granulate[1)] based on recycled post-consumer glass, Portland cement, and mineral and purifying admixtures.

The STABICA LC600 fireplace panel is supplied in the following dimensions: length × width × thickness:

- 1000 mm × 610 mm × 30 mm,
- 1000 mm × 610 mm × 40 mm.

For each of the formats mentioned above, the fireplace panel shows a dimension tolerance of ± 1.5 mm for length, ± 1.5 mm for width, and ± 1.0 mm for thickness.

The STABICA LC600 fireplace panel is a non-dusting product.

The manufacturer is responsible for the product specified in this technical recommendation. The fireplace panel is manufactured by STABICA Sp. z o.o., ul. Płocka 81A, 32-543 Myślachowice. The STABICA LC600 fireplace panel is manufactured at a plant located at ul. Płocka 81A, 32-543 Myślachowice.

3. Intended purpose, scope and conditions of use

The STABICA LC600 fireplace panel covered by this recommendation is designed for use as the main component of lightweight and warm indoor mantels.

Produced with a composite mixture, the STABICA LC600 fireplace panel can collect and transfer heat with its entire surface from the center of the mantel to the room, at a temperature range being safe for the user. It thus offers heat transferred in a way being as safe as possible for humans: by radiation. Once the fuel in the fireplace is burned out, the heat is still transferred through the STABICA mantel for many hours.

[1)] According to the manufacturer's declaration, the product is not classified as a product presenting risk and is excepted from registration duty in accordance with Regulation (EC) No. 1907/2006 (REACH) amended by Regulation (EC) No. 987/2008)

The STABICA LC600 fireplace panel is a technical solution being a component of an assembly kit[2)] delivered by the manufacturer as a whole system that consists of the following:

- STABICA IZOL insulation panel,
- STABICA Support reinforcement strip,
- STABICA LC HT Primer high-temperature primer,
- STABICA LC HT Glue quick-setting assembly adhesive,
- STABICA Mortar adhesive and reinforcing mortar,
- STABICA Finish finishing putty,
- STABICA Mesh reinforcing mesh,
- STABICA Fix 50 mounting bolts,
- STABICA TDN mounting plugs.

When installing the STABICA LC600 fireplace panel, it must be ensured that the base and joined surfaces is even, dry, clean, and free of dust and grease. The fireplace panel can be machined by means of the basic woodworking tools and machines, and plastering and painting tools can be used for finishing the mantel. The temperature of glued elements should be +5°C to +30°C.

The face sides of the STABICA LC600 fireplace panel differ by appearance and by the machining used. The smooth side of the panel is intended for the inside of the mantel and should not be treated. It is resistant to dust that may settle in the fireplace. The other side of the panel, machined during production, is intended for subsequent finishing layers of the fireplace to be applied with the adhesive and reinforcement mortar, reinforcing mesh and finishing coat. Before applying further layers, it should be carefully primed with the primer to equalize the absorptivity of the base.

The detailed assembly manual is available on the manufacturer's website (www.stabica.com).

The STABICA LC600 should be used according to the process engineering design prepared for the particular structure and to the manufacturer's instructions. The design should include the following:

- applicable technical and building codes, in particular the Regulation of the Minister of Infrastructure of April 12, 2002 on the technical conditions to be met by buildings and their locations (consolidated text: Journal of Laws of 2022, item 1225),
- this technical recommendation.

Any construction works related to the use of STABICA LC600 fireplace panel should be carried out by specialized companies according to the manufacturer's instructions.

The ambient temperature during the building of mantels with the use of STABICA LC600 should comply with the manufacturer's instructions.

[2)] The assembly kit is not covered by this Technical Recommendation

4. Performance characteristics

The performance characteristics and the test methods of STABICA LC600 are presented in Table 1.

Table 1. Performance characteristics of STABICA LC600 fireplace panel[3]

Essential characteristics	Performance characteristic	Test method
Reaction to fire class, classification	A1	PN-EN 13501-1:2019-02
Bending strength, MPa	> 1.5	PN-EN 993-6:2019-01
Compressive strength, MPa	> 7.0	PN-EN ISO 1927-6:2013-06
Thermal expansion under 0.01 MPa load, %, at:		PN-EN 993-19:2006
50 °C	+0.07	
100 °C	+0.06	
150 °C	+0.02	
200 °C	0.00	
250 °C	-0.01	
300 °C	-0.03	
350 °C	-0.07	
400 °C	-0.15	
450 °C	-0.27	
500 °C	-0.45	
550 °C	-0.69	
600 °C	-1.02	
Thermal conductivity, W/(m · K), at:		PN-EN 993-15:2006
30 °C	0.161	
105 °C	0.162	
302 °C	0.178	
503 °C	0.208	
757 °C	0.248	
Specific heat, cal/(g · °C), at:		PBC-18-1/ edition 6 of January 18, 2010
100 °C	0.242	
150 °C	0.222	

5. Packaging, transport and storage

The STABICA LC600 fireplace panel can be transported by any means, properly protecting the packaging against damage, and should be stored in undamaged manufacturer's packaging, in dry locations, at a temperature of +5 to +25°C.

3) At dry density of 670 kg/m^3 determined as per PN-EN 12390-7:2019-08

6. Works acceptance conditions

The basis for the acceptance of assembly works is the confirmation that they have been performed in accordance with the design and as-built documents.

The Contractor must present:

- full as-built documentation including a declaration of compliance of the works with the design,
- control reports.

The acceptance certificate should contain:

- a list of the results in-process and final controls,
- a statement that the assembly works comply or do not comply with the design,
- a list of documents to be delivered to the investor.

Once all assembly works are completed, the final acceptance procedure should be carried out and confirmed by the acceptance certificate.

7. Operating requirements, maintenance

The STABICA LC600 fireplace panels require no maintenance during use after building a lightweight warm mantel.

Any contamination of the mantel's outer layer should be dry- or wet-cleaned with detergents designed for the type of surface of the mantel.

8. Formal and legal determinations

Technical Recommendation ICiMB-RT-2024/0006 edition 1:

- is a document certifying the suitability of STABICA LC600 fireplace panel in the scope indicated in the Recommendation and confirming the product's compliance with the principles of technical knowledge;
- does not affect any rights arising from industrial property regulations, in particular the Industrial Property Law of June 30, 2000 (consolidated text: Journal of Laws of 2023, item 1170). Ensuring such rights is the responsibility of the party using this Technical Recommendation;
- does not release the manufacturer from its liability for proper quality of the product, neither the work contractors from their liability for its proper use.

By issuing a technical recommendation, Łukasiewicz Research Network – Institute of Ceramics and Building Materials assumes no liability for any infringement of exclusive or acquired rights.

The brochures, announcements or any other documents referring to the use of STABICA LC600 fireplace panel in construction may contain information about Technical Recommendation ICiMB-RT-2024/0006 edition 1 issued for that solution.

9. Expiry date

Technical Recommendation ICiMB-RT-2024/0006 edition 1 expires on December 9, 2029.

The validity of this technical recommendation may be extended for further periods.

10. List of documents used in the procedure

Related standards and documents

PN-EN 13501-1:2019-02	Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests
PN-EN 993-6:2019-01	Methods of test for (dense) shaped refractory products -- Part 6: Determination of modulus of rupture at ambient temperature
PN-EN 993-15:2006	Methods of test for dense shaped refractory products - Determination of thermal conductivity by the hot-wire (parallel) method
PN-EN 993-19:2006	Methods of test for dense shaped refractory products - Part 19: Determination of thermal expansion by a differential method
PN-EN ISO 1927-6:2013-06	Monolithic (unshaped) refractory products - Part 6: Measurement of physical properties (ISO 1927-6:2012)
PN-EN 12390-7:2019-08	Testing hardened concrete -- Part 7: Density of hardened concrete
PBC-18-1/ edition 6 of January 18, 2010	Determination of specific heat

Classifications, test reports, other reports

Strength, Expansion, Shrinkability, Specific Heat and Thermal Conductivity Test Report No. 338z/2024, Łukasiewicz Research Network – Institute of Ceramics and Building Materials, Fireproof Materials Center in Gliwice.

Density Test Report No. KB/349/2024, Łukasiewicz Research Network – Institute of Ceramics and Building Materials, Sustainable Construction Center in Kraków.

Reaction to Fire Classification Report KG/84/24/N, Łukasiewicz Research Network – Institute of Ceramics and Building Materials, Fire Safety and Acoustics Center in Kraków.

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