

Technical Conclusion on Compliance

of stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO, supplied by TechnoNICOL-Stroitel'nye Sistemy LLC for the construction of LEED®-certified facilities

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General information

This expert assessment was made in September, 2019 by EcoStandard group for TechnoNICOL - Stroitel'nye Sistemy LLC.

The Contractor acted in accordance with the Law as an independent expert and has no financial, property or any other interest in the research result. This expert assessment was made only on the basis of results of the performed research according to the experts' specific knowledge.

Purpose of research

Assessment of compliance with LEED requirements for TECHNO products of TechnoNICOL-Stroitel'nye Sistemy LLC.

The research reviews the following standards: LEED 2009 for New Construction and Major Renovation Rating System or LEED 2009 for Core&Shell Development Rating System and LEED Reference Guide for Green Building Design and Construction, including the appendices thereto, and LEED v4 for New Construction and LEED v4 Reference Guide for Green Building Design and Construction.



Objects of research

List of products

The object of this expert assessment is TECHNO products:

- *TECHNOROOF N*
- *TECHNOROOF V*
- *TECHNOROOF*
- *TECHNOSANDWICH*
- *TECHNOACOUSTIC*
- *TECHNOLITE*
- *TECHNOBLOCK*
- *TECHNOVENT*
- *TECHNOFLOOR*
- *TECHNOFACADE*

Manufacturers' addresses

- LLC TECHNO Plant, bldg. 58, 21, Vostochny Promuzel, Ryazan, Ryazan Region, 390047
- LLC TECHNO Plant, Branch, 7 Avtozavodskaya st., Zainsk, Republic of Tatarstan, Russia, 423520
- LLC TECHNO Plant, Branch, 5 Valdaiskaya st., Chelyabinsk, Russia, 454081
- LLC TECHNO Plant, Branch, 1 km northeast of Sodruzhestvo st, No. 1 Krasnyi Sulin, Rostovskaya oblast, Russia, 346353
- LLC TECHNO Plant, Branch, 1 Pervaya Zheleznodorozhnaya st., Yugra, Kemerovskaya oblast, Russia, 652050
- LLC TECHNO Plant, Branch, 14 Rabochaya st., Belgorod, Russia, 308013
- LLC TECHNO Plant, Branch, 8 prospect 60-ti let Oktyabrya, Khabarovsk, Russia, 680015
- LLC TechnoNICOL-Dalnyi Vostok, 8 prospect 60-ti let Oktyabrya, Khabarovsk, Russia, 680015

Official web-site:

<http://www.tn.ru>

<https://nav.tn.ru/catalog/teploizolyatsiya/kamennaya-vata-teploizolaciya/>

Telephone: +7 (800) 200-05-65

E-mail: prc@tn.ru

General information about LEED standard, its application and relevance

LEED Green Building Rating System® is a voluntary standard that defines high performance requirements for green buildings.

The built environment has a profound impact on our natural environment, economy, health and productivity.

Designers, builders, operators and owners are transforming the built environment using the LEED® green building certification program developed by the U.S. Green Building Council (USGBC). They achieve this through the application of modern approaches to the design, taking into account natural and infrastructural features of a site, needs of end users. Considerable contribution to the creation of «green» building makes use of sustainable and safe construction and finishing materials.



LEED® system covers the various types of projects:

- Building Design and Construction
- Building Operations and Maintenance
- Interior Design and Construction
- Homes
- Neighborhood Development

LEED is a rating system. Based on the number of points, the building can be rated:

- LEED Platinum (80+ points),
- LEED Gold (60-79 points),
- LEED Silver (50-59 points),
- LEED Certified (40-49 points).

The process of assessment and certification is comprehensive. The estimated building must comply with the requirements that are called «credits». Main sections (may vary depending on the version of LEED® and the type of project) are as follows:

- Integrated Process LEEDv4 only
- Location & Transportation LEEDv4 only
- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation in Design
- Regional Priorities

! LEED® Certification is only for projects, not products. But products used as building materials for the project can contribute toward the rating points needed for certification purposes.

Information about the product and its advantages for green building

Supplied by TechnOMICOL-Stroitel'nye Sistemy LLC, stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO are fire-resistant, hydrophobized heat and sound insulating material of basaltic rock wool.

Heat insulation-sound proofing stone wool slabs TECHNO are used in civil and industrial engineering as a thermal insulation layer in new construction and reconstruction of buildings used for different purposes.

Materials and specificity of application

TECHNONICOL stone wool is a heat-insulating construction material.

Low thermal conductivity is achieved by keeping a large amount of motionless air inside thermal insulation with the help of closely interlaced fibers of stone wool.

The fiber structure provides good acoustic and sound-absorbing properties of the material. TECHNONICOL products help to reduce the airborne and impact noise level in soundproof structures of various types: partitions, flooring and other construction elements.

Stone wool slabs are easily cut with an affordable tool: a knife or a fine-toothed saw.

Detailed information on each type of the product can be found on the official website:

<https://nav.tn.ru/catalog/teploizolyatsiya/kamennaya-vata-teploizolaaciya/>.

TECHNOROOF is used in civil and industrial building as a heat-insulating layer in new construction as well as in the reconstruction of buildings and structures of various purposes.

TECHNOROOF N is designed to be used as a lower layer in a two-layer thermal insulation scheme in coatings made of reinforced concrete or metal profiled flooring.

TECHNOROOF V is used as a material for the installation of a top layer in flat roofing systems when multi-layer heating is needed and as the main heat-insulating layer in a single-layer insulation in coatings of reinforced concrete or metal profiled flooring with a roofing carpet of rolled and mastic materials, also in case of no protective screeds installed.

TECHNOSANDWICH - **TECHNOSANDWICH BETON** concrete slabs are intended for use as a heat-insulating layer in three-layer concrete and reinforced concrete wall panels. **TECHNOSANDWICH C** slabs are designed as a heat-insulating layer in three-layer wall sandwich panels with metal sheathing. **TECHNOSANDWICH K** slabs are intended to be used as a heat-insulating layer in three-layer roofing sandwich panels with metal sheathing.

TECHNOACOUSTIC is designed for use as a sound-absorbing layer in construction of frame-sheathing partitions and claddings, in construction of suspended ceilings, as well as in ceilings with a non-load scheme of laying insulating material.

TECHNOLITE is designed for heat and sound insulation of building residential and industrial structures where heat insulation does not receive external loads (mansards, attics, floorings with the insulation between floor logs; frame partitions), as well as an internal thermal insulation layer in facade systems with an air gap when two-layer insulation is used.

TECHNOBLOCK is recommended to be used as heat and sound insulation of various types of layered masonry, frame walls with various types of finishing. And also as an internal heat-insulating layer in suspended facade systems with an air gap in a two-layer insulation scheme.

TECHNOVENT is intended for use in industrial and civil engineering as a heat and sound insulating layer of ventilated facade systems.

TECHNOFLOOR - **TECHNOFLOOR STANDARD** slabs are designed for heat and sound insulation of floating floor systems when concrete or cement screed is put directly on thermal insulation. **TECHNOFLOOR PROF** slabs are designed for heat and sound insulation of floor systems with increased standard loads, including floating floor, heated floor, industrial floor systems for screed, sports facilities and warehouses.

TECHNOFACADE is intended to be used in civil and industrial building as heat and sound insulation in systems of external wall insulation with a protective and decorative layer of thin-layer plaster.

Advantages for green building

Stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO have number of properties that are advantages in green building:



Durability - according to the study performed by the Research Institute of Building Physics of the Russian Academy of Architecture and Building Sciences (NIISF RAASN), the service life of stone wool heat-insulating slabs is at least 50 years. During the research, NIISF experts moistened the slabs samples, exposed them to repeated cycles of freezing and defrosting.

High resistance of materials to mechanical loads is ensured by the fiber properties and the stone wool structure. To keep the shape, thickness and reliable fastening of material in a structure, heat-insulating materials should have high resistance to deformation. This property is necessary for reliable and durable insulation of structure without increasing the loss of quality over time.



Energy efficiency - the use of TECHNO thermal insulation in building structures allows to minimize heat loss and increase the efficiency of thermal characteristics of buildings, structures and industrial facilities. High resistance to heat transfer is achieved by holding a large amount of motionless air inside thermal insulation with the help of closely interlaced fibers of stone wool.



Acoustic comfort – fibrous structure of TECHNICAL stone wool products provides good acoustic and sound-absorbing properties of the material. The products have high sound absorption coefficients in a wide frequency range that helps to reduce the level of airborne and impact noise in soundproof structures of various types: partitions, flooring systems and other structures.



Resource saving - stone wool slabs are easily cut with an affordable tool: a knife or a fine-toothed saw. It is easy to make a pattern of the proper size and install it in a structure, as well as easy to control the quality of installation. Slabs of stone wool are also available with guaranteed stable geometric dimensions due to automation and mechanization of the technological process. Stable geometric dimensions allow mounting slabs with a tightly fitting to each other or to the frame of a building structure, depending on the installation conditions.

Regional materials

The LEED (v2009) standard has a requirement on regional sourcing of materials used in construction. It means that extraction of raw materials and production facilities shall be located within a radius of not more than 500 miles (approximately 800 km).

Purchasing materials produced nearby a certified building can help reduce adverse environmental impacts and energy resources consumption during transportation due to reduction of transportation distance.

Addresses of raw material suppliers

Raw materials for stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO are gabbro-diabase, porphyrite, basalt, limestone, fiberization waste briquette, dolomite, blast furnace slag, coke.

The information about raw material suppliers is in Table 1.

Table 1

Material	Supplier	Supplier's address	Transportation method
Gabbro-diabase	Chevzhavara	ООО "Prionezhskaya gornaya kompaniya", extraction site " Chevzhavara ", Padozero, Pryazhinskiy raion, Republic of Karelia, 186130	railway
Gabbro-diabase	Souznoe	ООО "Stroitelnyi kamen", 1A Sverdlova st., Kvartaly, Chelyabinskaya obl., 457359	railway
Gabbro-diabase	Bugotagskiy	АО "Novosibirskoe karieroupravlenie", 22 Komsomolskiy prospect, Novosibirsk, 630004	railway
Porphyrite	Novogornoe	ООО "TD RADOK", office 706, 30 Entuziastov st., Chelyabinsk, 454048	railway
Basalt	Kirovskiy	ООО "Primbazalt", 1 Nesterova, Vladivostok, Primorsky Krai, 690016	railway
Limestone	Teplozerski (Khabarovsk)	ООО «Cementny dom», 22A Postysheva st., Khabarovsk, Khabarovskiy Krai, 680030	railway
Fiberization waste briquette	<i>Made of fiberization waste</i>	Internal area of briquette formation	-
Dolomite	Dankov	ОАО "Dolomit", 1 Sverslova st., Dankov, Lipetskaya obl., 399854	railway
Blast furnace slag	NLMK	ПАО "NLMK", 2 Metallurgov ploschad, Lipetsk, 398040	railway
Blast furnace slag	MMK	ПАО "Magnitogorskiy metallurgicheskiy kombinat", 93 Kirova st., Magnitogorsk, Chelyabinskaya obl., 455000	railway
Coke	<i>Poland</i>	Polbiding Sp.z.o.o.Sp.k. (Poland) 1C Ul.Dekoracyjna, Zielona Gora, 65-722	railway
Coke	<i>Altai Krai</i>	ОАО "Altai-Koks", 2 Pritaezhnaya st., Altai Krai, Zarinsk, Россия, 659107	railway

The batch formula with percentage content of raw materials is described in Table 2.

Table 2

Batch formula	Content
Stone	55-65%
Briquette	20-30%
Dolomite	12-15%
Blast furnace slag	8-12%
Coke	12-14%

Addresses of manufacture

The products are supplied by TechnoNICOL and manufactured from the materials in Table 1 at the following facilities:

1. Ryazan

LLC TECHNO Plant, bldg. 58, 21, Vostochny Promuzel, Ryazan, Ryazan Region, 390047

Material	Supplier	Distance between extraction site and facility, km	Distance considering the transportation method ¹ , km
Gabbro-diabase	Chevzhavara	1200	400
Gabbro-diabase	Souznoe	1800	600
Gabbro-diabase	Bugotagskyi	3300	1090
Porphyrite	Novogornoe	1700	560
Basalt	Kirovskiy	8900	2940
Limestone	Teploozerski (Khabarovsk)	8300	2740
Fiberization waste briquette	<i>Made of fiberization waste</i>	-	-
Dolomite	Dankov	300	100
Blast furnace slag	NLMK	270	90
Blast furnace slag	MMK	1600	530
Coke	<i>Poland</i>	1900	630
Coke	<i>Altai Krai</i>	3600	1190

¹ Transportation coefficient : railway transport – 0,33; inland water transport – 0,5; sea transport – 0,067

2. Zainsk

LLC TECHNO Plant, Branch, 7 Avtozavodskaya st., Zainsk, Republic of Tatarstan, Russia, 423520

Material	Supplier	Distance between extraction site and facility, km	Distance considering the transportation method, km
Gabbro-diabase	Chevzhavara	1800	600
Gabbro-diabase	Souznoe	860	280
Gabbro-diabase	Bugotagskiy	2400	790
Porphyrite	Novogornoe	750	250
Basalt	Kirovskiy	8000	2640
Limestone	Teploozerski (Khabarovsk)	7400	2440
Fiberization waste briquette	<i>Made of fiberization waste</i>	-	-
Dolomite	Dankov	1200	400
Blast furnace slag	NLMK	1100	360
Blast furnace slag	MMK	680	230
Coke	<i>Poland</i>	2800	920
Coke	<i>Altai Krai</i>	2700	890

3. Chelyabinsk

LLC TECHNO Plant, Branch, 5 Valdaiskaya st., Chelyabinsk, Russia, 454081

Material	Supplier	Distance between extraction site and facility, km	Distance considering the transportation method, km
Gabbro-diabase	Chevzhavara	2600	860
Gabbro-diabase	Souznoe	320	105
Gabbro-diabase	Bugotagskiy	1500	500
Porphyrite	Novogornoe	12	4
Basalt	Kirovskiy	7300	2400
Limestone	Teploozerski (Khabarovsk)	6500	2150
Fiberization waste briquette	<i>Made of fiberization waste</i>	-	-
Dolomite	Dankov	1800	590
Blast furnace slag	NLMK	1700	560
Blast furnace slag	MMK	450	150
Coke	<i>Poland</i>	3500	1150
Coke	<i>Altai Krai</i>	1900	630

4. Krasnyi Sulin

LLC TECHNO Plant, Branch, 1 km northeast of Sodruzhestvo st, No. 1 Krasnyi Sulin, Rostovskaya oblast, Russia, 346353

Material	Supplier	Distance between extraction site and facility, km	Distance considering the transportation method, km
Gabbro-diabase	Chevzhavara	2000	660
Gabbro-diabase	Souznoe	2100	690
Gabbro-diabase	Bugotagskyi	4400	1450
Porphyrite	Novogornoe	2100	690
Basalt	Kirovskiy	9500	3140
Limestone	Teploozerski (Khabarovsk)	10000	3300
Fiberization waste briquette	<i>Made of fiberization waste</i>	-	-
Dolomite	Dankov	700	230
Blast furnace slag	NLMK	620	205
Blast furnace slag	MMK	2000	660
Coke	<i>Poland</i>	2600	860
Coke	<i>Altai Krai</i>	4000	1320

5. Yugra

LLC TECHNO Plant, Branch, 1 Pervaya Zheleznodorozhnaya st., Yugra, Kemerovskaya oblast, Russia, 652050

Material	Supplier	Distance between extraction site and facility, km	Distance considering the transportation method, km
Gabbro-diabase	Chevzhavara	4100	1350
Gabbro-diabase	Souznoe	2000	660
Gabbro-diabase	Bugotagskyi	170	55
Porphyrite	Novogornoe	1700	560
Basalt	Kirovskiy	5500	1800
Limestone	Teploozerski (Khabarovsk)	4800	1580
Fiberization waste briquette	<i>Made of fiberization waste</i>	-	-
Dolomite	Dankov	3500	1150
Blast furnace slag	NLMK	3400	1120
Blast furnace slag	MMK	1900	630
Coke	<i>Poland</i>	5300	1750
Coke	<i>Altai Krai</i>	420	140

6. Belgorod

LLC TECHNO Plant, Branch, 14 Rabochaya st., Belgorod, Russia, 308013

Material	Supplier	Distance between extraction site and facility, km	Distance considering the transportation method, km
Gabbro-diabase	Chevzhavara	1700	560
Gabbro-diabase	Souznoe	2200	730
Gabbro-diabase	Bugotagskyi	3600	1190
Porphyrite	Novogornoe	2000	660
Basalt	Kirovskiy	9400	3100
Limestone	Teploozerski (Khabarovsk)	8600	2840
Fiberization waste briquette	<i>Made of fiberization waste</i>	-	-
Dolomite	Dankov	460	150
Blast furnace slag	NLMK	380	125
Blast furnace slag	MMK	1900	630
Coke	<i>Poland</i>	1900	630
Coke	<i>Altai Krai</i>	3900	1290

7. Khabarovsk

LLC TechnoNICOL-Dalnyi Vostok, 8 prospect 60-ti let Oktyabrya, Khabarovsk, Russia, 680015

Material	Supplier	Distance between extraction site and facility, km	Distance considering the transportation method, km
Gabbro-diabase	Chevzhavara	8900	2940
Gabbro-diabase	Souznoe	6600	2180
Gabbro-diabase	Bugotagskyi	4900	1620
Porphyrite	Novogornoe	6600	2180
Basalt	Kirovskiy	750	250
Limestone	Teploozerski (Khabarovsk)	13	5
Fiberization waste briquette	<i>Made of fiberization waste</i>	-	-
Dolomite	Dankov	8400	2770
Blast furnace slag	NLMK	8300	2740
Blast furnace slag	MMK	6800	2240
Coke	<i>Poland</i>	10000	3300
Coke	<i>Altai Krai</i>	5100	1680

Conclusion:

The use of TechnoNICOL TECHNO stone wool slabs as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures may help to earn extra credit points in LEED system for regional sourcing and manufacturing.

Green lines indicates the information which is potentially² can be used when the percentage of regional raw material usage is calculated.

² In LEED calculations the distance between extraction site and certification object (for example, a building under construction, which is supplied with TECHNO products) should be taken into account. If this distance is more than 800 km, the percent of relative raw material is not estimated.

List of credits where the product may contribute to earning points

The table below reviews the requirements of various categories and credits of the LEED standard, where points can be earned by using stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO under certain conditions.

Table 3

LEED categories & credits	LEED requirements	Impact of TECHNO stone wool slabs on the score	Points
Energy and Atmosphere (EA)			
<i>LEED v2009</i> Minimum Energy Performance	10% performance improvement for new buildings or 5% better performance for renovated existing buildings compared with the baseline building performance rating calculated as per the method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2007 for the whole building simulation model.	Stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO are used as a thermal insulation material. This helps to reduce the thermal conductivity of the structures, energy consumption for heating and comply with the Prerequisite.	Prerequisite
<i>LEED v4</i> Minimum Energy Performance	Energy performance improvement: 5% for new buildings 3% for renovated existing buildings 2% for «Core and Shell» (w/o interior finish) compared with the baseline building performance rating calculated as per the method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2010 for the whole building simulation model.	Stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO are used as a thermal insulation material. This helps to reduce the thermal conductivity of the structures, energy consumption for heating and comply with the Prerequisite.	Prerequisite
<i>LEED v2009/ LEED v4</i> Optimize Energy Performance	Improved building performance compared with the baseline building performance rating, calculated as per the method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2007 for the whole project.	Building insulation helps to reduce energy consumption and maximize thermal comfort. The ultimate result depends on thermal resistance and thermal conductivity of the whole insulation, on structural characteristics and design solutions combined. Use of TECHNO slabs helps to earn points due to energy savings throughout the full-year cycle.	1

Materials & Resources (MR)			
<p><i>LEED v4</i></p> <p>Construction and Demolition Waste Management Planning</p>	<p>Reduction of construction waste and demolition debris removed to disposal areas and waste incineration plants due to recycling, salvaging and processing the materials.</p>	<p>Waste produced from the installation and adjustment of stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO can be salvaged and further recycled and used as raw material for new products ensuring compliance with this Prerequisite.</p>	<p>Prerequisite</p>
<p><i>LEED v2009</i></p> <p>Construction Waste Management</p> <p><i>LEED v4</i></p> <p>Construction and Demolition Waste Management Planning</p>	<p>Recycling and/or salvaging nonhazardous construction waste and demolition debris. Calculation may be done either by weight or volume, but must be consistent throughout. The minimum content of recycled or salvaged waste: 50% – 1 point, 75% - 2 points.</p>	<p>Waste produced from the installation and adjustment of stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO can be salvaged and further recycled and used as raw material for new products ensuring compliance with this Credit.</p>	<p>1</p>
<p><i>LEED v2009</i></p> <p>Regional Materials</p>	<p>Construction materials/products (or components thereof) extracted and manufactured within a 500-mile (800-km) radius from the project site must account for 10% (1 point) or 20% (2 points) of the total cost of materials at the least.</p>	<p>The use of TECHNO stone wool slabs in construction may help to earn extra points in LEED system for regional sourcing and manufacturing (see pp. 9-14).</p>	<p>1</p>
Качество внутренней среды - Indoor Environmental Quality (IEQ)			
<p><i>LEED v2009</i></p> <p>Thermal Comfort – Design</p> <p><i>LEED v4</i></p> <p>Thermal Comfort</p>	<p>Design HVAC systems and building envelope to meet the requirements of «ASHRAE Standard 55-2004 (55-2010 in LEED v4), Thermal Comfort Conditions for Human Occupancy».</p>	<p>Stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO (ceilings, walls) contribute to improvements in the building thermal performance.</p>	<p>1</p>
<p><i>LEED v2009</i></p> <p>Mold Prevention</p> <p>(LEED for Schools 2009 New Construction)</p>	<p>In addition to IEQ Credits 3.1, 7.1, and 7.2, provide heating, ventilating and air conditioning (HVAC) systems and controls designed to limit space relative humidity to 60% or less during all load conditions, both occupied and unoccupied.</p>	<p>Stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO are able to offset the impact of various macro and microorganisms: the material does not provide breeding grounds for mold and bacterial growth as well as for insects and rodents.</p>	<p>1</p>

Conclusion, calculation of possible points and summary of the assessment performed

The results of the assessment indicate that stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO provide a number of advantages: durability, energy efficiency, different products for various types of structures, regional areas existence, bio-stability, ease of installation, and resistance to physical effects.

The assessment results for the products:

TECHNOROOF N

TECHNOROOF V

TECHNOROOF

TECHNOSANDWICH

TECHNOACOUSTIC

TECHNOLITE

TECHNOBLOCK

TECHNOVENT

TECHNOFLOOR

TECHNOFACADE

supplied by TechnoNICOL-Stroitel'nye Sistemy LLC (see manufacturers' addresses at the page 4) led to **the conclusion that they are fit** for construction of «green» buildings to be certified under international certification systems, including LEED.

Therefore, use of stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO may help to earn up to **5 points and comply with the requirements** depending on the type and version of the LEED standard and on the number of design solutions involving the use of TECHNO stone wool slabs.

Preparation of information

Information about the applicability of stone wool slabs, used as heat insulation-sound proofing layer in construction of walls, roof, flooring, interior structures, TECHNO supplied by TechnoNICOL-Stroitel'nye Sistemy LLC in the construction of objects certified in accordance with LEED® is prepared by specialists of Certification department of EcoStandard group:

Alina Vigovskaya (project manager of Certification department, LEED AP BD+C)

Natalia Savkova (coordinator of Certification department)

Approved by *Kseniya Lukyashchenko* (PhD, DGNB Auditor, LEED AP BD + C, DGNB Auditor, BREEAM Assessor)



EcoStandard group has been working successfully throughout Russia and the CIS since 1997. This is the leader in the field of environmental monitoring and expertise services, in the field of occupational safety, engineering studies, development of project documentation, implementation of «green» technologies, international certification, environmental PR.

EcoStandard group has successful experience as with objects of federal importance, projects of the largest Russian and International corporations, as well as in providing services to small and medium businesses.

Among our clients there are:

- OOO «Directorate Sochi-2014»,
- RAO «UES of Russia»,
- OAO «Gazprom»,
- ZAO «UralSib»,
- OAO «Russian Railways»,
- OAO «Norilsk Nickel»,
- Banks OAO «Alfa Bank», «VneshEconombank», «Swiss Credit First Boston», «Mezhprombank»,
- Telecompany «CNN»,
- «IKEA», «Leroy Merlin», «Media Markt», hypermarkets «O'key», «Decatlon»
- Hotels «Ararat Park Hyatt Moscow», «Novotel»,
- Companies «Siemens», «SAS», «THK-BP», «Evrocement», «FM Logistic Vostok», «Office Solutions», «BBDO», «Deloitte», «Xerox», «Mail.ru», «Nestle», «Coalco Development», «Rosgosstrakh» and etc.

EcoStandard group is

- Member of **U.S. Green Building Council Council on «green» construction (NP SPZS)**
- Accredited certification body of the **Center for Environmental Certification «Green Standards»**
- One of the developers of green real estate assessment standards «Green Standards»
 - assessment of low-rise suburban real estate **EcoVillage**
 - assessment of green offices **EcoPro**
 - assessment of building materials **EcoMaterial**
 - assessment of environmental sustainability «**SAR-SPZC**»

EcoStandard group provides a full range of consulting services for the project certification according to standards LEED, BREEAM and DGNB and have a **unique practice experience in Russia** – the first Russian company that successfully performed the certification of the object under LEED 2009 NC system to reach LEED Silver level.

Objects certified by EcoStandard group:

- Scientific-industrial complex Hamilton Standard Nauka, LEED
- VIP eco-office Sberbank of Russia, BREEAM
- R&D Renova, LEED
- The first certified object in Skolkovo, LEED
- MARS office, LEED
- Raymond, the plant for production of fasteners, LEED
- Administrative building Clinic new medical technologies (Klinika novykh meditsinskiykh tekhnologiy), BREEAM
- And others.