ZELENI STANDARD ZA PROCENU FUDBALSKIH STADIONA ZA FIFA SVETSKI KUP 2018. GODINE

GREEN STANDARD FOR EVALUATING FOOTBALL STADIUMS FOR THE 2018 FIFA WORLD CUP

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<https://doi.org/10.24094/kgkh.017.48.1.11>

Ovaj rad je posvećen posebnim zahtevima ruskog zelenog standarda RUSO za fudbalske stadione koji će se primenjivati za sertifikaciju fudbalskih stadiona na svetskom prvenstvu koje FIFA organizuje 2018. godine u Rusiji. Uz primenu zahteva FIFA, svi fudbalski stadioni za svetsko prvenstvo 2018. godine moraju da imaju sertifikat u skladu sa metodologijom održivog razvoja.

Nacionalni zeleni standard zasnovan je na proceni da li su fudbalski stadioni za svetsko prvenstvo usklađeni sa nacionalnim građevinskim zakonima u pogledu arhitekture, konstrukcije, plana lokacije i tehnike, i sa nacionalnim ekonomskim i ekološkim normama sa posebnom pažnjom na nacionalne prioritete. Zahtevi zelenog standarda su zasnovani na principima i pristupima koncepta održivosti. U sadašnjoj fazi ovi zahtevi od 80 do 90% odgovaraju postojećim ruskim zahtevima i normama. U suštini, referentni pokazatelji ovog koncepta čine metodološku osnovu za formulisanje potrebnih kriterijuma zaštite životne sredine i energetske efikasnosti objekta koji treba da bude sertifikovan. Stoga ceo taj proces ni na koji način nije artificijelan, već pre predstavlja nastavak prirodnog procesa, ali sa naglaskom na relevantnim kriterijuma koje priznaje međunarodna zajednica i koji su usaglašeni sa zahtevima FIFA. Ruski nacionalni standard je zasnovan na iskustvima u projektovanju, izgradnji i eksploataciji ruskih fudbalskih stadiona, uključujući stadione u Grozniju, Kazan, i u Rostovu na Doni.

Ključne reči: održivi razvoj, zelena sertifikacija, RUSO, fudbalski stadioni

The paper is devoted to the particularities of Russian Green Standard RUSO Football Stadiums for certifying football stadiums of the 2018 FIFA World Cup in Russia. In appliance with the requirements of FIFA all football stadiums for the 2018 World Cup must be certified in accordance with the methodology of sustainable development.

The national green standard is based on an assessment of the degree to which World Cup football stadiums conform to national building codes in terms of architecture, structures, site plan, and engineering, and national economic and environmental

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norms with a particular focus on national priorities. The requirements of the green standard are based on principles and approaches of the sustainability concept. At the current stage, these requirements correspond by 80-90% to the existing Russian requirements and norms. Essentially, the reference indicators of this concept lay the methodological groundwork for formulating the required criteria of environmental and energy efficiency of a building subject to certification. Therefore, the entire certification process is not artificial in any way. Rather, it is a continuation of the natural process but with a focus on the relevant criteria that are recognized by the international community and conform to FIFA requirements. The Russian national standard is based on the experience of designing, building, and operating Russian football stadiums, including those in Grozny, Kazan, and Rostov-on-Don.

Key words: sustainable development, green certification, RUSO, football stadiums

National Green Standard RUSO Football Stadiums

Football for the Planet is the official environmental program of FIFA and aims to mitigate the negative impact of its activities on the environment. It is the continuation of the environmental programs that have been developed for FIFA competitions since the 2006 FIFA World Cup in Germany.

2018 FIFA World Cup will be hosted by Russian Federation. Dates are: 14 June – 15 July (32 days). The final will take place on 15 July in Moscow at the Luzhniki Stadium.

Luzhniki Stadium, Moscow.

*Krestovsky Stadium
(Saint Petersburg Stadium),
Saint Petersburg. Capacity: 68,134*

*Mordovia Arena (new stadium),
Saransk. Capacity: 45,015*

*Kaliningrad Stadium (new stadium),
Kaliningrad. Capacity: 35,212*

*Cosmos Arena (Samara Arena) (new stadium),
Samara. Capacity: 44,918*

*Luzhniki Stadium (upgraded),
Moscow. Capacity: 81,000*

*Nizhny Novgorod Stadium
(new stadium), Nizhny Novgorod.
Capacity: 44,899*

*Otkrytiye Arena (Spartak Stadium),
Moscow. Capacity: 45,360*

*Volgograd Arena (rebuilt),
Volgograd. Capacity: 45,568*

*Rostov Arena (new stadium),
Rostov-on-Don. Capacity: 45,000*

*Kazan Arena (new stadium), Kazan.
Capacity: 45,379*

Fisht Olympic Stadium (Fisht Stadium), Sochi. Capacity: 47,659

Central Stadium (Ekaterinburg Arena), (upgraded), Ekaterinburg. Capacity: 35,000

A total of 64 matches will be played in 12 venues located in 11 host cities

In accordance with FIFA requirements, the National Green Standard for Evaluation of Football Stadiums shall ensure the capability to certify stadiums used for the 2018 World Cup at a level comparable to internationally recognized „green“ standards, specifically to LEED certification standards. It is required that World Cup stadiums comply with „green construction“ requirements at a level no less than an equivalent of 40 points for LEED indicators.

The Russian Green Standard for Evaluation of Football Stadiums of the FIFA 2018 World Cup in Russia was designed to factor in the requirements of sustainability in building construction for the purposes of certifying football stadiums of the 2018 FIFA World Cup in Russia that are being designed, constructed, or renovated. The Russian standard is necessary in light of the major gap between existing Russian legislation and construction practices, on the one hand, and the existing international green standards and construction laws and management principles in the USA, the European Union, or Brazil, on the other hand. The Russian authors did not aim to fully copy the LEED system and reproduce the complete list of its indicators. Our mission was to develop a truly effective standard and a certification system based on it, taking into account the requirements and objectives of FIFA in this field. To this end, the proposed Russian standard was closely tailored to the norms and requirements of Russian laws and the existing design and construction practices.

In 2015 FIFA approved the „Standard for Evaluation of Football Stadiums of the FIFA 2018 World Cup in Russia“, developed by „ABOK” according to the task of the Ministry of Natural Resources of Russia with the support and participation of the FIFA Organizing Committee „Russia-2018“, the Moscow Architectural Institute (State academy), TsNIIPromzdany, OOO NPO TERMEK. We would like to use this opportunity to thank FIFA representatives Federico Addiechi and Christian Stamm, Local Organizing Committee „Russia-2018” representative Milana Verkhunova, and Prof. Natalie Essig for their furtherance and assistance with development of this standard.

Russian Standard named „**RUSO Football Stadiums**” was registered by Federal Agency for Technical Regulation and Metrology

„RUSO Football Stadiums” standard has the following distinctive features:

1. The national green standard is based on an assessment of the degree to which World Cup football stadiums conform to national building codes in terms of architecture, structures, site plan, and engineering, and national economic and environmental norms with a particular focus on national priorities;

2. Unlike LEED and BREEAM, the Russian Green Standard RUSO Football Stadiums is intended specifically for certification of football stadiums according to green construction principles;

3. The Russian national standard is based on the experience of designing, building, and operating Russian football stadiums, including those in Grozny, Kazan, and Rostov-on-Don;

4. The requirements of the green standard are based on principles and approaches of the sustainability concept. At the current stage, these requirements correspond by 80-90% to the existing Russian requirements and norms. Essentially, the reference indicators of this concept lay the methodological groundwork for formulating the required criteria of environmental and energy efficiency of a building subject to certification. Therefore, the entire certification process is not artificial in any way. Rather, it is a continuation of the natural process but with a focus on the relevant criteria that are recognized by the international community and conform to FIFA requirements.

Systems of Criteria of the National Green Standard

The national standard includes 12 mandatory criteria (prerequisites) subdivided into 28 indicators, and 51 rating criteria subdivided into 121 indicators.

The mandatory criteria (prerequisites) have been formulated by analogy with the LEED standard and include the following requirements as shown below.

1. Prevention of environmental pollution during venue construction (this includes requirements that call for storing topsoil and subsequently reusing it at the site, using dust control measures, washing and cleaning vehicles, treating sewage, etc.);

2. Reduction of water use for irrigation of adjacent territory (the standard calls for watering the adjacent territory with storm water);

3. Reduction of indoor water use (the standard regulates the use of water-saving flushing tanks, shower heads, urinals, and mixing taps, and a system for controlling and adjusting water pressure for end consumers);

4. Water consumption metering (metering of overall water consumption in the building must be implemented);

5. Control of requirements fulfillment during venue commissioning (compliance with the energy efficiency, water-saving, and ambient thermal comfort requirements for the building must be verified);

6. Minimum energy performance of the venue (ensuring a 5% reduction specific energy consumption, including heat and electricity consumption);

7. Energy consumption metering (metering of heat and electricity consumption must be implemented for the building overall and for specific building zones);

8. Control of use of ozone-safe refrigerants (only ozone-safe refrigerants that do not contain chlorine atoms may be used);

9. Sanitary protection and waste recycling (implementation of initial waste sorting, use of air-tight garbage chutes and garbage disposal compartments with an independent mechanically-driven ventilation system);

10. Recycling of construction waste (a waste management plan must be developed for utilizing and disposing of construction waste that should be processed and recycled);

11. Minimum ambient thermal comfort (compliance with the minimal air and thermal comfort requirements must be ensured, taking into account PMV and PDD indicators and criteria of local thermal comfort per GOST 30494 and GOST R ISO 7730);

12. Control of smoking areas (a smoking ban in all public spaces of the building, with a dedicated smoking area provided in the open air).

Every indicator of 51 rating criteria has its specific weight (score), with the maximum total score of 650 points. A football stadium may be certified if its score is 260 points or higher. By analogy with LEED and BREEAM, the national system provides for 4 levels of certificates (A, B, C, D).

Football stadium „Kazan Arena“ – „Silver“ certificate „RUSO Football stadiums“

At the moment, two stadiums are certified in Russia: in January 2017, the Arena Opening Stadium in Moscow received a certificate with the GOOD level in accordance with the BREEAM In-Use standard, and on April 17, 2017 the Kazan Arena stadium - a class certificate „Silver“ in the system SDS „RUSO. Football stadiums. „The stadium in St. Petersburg is in the process of certification. Another five stadiums - in Volgograd, Nizhny Novgorod, Samara, Saransk and Luzhniki in Moscow - received preliminary certificates (declarations of intent) at the stage of the „Project“.

„Kazan Arena“ football stadium, which is one of those constructed to the World Football championship – FIFA 2018, was awarded with the „Silver“ certificate according to the „RUSO. Football stadiums“ rating system, which aims to minimize the negative impact of sport's activities and tournaments on the environment and to use FIFA competitions to raise awareness of environmental issues. Thus, the stadium „Kazan Arena“ became the second stadium in Russia to be certified by green standards rating system.

Stadium „Kazan Arena“

The expert group marked that not much is left until the next, higher-class „Gold“ and prepared a list of recommended additional activities and corrective actions to achieve the „Gold“ class.

- The allocation of parking for environmental types of public and personal transport in the calculation for the delivery of at least 90% of viewers.
- Creation of a bicycle parking at the rate of not less than 0,05 places for 1 spectator at a distance not more than 180 m from the entrance to the building.
- Equipment of parking places in the adjoining territory with chargers for electric vehicles.
- Landscaping of at least 40% of the adjacent territory.
- The increase of the amount of beds in hotels within a radius of no more than 4 km from the football stadium to 15% of the total number of seats.
- Creating a „winter garden“ in a recreation area with elements of mobile landscaping.
- The transition of stadium-servicing organizations to the use of packaging materials and dishes from certified biodegradable polymers.

- Ensuring control of the bacterial and chemical composition of cooling water and water leaks.
- Use of furniture that has certificates of conformity.
- Refusal to use mercury-containing lamps.
- Environmental certification of engineering equipment used in the stadium.
- Bringing the share of furniture produced in the territory of the Russian Federation to 50%.
- Certification of the environmental management system of the management company according to ISO 14001.
- Certification of the energy management system of the management company according to ISO 50001.

These activities are generally simple, understandable and logical. In addition, many of them will not require significant financial investments for their implementation. This circumstance makes it possible to dispel one of the enduring myths about what green building - it is expensive and difficult.

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