



Quality assurance of solar technology products in the Czech Republic

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Brief introduction of ITC



- Institute for Testing and Certification, Inc. (ITC) is a Czech private testing and certification body aimed to the testing and certification of a broad products scope.

- ITC headquarters is situated in the city of Zlin.

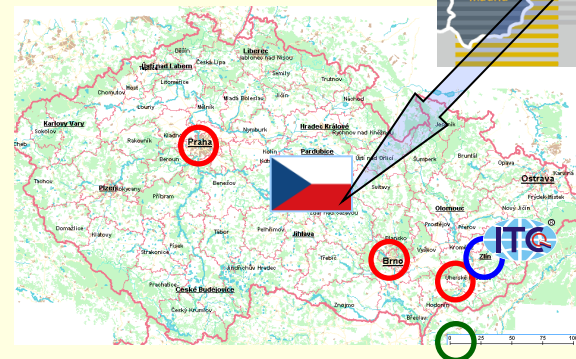


- Accreditation scope of the ITC laboratories and Product certification body covers:

chemical products, plastics and rubber, leather products, ceramics, medical devices, electrical equipment, consumer goods, foods, construction products, pipe systems, **solar collectors and systems, PV**

- Notified Body No. 1023 scope:

- Toys
- PPE
- Medical devices
- Active implantable med. devices
- In vitro diagnostics
- LVD and EMC
- Pressure equipment
- Construction products



Czech regulation aimed to solar collectors and systems



1. Placing on the Czech market

- The NLF principle is implemented into Czech law by the Act No. 22/1997 Coll. This act provides for transposition of the New Approach directives by Czech Government Orders.
- Construction product directive CPD is transposed by 2 Government Orders (GO):
 - Construction products bearing CE marking → GO 190/2002 Coll.
 - Construction products not having CE → GO 163/2002 Coll.
- In the Annex 2 of the GO 163/2002 Coll., the construction products families and groups are specified, including:
 - Products family No. 10: Technical Equipment of the Buildings
 - Subgroup No. 7: Equipment for heating internal spaces without own power supply
(The **Solar Collectors and Solar Energy Absorbers** are members)
- Czech Authorized Bodies are participating on the Assessment of Conformity (AoC) procedures
 - either Initial Type Testing ITT (Module 3 in CPD)
 - or Certification (ITT + FPC) (Module 1 in CPD)
- The obligation to conduct AoC procedures relates to products originating from the Czech Republic and from third countries. It does not relate to collectors manufactured or already placed on the market of any EU/EFTA state.
 - this provision is valid and **applied de jure**
 - however, it is **not applied de facto**, because architects and other customers are asking for certificates even in the case of the collectors originating in the EU Member States.

Czech regulation aimed to solar collectors and systems

2. Installation into construction works

General requirements to construction works are specified in the Building Act No. 183/2006 Coll. Certain implementing regulations relate to solar collectors:

- **Decree No. 268/2009 Coll. on general technical requirements for buildings contains**
 - requirements for consideration of alternative energy sources in the building design
 - installation requirement related to the heat sources

- **Decree No. 23/2008 Coll. on fire requirements**
 - estimation of the heating equipment safe distance from products of the reaction to fire classes B to F
 - reference to the Czech standard ČSN 06 1008 Fire safety of the heating equipment.

- **Decree No. 148/2007 Coll. on energy performance of buildings**
 - implements among others requirements of the EU Directive 2002/91/EC
 - the evaluation shall consider the possibility to install alternative energy sources incl. collectors

- **Decree No. 213/2001 Coll. on energy audits**
 - one of the steps in the energy auditing of buildings is an evaluation of the economical efficiency (profitability) of the alternative sources of energy

Czech regulation aimed to solar collectors and systems

3. Specific requirements for installation into construction works

▪ **Drinking water contact**

- Where the water should be used as a warm water for human consumption, all parts coming into contact with the water should be subject of the hygienic regulation
- Decree No. 409/2005 Coll. is establishing
 - **criteria for plastic products**
 - **criteria for rubber products**
 - **criteria for metallic parts**
 - **criteria for concrete and cement-based linings**
 - **criteria for surface finishing**
 - **requirements for analytical testing methods**
 - **preparation of eluates for migration tests**
 - **evaluation of the migration results**
- **Durability – no regulation**
- **Wind and snow load – no regulation, but Eurocodes are applicable**

Registration of the solar collectors and systems in the Czech Republic

Obligatory registration:

There is not any obligatory registration of manufacture, installation or use of solar panels. However, the design and installation in the building is subject of a building office approval process including on-site inspection.

Voluntary registration:

Registration is needed, if the user or owner of the house has applied for financial support in the frame of the Czech environmental funding programme called **Green Savings**.

The registration is requested for:

- **Applicants** for the **Green Savings** financial support
- **Products** and **systems** - only products registered in the **List of Products and Technologies** are supported
- **Suppliers/Installers** of products and systems – only services of companies registered in the **List of Qualified Suppliers** are supported



Solar Collectors Safety Control

Mandatory Assessment of Conformity

- ✓ The conformity assessment required by the Czech G.O. 163/2002 Coll. is aimed preferably to the safety issues.
- ✓ A common approach of all Czech Authorized Bodies is assured by coordination mechanism utilizing documents called Technical Guides issued for specific products.
- ✓ The Technical Guide No. 10_07_06 relates to the Solar Collectors and Systems. It is based on the requirements of standards EN 12975-1 and 12976-1, the prescribed testing methods are adopted from the standards EN 12975-2 and EN 12976-2.
- ✓ The required assessment and testing includes:
 - Checking of the compliance with technical documentation, marking, Instruction for use and maintenance
 - Internal pressure resistance test
 - Resistance to overheating and high temperature
 - Mechanical load resistance
 - Resistance to environmental impact
 - Safety equipment functionality
 - Heat output testing
 - Factory production control (FPC) assessment
 - Periodic surveillance of the FPC

Public subsidy: Green Savings

Green Savings Programme

concerns with lot of means for saving energy in buildings, including thermal insulation, heat pumps and solar collectors and systems utilization. The buildings owners and users are encouraged to combine the different measures for limiting energy loses and using alternative sources of energy.

- **Form of subsidy** = direct financial support (2200 – 3200 EUR per family house, 1400 – 2000 EUR per one flat)
- **Supported subjects** are both companies and natural persons improving energy performance of the family houses or blocks of flats

The conditions for Green Savings subsidy granting:

- ❖ **solar systems for warm water preparation only:**
calculated **annual solar heat gain** ≥ 350 kWh per 1 m² of the collector aperture
- ❖ **solar systems for warm water preparation combined with house heating:**
calculated **annual solar heat gain** ≥ 280 kWh per 1 m² of the collector aperture

AND simultaneously

- ❖ **total annual heat gain** for system installed on the family house ≥ 1100 kWh per one house
- ❖ **total annual heat gain** for system installed on the block of flats ≥ 750 kWh per one flat unit

AND simultaneously

- **Products, manufacturers and installers of the solar systems shall be registered at Ministry of the Environment**

Public subsidy: Eco-Energy

Eco-Energy Programme

promotes the enhancing of the efficiency at the production, transfer and consumption of energy and/or alternative heat sources utilization by Small and Medium Enterprises SME

- using heat pumps and solar collectors for heating of the non-residential rooms is a specific part of this programme.
- Form of subsidy = direct financial support
- Supported subjects are SMEs

The conditions for Eco-Energy subsidy granting:

- ❖ minimal/maximal subsidy granted: 0.5 mil. CZK/250 mil. CZK (20 000 EUR/10 mil. EUR)
- ❖ supported share in case of collectors: 30 % of eligible costs
- ❖ eligible costs: designing, engineering, investment (properties and equipment), reconstruction, advertisement
- ❖ place of the business shall be in the Czech Republic

Testing Facilities

Three testing laboratories are available in the Czech Republic

1. Institute for Testing and Certification, Inc. (ITC), www.itczlin.cz



- ✓ full testing scope
- ✓ tests are accredited
- ✓ no subcontracting of tests

2. Engineering Test Institute, www.szutest.cz



- ✗ testing scope limited to mechanical and hydraulic properties (no heat output)
- ✓ selected tests are accredited
- ✗ subcontracting is necessary for complete assessment

3. SOLab, Czech Technical University laboratory, <http://solab.fs.cvut.cz>



- ✗ testing scope limited to heat output, resistance to high temperature and environmental impact
- ✗ non-accredited laboratory
- ✗ subcontracting is necessary for complete assessment



1. CERTIFIED FOR BUILDINGS mark

- **Mark owner:** Association of Construction Testing Labs
- **Products covered:** All construction products
- **Aim:** Certification of compliance with specific Czech legislation related to construction products installation into buildings
- **Certification Bodies:**
 - Institute for Testing and Certification
 - Technical and Test Institute for Construction
 - Centre of Building Construction Engineering
 - Research Institute for Building Construction
 - Qualiform
- **Success** - Poor



2. SOLAR KEYMARK

- **Status of knowledge:** Good among manufacturers, Weak among common users
- **Status of acceptance:** The manufacturers are acquainted with the Solar Keymark. **12 certified collectors** originating from **7 Czech companies**. However, the small manufacturers are afraid of high certification expenses
- **Certification Bodies:** No Czech Certification Body has been approved yet. **ITC decided to apply** to CEN Certification Board (via the Czech Member of CEN – the Czech Office for Standards, Metrology and Testing - COSMT) for the license:
 - ITC has standards EN 12975-1 in the scope of the Product Certification Body accreditation
 - ITC has the standards EN 12975-2 in the Laboratory accreditation scope
 - promotional actions are necessary

Installers' Certification



1. **Particular certification** of persons or companies performing solar collector system installation **is not requested** by the Czech law.
2. Only common Trade certificate is necessary having in the scope building activities.
3. For the participation on the **GREEN SAVINGS** programme, the Installers of products and systems shall be registered in the List of Qualified Suppliers at the **Czech Ministry of Environment**

Other necessary marking

1. **The Czech legislation does not require any marking specific for solar collectors and systems.**
2. **However, certain parts of the solar system and collectors themselves could be regulated by New Approach directives, e.g.:**
 - **Tanks for collection of warm water, heat exchangers and collectors can be subject of the **Pressure Equipment Directive 97/23/EC** (exact classification depends on the Pressure/Volume conditions of the product)**
 - **Electrically powered pumps and control equipment is subject of the directives **2006/95/EC** (electrical safety - LVD) and **2004/108/EC** (electromagnetic compatibility - EMC)**
3. **The items mentioned in the clause 2 are subject of manufacturer's EC-Conformity Declaration and **CE marking** of each product.**

Barriers of the Trade

- 1. Main legal barrier is created by specific national provisions relating to installation of construction products (including the collectors and systems) into buildings and other civil construction works. Nevertheless, the European Commission do not wish to establish any harmonization of requirements to construction works.**
- 2. In the Czech Republic, the above mentioned national provisions are subject of the certification according to the Government Order No. 163/2002 Coll. This certification does not relate to products manufactured or already placed on the market of other EU/EFTA Member State and Turkey. Despite of this fact, many customers are asking for the GO 163/2002 Coll. Certificate and/or for the voluntary mark „Certified for Buildings“.**

Actions needed

1. Regulation

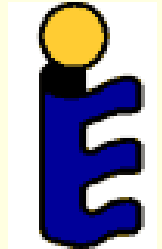
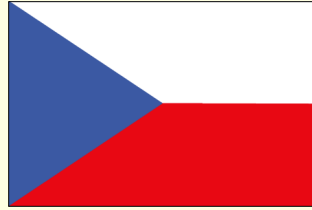
For trade barriers reduction, the harmonization of the standards EN 12975-1 and EN 12976-1 is strongly recommended. After publishing of the standards in OJEU the collectors and systems will belong to harmonized sphere and the obligatory CE marking should apply. Generally, the Member States cannot prevent from placing of the CE marked products on their markets. So, one of the potential trade barrier will be removed.

2. Testing

The Institute for Testing and Certification, Inc. intends to include its laboratory for solar collector testing to the Solar Keymark Network. To enhance the credibility, a participation in relevant interlaboratory testing is demanded.

3. Certification

The Institute for Testing and Certification, Inc. shall apply for empowering by CEN Certification Board according to prescribed procedure.



*Thank you for
Attention*

