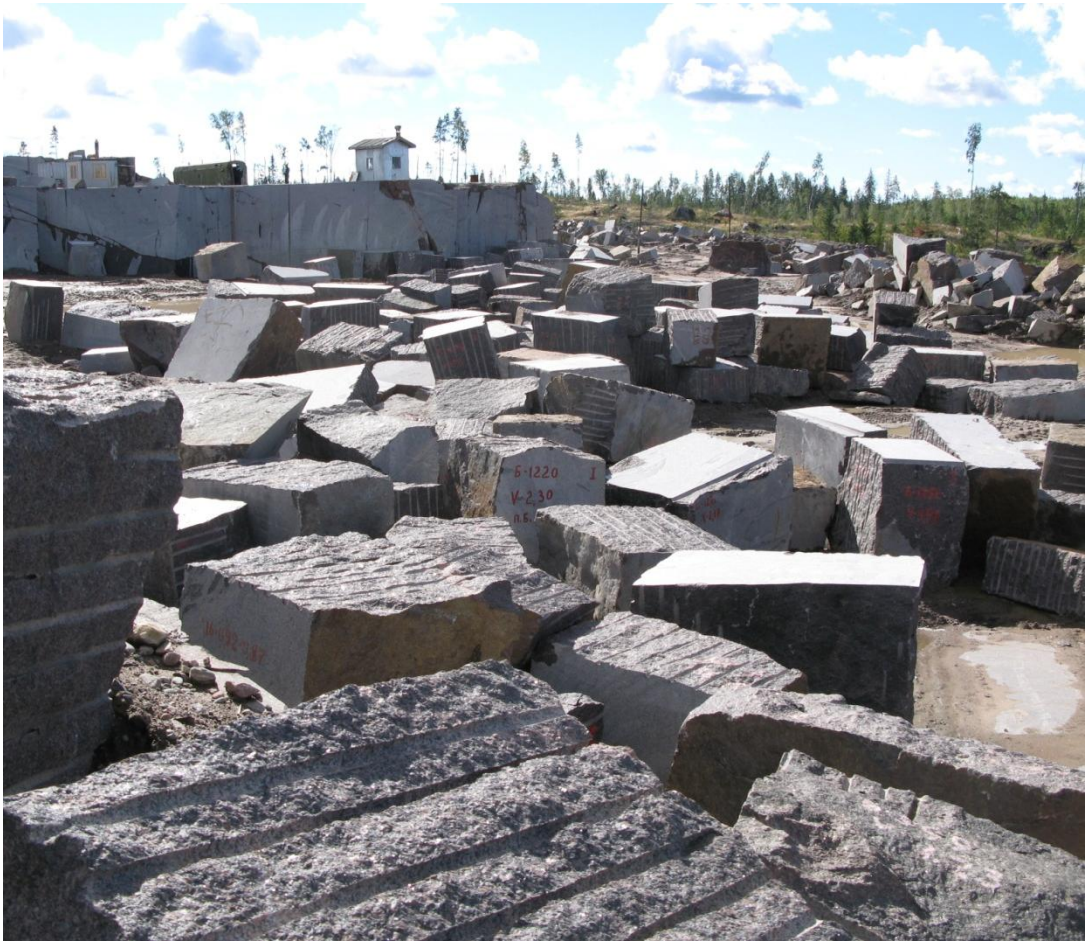
SOUTH-EAST FINLAND - RUSSIA ENPI CBC PROGRAMME 2007-2013

Efficient use of natural stone in the Leningrad region and South-East Finland



Recommendations for harmonization of legislative regulations in natural stone trade

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1. Introduction

The general aim is to characterize and describe the trade process of natural stone between the EU and Russia, focusing on Finland-Russia trade possibilities. The aim is also to find out possible obstacles of the trade and possible ways to make the process simpler. The project is focused on the most critical technical and material issues, like certificates of radioactivity, affecting the trade.

2. The process of natural stone trade between Finland (EU) and Russia

In Russia about 30% of blocks are imported from several countries including Finland. In Finland about 40% of extracted stone is exported to Russia and EU. The most common trade article between Finland and Russia is the block products that are exported from Finland to Russia. The main geographical marketing areas are Moscow and St. Petersburg even if natural stone is then used also in other areas as building materials in large projects, as banks and hotels, or in urban planning projects. Stone used as construction products in Russia accounts for about 7%, while as slabs reaches 24%, and 36% as tile and small items, 22% monuments and 10% architectural details. The price of imported granite products on Russian market is about triple compared to local granite, except for Chinese import, that can be lower than local. Trade of Natural stone from Russia to Finland is presently low but Russian companies are operative in Finnish territory.

In the trade across the border the material need to be tested and certified according to countries' regulations. A short overview of the trading documents that could be needed is given hereafter. The import to Russia should be done by a Russian Federation registered entity and material tested according to Russian standards.

2.1 General documents

These documents are basically required for the trade to Russia and for passing custom's controls:

- Sales contract. It is an important document for the companies in the trade. It is done on writing and the company that sells could propose own schemes, to be sure that all the aspects are addressed. It is important to show the selling terms and conditions that are to be agreed also including the terms for which the contract ends. Consequences on delay could also be addressed. The document will show also the date, place and signatures and can be handled in disputes if problems occur. The company in charge of transportation will have a copy of it during transportation.

- Invoice and Pro forma – Invoice in multiple copy, up to 5 copies from some sources, practice has shown that 2 copies could be enough. It is written in Russian or English but within the official languages is included also German. Sometimes it is not possible to have an invoice before the material has been received by the customer, so it done a Prof Forma with calculations of the final price as usually done for an invoice. It is having at least the product name/description, producers name and address-country of origin of goods, destination/buyer name and address, invoice number, date, unit price of goods, TN VED code- Commodities Classification Code of the Foreign Economic Activity on each item, the payment terms and delivery terms, shipping method, freight

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and insurance prices, supplier's or seller signature, round stamp. If material is not for sale but for testing purposes, on the invoice is written that the material is for "custom purpose only and shipment has no commercial value", the invoice is forwarded.

- Customs declaration and declaration of dutiable value in Russian is done with the importer for clearance of the good. It is written the value and its justification. It is based on the commercial price of the product and on its packaging and costs of transportations.
    - Samples for testing are considered such if their value is lower than 1.000 USD , they should also contain the description of the good and the use that it is planned to do with it specifying that the shipment has no commercial value. Certificate of Origin, in addition to the certificates needed as it would have been a commercial good.

- Certificate of Origin – can easy the custom clearance, the seller can do on the base of self declaration if it is done within EU countries and has been accepted also towards Russia. Otherwise it should be asked from the chamber of commerce.

- Consignment note is required and it is different according to each delivering company. The packaging list is required and a part is filled by the importer and a part by the seller, as measure and weight.

    - If material as blocks are exported has been noted that packaging list is not always needed as it is a raw material/block, it is defined as a fix-format block as in other countries and the maximum weight should be 24.8 tons.
    - a documents of export is required

It is important to mark each item/each block with the TN VED code, that is similar for blocks and tiles.

2.2 Other certificates

Other certificates could be needed according to the information on trade across the border given by different chambers of commerce and information found on other activities different from natural stones. These are:

- Certification and conformity certificate from an accredited organism of certification from Russian body according to Russia-Kazakhstan-Bielorussia Custom Union.

- Declaration of conformity is filled up by the Russian importer and validated by organism of certification from Russian body according to Custom Union and needs to have the good classified according the Custom naming system (Russian System HS) and identification of trading typology, Hygiene and metrological examinations (GOST) and needed tests performed, certification and documentations:
    - The recipient of the declaration of conformity
        - Name
        - Address
        - requisites of the applicant company (registered in Russia / Belarus or Kazakhstan).

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- Details about the product:
  - Name
  - customs code
  - GOST standards and technical specifications
  - lot size
  - storage and transport terms.
- Manufacturer's data:
  - Name
  - registration address
  - contact details
- Basis of the declaration
  - regulatory acts under which the declaration has been issued.
- Other information
  - the name of the authority carrying out testings and registration statements.
- Data on registration of the declaration of conformity
  - the date and place where the document was issued
  - the valid period of the declaration.

(Compare to Declaration of performance, DoP, EU Construction products regulation)

- Quality certificate

- Radiation free certificate it is required also for trading blocks and should be local so the importer has been taking care of it.

- Hygiene certificate for a product, if needed, defined as Custom Union Registration is required by the importer and provided by Rospotrebnadzor http://www.rospotrebnadzor.ru/en/ and from its territorial branches.

Special attention should be paid to the use of wood in packaging as should be treated and marked according to the International Standards For Phytosanitary Measures No. 15 (ISPM 15).

2.3 Certificate summary and considerations

A questionnaire has been sent to the main Finnish trading companies in natural stones asking the documents required to perform the trade. Table 1 show the needed documents from Finland to Russia, presenting also the documents not required. The response to the questionnaire has been providing inside look to the procedures done up to now.

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Table1: Documents needed – results from the enquiry to the companies exporting to Russia

Finnish	English	Company 1	Company 2	Company 3
Alkuperätodistus	EU certificate of origin (self declaration or taken from the chamber of commerce)	x		x
Kauppasopimus	Sales contract	x	x	x (by boat, not by road)
Kauppalasku	Invoice	x	x	x
Proforma –lasku	Pro-forma – invoice	x		
Tullausilmoitus ja tullausarvoilmoitus	Customs declaration and declaration of dutiable value	x	x	x
Rahtikirja	Consignment note (transport)*	x	x	x
Pakkauslista	Packaging list	x	x	x
Tuoterekisteröintitodistus	Custom Union Registration			
Ennakkoilmoitus	Pre-announcement			
Vastaavuussertifikaatti	Conformity certificate			
Vastaavuusvakuutus	Declaration of conformity			
Laatusertifikaatti	Quality certificate			
Säteilysertifikaatti	Radiation free certificate	x	x	x

*The consignment note for transport contains the International waybill CMR (kansainvälinen rahtikirja) that can be obtained online by the major transport companies. Export declaration (Vienti-ilmoitus) EAD sheet belongs also to the Consignment note documentation. From the custom's web pages it recommended to produce the documents on line and send them to the customs well in advance. It should be remembered that documents should be undersigned and marked, preferable with a round stamp.

The documents that have been required to the companies have not been large but the trade is slow across the border. Between the documents classified as "others" only radioactivity has been requested and it had been enough a declaration. It is not needed a declaration from a Russian body but it is enough from a Finnish body. The Finnish-Russia chamber of commerce list the following firms that could provide or support in finding the certificates needed: SVKK of Helsinki, Lpr offices, SGS Inspection Services-Helsinki, Markinvest - Lahti, Certification Center CTCR Oy- Helsinki, Certicator Oy- Helsinki, Rostest Finland - Helsinki, WorldWideGost LLC- Moskova. In practice from the experiences of the companies trading in natural stones a certificate on radioactivity emission from STUK - Radiation and Nuclear Safety Authority was accepted. The certificate has been valid for 10 years as the material does not change considerably properties in this field during exploitation.

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3. The radioactive matter

The radioactive certificate is one main aspect that is slowing the trade in an official way. The certificate itself is easy to get but the issue itself is controversial as the methodologies for assessing between EU and Russia are different. Radioactive evaluation for construction material is handled in Russia by GOST 30108-94 and in EU is in writing a standard under commission TC 351.

GOST 30108-94. Building materials and products. Determination of specific effective activity of Natural radionuclides (NRN) focusing on the main radionuclides of natural origin contained in building materials: radium (226Ra), thorium (232Th), potassium (40K) according to the weight of the material where they are contained (Bq/kg). The measurements are done using gamma spectrometry and their effects on human body are calculated according to one formula. Two methods are proposed. There is classification of material in 4 classes according to the radioactive activity.If the Specific effective activity (Aeff), Bq / kg is under 370 the material is suitable for all construction purposes, the second ranges are for using the material for urban and remote road constructions/infrastructures (370-740 and 740-1500), if it goes from 1500 to 4000 Bq/kg the use of the material has to undergo permits. The standard describes also the measurements to be performed on the quarry site, with a grid of 10m x10m, diminishing the interval if the values measured are higher than 370 Bq/kg and near edges.

In EU the first non regulatory approach was adopted with EU RP 112 principles where a simple method considered exposure time 7000h/year of radium (226Ra), thorium (232Th), potassium (40K) in an hypothetical room 4mx5mx2.8m and calculating the dose with Berger approach considering also the attenuations. It produced easy to use screening results to identify materials that had potential of radiation gamma emission.

With construction product directive came compulsory to have declaration of conformance of construction products including safety in use that covered radiation and chemical risks. The Eu standard in development TC351 WI00351020:2014t is more complex. It consider (226Ra), thorium (232Th), potassium (40K) but is refers to the environment where it is located and to the actual use of the material, considering also material thickness and density. The dose rate for a mass per unit area (kg/m2) and the dose rate in the model room is calculated considering also the attenuations and shading provided by the material against natural radiations. The maximum emission should be under 1mSv/year.

It is visible that the two approaches are different. One is evaluating the emission despites its uses, and after knowing the emission allows certain uses, the other evaluate the whole environment and typology of use for calculating the risks posed on human beings. The outdoor use for example it is not considered.

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4. Accessing the market

4.1 Russia

Trade across the border always require a Russian company of destination. Generally has been done trade of blocks and the final destination has been a company that worked the material into finished products. Working it probably performed the tests needed to access the construction market in Russia.

The GOST standards are the reference for perform test to place products on the market for certain purposes. They are under updating.

GOST 30629 – 2011 “Facing materials and items made of rocks: testing methods” It is showing the dimensions of the products and the methodologies for testing, including density and open porosity done with one of the methods accepted in EU standards but not the one normally done in Finland, flexural strength with specimens slightly different compared to those used in Finland, impact test (not used in Finland), abrasion resistance (different to that actually used, but is one method accepted from EU standardization), indentation tests that has been removed from EU tests as nobody requested it.

GOST 23342 – 91 Architectural-building items made of natural stone. Technical conditions. (substitutes GOST 23342-78). It includes basements, skims, sill, slabs, ... with length between 400 and 1500mm, width between 200-1200mm, and thickness between 30 and 400 mm. Deviations are according to the finishing and the standard describe how to perform the quality control and what to show on the batch (each batch should satisfy the requirements stated: (number and date of the document, batch number, type of stone, name of the quarry place, texture of the face of the product.) In the label should be stated the physical and mechanical properties of the stone for the manufactured product that shell satisfy the requirements of GOST 9479 (that itself refers to EN 1467: 2003). Tools to be used for assessing geometrical measurements (meter, roulette, square metal angle 90°, probe) are according to GOST reference standards to assure desired precision of the instruments.

GOST 9479 - 2011 “Rock blocks for production of facing, architectural – building, memorial and other items”. It refers to the EN 1467: 2003 and shows the specifications for the products, also for the blocks and the tolerances in dimensions.

GOST 9480 – 89 Facing slabs sown from natural stone. Technical specifications. Refers to GOST 9479 and is about dimensions.

GOST 24099-80. Decorative plates on the basis of natural stone. Specifications. Are shown dimensions and tolerances also determination of some properties as coefficient of saturation. The physical and mechanical properties are to be done according to GOST 9479-84

GOST 30629-99. Facing materials and products from rocks. Test methods.

Within the GOST required for construction material there is also the one about radioactive emission of the construction materials that discussed before.

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4.2 Finland

Products accessing European market in the stone sector besides the documents for passing the customs have to fulfill the European market requirements. International documents are in the main European languages (English, French and German) and found online, either to be bought or for free according to the kind of document searched. Relatively to stone material to be used in constructions the European Construction Directive requires application of CE marking over the products and a product declaration form that state that the product conforms to the results shown and declared. The company should have implemented factory production control or have taken measure to assure the homogeneity of material properties in case of material handled but not produced by themselves. The tests needed and documents needed for each intended use of the stone are shown in the harmonized standard listed in Table 2.

Table 2 Harmonized European standards relative to the use of natural stones on constructions.

EN 1341	Slabs of natural stone for external paving – Requirements and test methods
EN 1342	Setts of natural stone for external paving – Requirements and test methods
EN 1343	Kerbs of natural stone for external paving – Requirements and test methods
EN 1469	Natural stone products - Slabs for cladding - Requirements
EN 12057	Natural stone products - Modular tiles - Requirements
EN 12058	Natural stone products - Slabs for floors and stairs - Requirements
EN 12326-1	Slate and stone products for discontinuous roofing and cladding - Part 1: product
EN 12326-2	Slate and stone products for discontinuous roofing and cladding - Part 2: methods of test
EN 771-6	Specification for masonry units - Part 6: Natural stone masonry units

The standards are going under revision periodically and it is better always to check the last available versions to verify the tests required. Tests standards can be bought by any standardization body of EU, from Finland by SFS (www.sfs.fi).

The tests are common to most of the product standard therefore the total amount of tests really needed to access the market is minimum compared to the full range of testing standard on natural stones.

The requirements for the stone products to access Finnish market comprises essential characteristics only: Determination of compressive strength, Determination of frost resistance with addition of salt, Determination of frost resistance (national standardization group works to eliminate the need to perform normal frost if frost with addition of salt is performed), – Determination of the slip resistance by means of the pendulum tester, Determination of abrasion resistance, Determination of flexural strength under concentrated load, Determination of breaking load at dowel hole.

The full list of reference standards needed to perform initial type testing and essential characteristics evaluation is shown in Table 3 even more standards are available for natural stones.

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Table 3. Tests procedures for natural stones and masonry units

EN 12440	Natural stone – Denomination criteria
EN 12670	Natural stone – Terminology
EN 1925	Natural stone test methods – Determination of water absorption coefficient by capillarity
EN 1926	Natural stone test methods – Determination of compressive strength
EN 1936	Natural stone test methods – Determination of real density and apparent density, and of total and open porosity
EN 12371	Natural stone test methods – Determination of frost resistance
EN 12372	Natural stone test methods – Determination of flexural strength under concentrated load
EN 12407	Natural stone test methods – Petrographic examination
EN 13161	Natural stone test methods – Determination of flexural strength under constant moment
EN 13364	Natural stone test methods – Determination of breaking load at dowel hole
EN 13373	Natural stone test methods – Determination of geometric characteristics on units
EN 13755	Natural stone test methods – Determination of water absorption at atmospheric pressure
EN 14066	Natural stone test methods – Determination of resistance to ageing by thermal shock
EN 14231	Natural stone test methods – Determination of the slip resistance by means of the pendulum tester
EN 14157	Natural stones – Determination of abrasion resistance
EN 14581	Natural stone test methods – Determination of thermal expansion coefficient
EN 12326-2	Slate and stone products for discontinuous roofing and cladding – Part 2: Methods of test
EN 772-1	Methods of test for masonry units - Part 1: Determination of compressive strength
EN 772-4	Methods of test for masonry units - Part 4: Determination of real and bulk density and of total and open porosity for natural stone masonry units
EN 772-11	Methods of test for masonry units - Part 11: Determination of water absorption due to capillary action
EN 772-16	Methods of test for masonry units - Part 16: Determination of dimensions
EN 772-20	Methods of test for masonry units - Part 20: Determination of flatness of faces of aggregate concrete, manufactured and natural stone masonry
EN1745	Masonry and masonry products - Methods for determining design thermal values

The list of tests required in Finland and the minimum values accepted are shown in the reference national application standards:

SFS 7017 Characteristics and requirement levels of sets, slabs and kerbs made of concrete or natural stone in different outdoor applications. Betonista tai luonnonkivestä tehdyille ulkotilojen päällystekiville, -laatoille ja reunakiville eri käyttökohteissa vaadittavat ominaisuudet ja niille asetetut vaatimustasot
This standard is the national application standard for SFS-EN 1338, SFS-EN 1339, SFS-EN 1340, SFS-EN 1341, SFS-EN 1342 and SFS-EN 1343.

SFS 7019 Characteristics and requirement levels of natural stone slabs .Luonnonkivilaatoille eri käyttökohteissa vaadittavat ominaisuudet ja niille asetetut vaatimustasot. This standard is the national application standard for SFS-EN 1469, SFS-EN 12057 and SFS-EN 12058.

SFS 7001 Characteristics and requirement levels of masonry products in different applications. Muuratuille tuotteille eri käyttökohteissa vaadittavat ominaisuudet ja niille asetetut vaatimustasot. This standard refers

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to SFS-EN 771-1, SFS-EN 771-2, SFS-EN 771-3, SFS-EN 771-4, SFS-EN 771-6, SFS-EN 845-1+A1, SFS-EN 845-2 and SFS-EN 998-2.

The denomination of the material has become and important aspect (ref. EN 12440) and includes traditional name, petrological family, typical color and place of origin.

Within European standards also the following are important for defining the dimensions:
1467 Natural stone – Rough blocks - Requirements
1468 Natural stone – Rough slabs - Requirements
12059 Natural stone products – Dimensional stone work – Requirements

5. Proposals

Considering that Finland is one main trade access channel to Russian federation and the fact that the material moved has been not susceptible to stricter health controls because of its implicit safety, the rules applied to trade in practice had been easier. There has been experience, in other field, that documents required differed from case to case, probably also because of changes in trade agreement between Russian federation and Europe and custom rules during the time, but also other local/regional reasons could had caused different requirements.

5.1 English language/online documents

Documentations about testing, certificates and forms have been often required in Russian and this has been a problem in finding the information and compiling the data. The wish has been to have available on line accessible forms to be compiled in English and Russian for easy the cross border activity. Reference standardization is also in Russian and is problematic for understanding if the product conforms to the requirements.

5.2 Harmonization within standardization

The fact that the GOST standards started to be updated considering the European standardization is facilitating the access to the market and the possibility to compare material properties. In general different tests produce different results and these are not really quantifying the durability of the material in an absolute scale. The importance in using a method and in comparing to different material, also knowing the performance on site is the key to know how the material performs. Harmonization of testing procedures is therefore to be supported.

Harmonization for a common procedure and common values of acceptability of radioactivity would be also facilitating the trade. New knowledge on the matter and the need for updating the standardization could be promoted in cooperation between Russia and EU standardization activity.

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