مجلس أبـــوظبـي للـجـودة والـمـطابـــقـة
ABU DHABI QUALITY & CONFORMITY COUNCIL

Abu Dhabi Certification Scheme for Insulation Products

Assessment and Surveillance Plan

Amendment Page

To ensure that each controlled copy of this ASP contains a complete record of amendments, the Amendment Page is updated and issued with each set of revised/new pages of the document.						
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1	30/06/2015	Scheme launched	-	-	13	1.0

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1 ABOUT THE ABU DHABI QUALITY AND CONFORMITY COUNCIL

The Abu Dhabi Quality and Conformity Council (QCC) was established by law No. 3 of 2009, issued by His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE and ruler of Abu Dhabi.

QCC consists of a council of regulators that facilitate the provision of quality infrastructure in line with global standards. This quality infrastructure enables industry and regulators to ensure that products, systems and personnel can be tested and certified to UAE and International Standards. In addition to supporting regulators and government organizations through offering quality and conformity assessment facilities, expertise and resources, the Council is also engaged in promoting a culture of quality towards consumers. Additionally, the QCC is responsible for raising the quality of local products and ensuring exports meet international standards to improve interactions with global trade and integration into the global economy, as envisioned by Abu Dhabi Economic Vision 2030.

Products certified by the QCC receive the Abu Dhabi Trustmark. The Trustmark is designed to communicate that products, personnel or systems conform to various safety, quality and performance standards that are set by Abu Dhabi regulators.

2 FOREWORD

The Abu Dhabi Certification Scheme for Insulation Products, developed through consultation with regulators and industry, enables suppliers of insulation materials to obtain voluntary certification of products that meet the Abu Dhabi International Building Code and to satisfy other desirable performance characteristics related to sustainability, energy efficiency and safety requirements.

The scope of the certification scheme applies to the following types of insulation materials:

a. **Rigid insulation boards.** These products can be produced from a number of different insulating materials, including foam plastic, mineral fibre and perlite. The insulation boards may include a facing material.
b. **Spray-applied polyurethane insulation.** Spray-applied rigid-cellular polyurethane thermal insulation is produced by the catalysed chemical reaction of polyisocyanates with polyhydroxyl compounds, with the addition of other compounds such as stabilizers and blowing agents. The material is mixed and applied using commercial polyurethane spray equipment and is formed directly on the surface to be sprayed.
c. **Loose-fill and batt-type insulation products.** These include products such as fiberglass, perlite and mineral wool that are supplied as fibres that are blown into the cavity or as batts.
d. **Cellulosic insulation products.** Cellulose insulation is made from plant fibre, typically 75-80% recycled paper fibre, and may be installed as loose-fill or spray-applied.

It is anticipated that implementation of this product certification scheme will significantly benefit the Emirate of Abu Dhabi by reducing energy consumption and related costs in villas and buildings, particularly new construction.

3 THE ENVIRONMENTAL TRUSTMARK

Products that achieve certification, through formal testing against the QCC certification scheme criteria defined in this document, will be granted a Certificate of Conformity and are licensed to bear the Abu Dhabi Trustmark for Environmental Performance in product promotion and merchandising. The Certificate of Conformity enables manufacturers and suppliers of insulation products to present evidence of meeting appropriate standards for Abu Dhabi's built environment.

The Certificate of Conformity can be used to support the submission requirements of the Estidama Pearl Rating System:

- **PBRS credits RE-R1 and RE-1 and PVRS credits RE-R1, RE-1 and RE-2:** to demonstrate the insulation product thermal performance used within the submitted u-value calculations; and
- **PBRS and PVRS credits SM-1:** to demonstrate that any blowing agent used to manufacture the insulation product or to spray it in place has an Ozone Depleting Potential of zero (ODP=0) and a Global Warming Potential of less than 5 (GWP≤5).

The QCC's market surveillance inspectors actively ensure the integrity of the Trustmark for Environmental Performance is maintained through market surveillance and testing of products bearing the Trustmark.

Advisory note: A number of factors additional to the characteristics addressed in this assessment and surveillance plan may influence the performance of products, e.g. installation, maintenance, modification, incorrect operation. Such factors are beyond the scope of the third party product certification described in this document. The QCC recommends that suitable precautions, such as the use of competent and/or accredited/approved building designers, insulation products installers, commissioners and building maintenance managers, to improve the likelihood of continued compliance of installed products.

The requirements herein may from time to time be varied by the issue of one or more ‘QCC Notices’ issued as controlled documents to certificate holders.

4 REFERENCES

The following key documents have been used to define the required performance requirements within this Assessment and Surveillance Plan:

- Abu Dhabi International Building Code (ADIBC), as issued by the Abu Dhabi Department of Municipal Affairs in 2013.
- The Pearl Rating System for Estidama: Building Rating System – Design and Construction V 1.0, April 2010
- The Pearl Rating System for Estidama: Villa Rating System – Design and Construction V 1.0, April 2010
- UAE Fire and Life Safety Code of Practice 2011.
- UAE Fire and Life Safety Code of Practice 2011 Annexure A.1.21. Rev.2 Fire stopping, exterior wall, cladding/curtain wall and roofing systems.

In addition, the following standards and specifications are referenced as acceptable means to demonstrate compliance with the minimum performance requirements outlined in Table 1 for the respective insulation materials. Familiarity and/or access to these documents, dependant on the product(s) applying for certification, is expected of the applicant. In all cases, the most recent edition of the document shall apply:

- **All insulation types:**
  - ASTM C177, Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
  - ASTM C208, Specification for Cellulosic Fiber Insulating Board
  - ASTM C516, Specifications for Vermiculite Loose Fill thermal Insulation
  - ASTM C518, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
  - ASTM E96, Standard Test Methods for Water Vapor Transmission of Materials
  - ASTM E283, Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
  - ASTM E2178, Standard Test Method for Air Permeance of Building Materials
  - BS EN 13172, Thermal insulation products. Evaluation of conformity
  - AS/NZS 4859.1, Materials for the Thermal Insulation of Buildings
- **Rigid insulation boards:**
  - ASTM C552, Specification for Cellular Glass Thermal Insulation
  - ASTM C578, Specification for Rigid, Cellular Polystyrene Thermal Insulation
  - ASTM C726, Standard Specification for Mineral Fiber Roof Insulation Board

- ASTM C1289, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- BS EN 13163, Thermal insulation products for buildings. Factory made expanded polystyrene (EPS) products
- BS EN 13164, Thermal insulation products for buildings. Factory made extruded polystyrene foam (XPS) products
- BS EN 13165, Thermal insulation products for buildings. Factory made rigid polyurethane foam (PU) products
- BS EN 13166, Thermal insulation products for buildings. Factory made phenolic foam (PF) products
- BS EN 13167, Thermal insulation products for buildings. Factory made cellular glass (CG) products
- BS EN 13169, Thermal insulation products for buildings. Factory made expanded perlite board (EPB) products
- BS EN 13170, Thermal insulation products for buildings. Factory made products of expanded cork (ICB)

- **Spray-applied polyurethane insulation**
  - ASTM C1029, Specification for Spray-applied Rigid Cellular Polyurethane Thermal Insulation
  - EN 14315-1, Thermal insulating products for buildings – In-situ formed sprayed rigid polyurethane (PUR) and polyisocyanurate (PIR) foam products – Part 1: Specification for the rigid foam spray system before installation
- **Loose-fill and batt-type insulation**
  - ASTM C516, Specifications for Vermiculite Loose Fill thermal Insulation
  - ASTM C547, Specification for Mineral Fiber Pipe Insulation
  - ASTM C549, Specification for Perlite Loose Fill Insulation
  - BS EN 13162, Thermal insulation products for buildings. Factory made mineral wool (MW) products
  - BS EN 13168, Thermal insulation products for buildings. Factory made wood wool (WW) products
  - BS EN 13171, Thermal insulation products for buildings. Factory made wood fibre (WF) products
- **Cellulosic insulation**
  - ASTM C208, Specification for Cellulosic Fiber Insulating Board
  - 16CFR Part 1209 Interim Safety Standard for Cellulose Insulation
  - 16CFR Part 1404, Cellulose Insulation

5 CERTIFICATION REQUIREMENTS

5.1 General Requirements

In order to receive the Trustmark for Environmental Performance, the product applying for certification must be assessed according to the QCC's criteria (clause 5.2).

The general requirements for certification, along with the terms and conditions for QCC certification of products and license of the Trustmark are contained in the application form QCC-QP-CSS/PCS-F01, which can be downloaded from the QCC website at:

http://www.qcc.abudhabi.ae/English/Activities/Documents/Application%20form%20and%20Terms%20and%20Conditions.pdf

Complete applications for certification shall be submitted electronically through the QCC's Jawdah website (http://jawdah.qcc.abudhabi.ae/en/Pages/default.aspx).

In addition, the applicant shall provide the following:

- Valid UAE Trade License
- Authorisation letter from the manufacturer to deal with the product(s) seeking certification (if applying on the manufacturers' behalf).

5.2 Specific Requirements

5.2.1 Mandatory Performance Requirements

In order to gain certification, the insulation products shall meet the minimum performance requirements outlined in Table 1 below, when tested in accordance with the defined test procedure.

In order to demonstrate compliance, test reports must be provided from an ISO/IEC 17025 certified laboratory where the applicable test standards is within the scope of certification. The certification body which provided the ISO/IEC 17025 certification to the laboratory must be a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC-MRA). Alternatively, the testing facility shall have obtained QCC recognition based on the scope of the testing sought.

Test reports validity: In all cases, the test reports submitted must not be older than 12 months on the day of submission.

Physical testing analysis or equivalent: Test reports shall demonstrate applicability and traceability to the products sold in the UAE.

Use of alternative test standards: Test reports using alternative standards to those listed in Table 1 will be considered and reviewed by the QCC to determine if the standard is equivalent to, and/or meets the intent of, the test standards required by relevant sections concerning insulation materials given in the ADIECC and Abu Dhabi Urban Planning Council (UPC) Estidama Pearl Rating System.

Table 1. The QCC minimum performance requirements for insulation products certification

Product Properties	Product type	Requirements	Test Procedure[1]
Physical properties	Rigid insulation boards	Demonstrate compliance with the standard requirements in accordance with the specific product application as appropriate:	
		• Cellular Glass Thermal Insulation	ASTM C552
		• Rigid, Cellular Polystyrene Thermal Insulation	ASTM C578
		• Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board	ASTM C1289
		• Expanded polystyrene products	BS EN 13163
		• Extruded polystyrene foam products	BS EN 13164
		• Rigid polyurethane foam products	BS EN 13165
		• Phenolic foam products	BS EN 13166
		• Cellular glass products	BS EN 13167
		• Expanded perlite board products	BS EN 13169
		• Factory made products of expanded cork	BS EN 13170
	Spray-applied polyurethane insulation	Demonstrate compliance with the standard requirements in accordance with the specific product application as appropriate:	
		• Spray-applied Rigid Cellular Polyurethane Thermal Insulation	ASTM C1029
		• In-situ formed sprayed rigid polyurethane and polyisocyanurate foam products	EN 14315-1
	Loose-fill and batt-type insulation	Demonstrate compliance with the standard requirements in accordance with the specific product application as appropriate:	
		• Vermiculite Loose Fill thermal Insulation	ASTM C516
		• Mineral Fiber Pipe Insulation	ASTM C547
		• Perlite Loose Fill Insulation	ASTM C549
		• Factory made mineral wool products	BS EN 13162
		• Factory made wood wool products	BS EN 13168
		• Factory made wood fibre products	BS EN 13171
	Cellulosic insulation	Demonstrate compliance with the standard requirements in accordance with the specific product application as appropriate:	
		• Cellulosic Fiber Insulating Board	ASTM C208
		• Cellulose Insulation	▪ 16CFR Part 1209 ▪ 16CFR Part 1404

Product Properties	Product type	Requirements	Test Procedure[1]
Fire properties	All insulation types	Insulating materials shall have a flame spread index and smoke developed index complying with the applicable requirements of AIDBC Section 719. **Exception**: Cellulose loose-fill insulation that is not spray applied, complying with CPSC 16 CFR, Part 1209 and CPSC 16 CFR, Part 1404, shall not be required to meet the flame spread index of 25 or less.	• ASTM E84, or • BS EN ISO 11925-2
Thermal properties	All insulation types	Test must be: • conducted at 35ºC • conducted at three thicknesses: 25.4mm, an intermediate thickness and at maximum thickness. **Exception**: testing at one thickness is permitted where a linear relationship between thickness and thermal resistance is established. • reported in units of W / (m-ºK) for thermal conductivity. • reported in units of (m^2-ºK) / W for thermal resistance.	• ASTM C518, or • ASTM C177, or • ASTM C1363.
1. Comparable test procedures would be accepted by the QCC after assessment on a case by case basis			

5.2.2 Optional Sustainability Attributes

In order to demonstrate compliance with UPC's Estidama Pearl Rating System optional credit **SM-1 Non-Polluting Materials**, the applicant shall submit the product's US EPA chemical properties sheet stating that the blowing agents used either during manufacturing or installation of the products have an Ozone Depleting Potential of zero (ODP=0) and a Global Warming Potential of less than five (GWP ≤5).

5.3 Quality Management System Requirements

The manufacturer of the product (not the importer, or distributor, or retailer) must be certified according to ISO 9001:2008, the certificate being issued by a certification body accredited according to ISO/IEC 17021:2012 by an accreditation body signatory to the International Accreditation Forum Multilateral Recognition Agreement (IAF MLA).

6 ASSESSMENT OF THE APPLICATION

The assessment is based on the submitted documentation defined in clauses 5.1, 5.2 and 5.3, including additional product information such as; product specifications, product descriptions and product photo documentation, which is evaluated for consistency, completeness and overall quality. Refer to APPENDIX A for diagram of the application-assessment process.

7 IDENTIFICATION AND LABELLING

Each certified product must be provided with an evident label bearing the Trustmark for Environmental Performance (depending on product and subject to agreement with the QCC Communications department), in accordance with brand guidelines specified in the Application, Terms and Conditions and License for Certification (QCC-QP-CSSPCS-F01).

8 SURVEILLANCE / AUDIT PROCEDURES

8.1 General

At a minimum, the surveillance and audit requirements listed under this section shall be applied to the certified product(s) on an annual basis. When the validity of a certificate is to be demonstrated; this includes the validity of the accreditation of the certificate issuer.

8.2 Quality Management System

Proof of continued compliance (certification) is to be presented to the QCC annually or 30 days after expiry of the submitted ISO 9001:2008 certificate (whichever comes first).

8.3 Testing and Inspection

Products carrying the Trustmark of Environmental Performance will be subject to the following unannounced inspection activities:

- Annually, the QCC will undertake market surveillance activities to test certified products available in the Abu Dhabi market.
- Samples can be inspected i) on-site at installed locations of Abu Dhabi government/municipal owned buildings, ii) at point of entry to the Abu Dhabi Market, and/or iii) at the manufacturers facility.
- Samples will be assessed for compliance to selected specific requirements given in Clause 5.2.
- The sampling schedule will target previously untested products on a year-on-year basis to ensure eventual testing of all certified products.

- If any product fails to meet the certification requirements during inspection the product certification in question will be withdrawn and the applicant required to perform testing of an agreed number of samples to verify compliance.
- If one of these additional samples also fails to meet the certification specifications, the certification status of all products from the applicant will be reviewed.

Proof of continued compliance to the requirements of the QCC certification must be provided if; i) a referenced standard listed in clause 4 has changed, or ii) the product has been modified, or iii) annually following issuance of the first certificate, whichever comes first.

In cases i) or ii), new test reports shall be provided; in case iii) an affidavit shall be provided by the applicant and the manufacturer that the production system has not been modified and the specification of the product remains unchanged.

APPENDIX A - PRODUCT ASSESSMENT AND CERTIFICATION PROCESS