

APPLICANTS AND MANUFACTURERS GUIDANCE

**EMIRATES CONFORMITY  
ASSESSMENT SCHEME (ECAS):  
ENERGY EFFICIENCY  
STANDARDS LABELLING (EESL)**

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# INTRODUCTION

In an effort to enhance safety, implement energy efficiency measures, and protect the environment, the Government of the United Arab Emirates (U.A.E.) introduced mandatory regulatory controls on specific product placed onto the market. The U.A.E. Ministry for Commerce and Industry issued Federal Law No. 21 Energy Efficiency Standards Labelling (EESL) to be introduced under a mandatory regulatory program called the 'Emirates Conformity Assessment System' (ECAS). The program is to be overseen and managed by the sole appointed regulatory body, 'Emirates Standards & Metrology Authority' (ESMA).

The ECAS program covers safety, energy efficiency and environmental requirements for electrical and electronic devices and certain gas products; those products identified to meet energy efficiency requirements are subject to a separate program called 'Energy Efficiency Standards – Labelling' (EESL).

The ECAS program for energy efficiency, which this document concentrates on, mandates U.A.E. and normative IEC Standards as a means of supporting and meeting requirements of the regulation. The conformity assessment process for energy efficiency gives a presumption of conformity in meeting the requirements of U.A.E. standards and correct calculation of an Energy Efficiency Ratio (EER) or Energy Efficiency Index (EEI) and, depending on this calculation, determines the energy classification in the form of a star rating, with 5 stars being the most efficient and 1 star being the least. On meeting the requirements of this regulation, an ECAS Certificate of Conformity is issued, authorising use of the ECAS Conformity Mark. If the product is also subject to a factory inspection as a requirement of the regulation or applied for in addition, the Emirates Quality Mark (EQM) can be affixed by the manufacturer. The Emirates Quality Mark is shown below:



Intertek is an accredited Notified Body (NB0007) for the ECAS program, as a leading global expert in and provider of assurance, testing, inspection, and certification services with a network of laboratories and local country offices worldwide, Intertek has prepared the following guidance document on the U.A.E. ECAS program for EESL Products to assist manufacturers/importers/agents who import Electrical Product into the United Arab Emirates in understanding and complying with the U.A.E.'s mandatory regulatory conformity assessment requirements for energy efficiency and consumption. This document includes coverage of compliance obligations, the certification process, requirements for meeting the mandatory ECAS requirements for placement of energy-efficient product onto the Emirates market, and the penalties associated with non-compliance. By understanding these critical elements as well as how Intertek can fully support the entire certification process, manufacturers/importers/agents will be better positioned for long-term success relative to their sales and marketing activities within the U.A.E. region.

# TECHNICAL REFERENCES AND TERMS

## Introduction

Technical regulations detailed within the Cabinet Order 21, Technical Regulations for Energy Efficiency Standards Labelling (EESL) define the criteria for product registration under the Emirates Conformity Assessment Scheme (ECAS) being implemented by the Emirates Standardization and Metrology Authority (ESMA). The requirements defined in this document are issued for the information, guidance, and compliance of manufacturers and importers intending to promote and place their products into the United Arab Emirates market.

## Objective

The United Arab Emirates shall take all appropriate measures to ensure that electrical equipment may be energy-efficient when placed on the market or put into service only if it has been constructed in accordance with good engineering practices to ensure it meets defined energy consumption limits.

These provisions constitute the essential requirements of the Emirate Conformity Assessment Scheme rules. Before being placed on the market or put into service, the electrical equipment must meet these requirements. This means that the electrical product(s) identified must meet:

- Technical Requirements – The electrical and electronic equipment shall be so constructed using sound engineering practices in respect to product electrical safety and energy efficiency. The technical requirements of equipment meeting these safety and efficiency practices are specified in IEC Standards, U.A.E. Standards, or other relevant standards and technical documents.
- Administrative Requirements – Compulsory procedures and documents implemented by the manufacturer or his authorized representative are imposed by ESMA (e.g. conformity assessment procedures, marking on the product, technical files, declaration of conformity, and instructions for use).

## Scope: Product Categories in the Scope of the EESL Technical Regulation

PRODUCT CATEGORY	EER/EEI CALCULATION
Domestic AC	Cooling Capacity/Energy
Washing MC and Dryers	Water/Energy
Refrigeration	Cooling Capacity/Energy
Water Storage Heaters	Energy/Standby Loss
Commercial and Central AC *	Cooling Capacity/Energy
Dishwashers	Water/Energy

### Definition of Terms

- **ESMA** – The Emirates Authority for Standardization and Metrology. The U.A.E. Standards body as mandated by Federal Law No. 28. It is the sole government authority body responsible for implementing this Specific Requirement for Low Voltage Equipment.
- **Low Voltage Equipment (LVE)** also referred to as “Equipment:” All electrical or electronic equipment including components, parts, finished products, systems and installations, with supply voltage between 50 and 1000 volts for alternating current (AC) and between 75 volts to 1500 volts for direct current (DC).
- **ECAS** – Emirates Conformity Assessment Systems.
- **ECAS Certificate of Conformity** – a certificate of conformity is issued complying to a relevant U.A.E. Standard/s or ESMA-recognized National/Regional and International Standards.
- **Energy Standards Efficiency Labelling (EESL)** – a separate part of the ECAS Program for products identified to meet energy efficiency requirements
- **Recognized Conformity Assessment Body** – a competent body recognized by ESMA to carry out factory inspection and/or testing of product.
- **Approved Standard** – refers to a Product Standard approved by ESMA to be used in verifying conformity of a product.
- **Approved Supplier** – a manufacturer and/or trader responsible for the product covered by this Specific Requirement.
- **Conformity Assessment** – any activity to determine directly or indirectly that a process, product, or service meets relevant standards or regulation and fulfils all relevant requirements.
- **Specific Requirements** – a document specifying the set of rules in order for a product to be registered under ECAS.
- **Initial Testing** – refers to the verification of product conformance to specified Product Standards and/or Specific Requirements prior to the registration of Product.

# ENERGY EFFICIENCY STANDARDS LABELLING (EESL) TECHNICAL REGULATIONS

ECAS Technical Regulations for Energy Efficiency detail precise definitions and obligations regarding economic operators for meeting product conformity requirements and procedures.

- The Technical Regulations objectives for products identified in the scope of the EESL are subject to electrical energy usage involving cooling capacity performance and consumption limits, defined as Energy Efficiency Ratios (EER %) or Energy Efficiency Index (EEI K factor) for determination of energy rating classification in the form of star ratings identified on an Energy Label affixed to the Product.
- Where specified in product standards, tolerances for electrical supply and frequency values shall be applied; in addition, and where applicable, test conditions/thermal classifications for the U.A.E. shall be also applied (T Classifications)
- Supply – electrical characteristics of the U.A.E. are considered
- Products subject to EER or EEI calculations are also subject to meeting Electrical Safety Standards under the ECAS Low Voltage Equipment Requirements
- Products subject to EESL requirements are subject to a Type 3 Conformity Assessment Program under ISO IEC 17067 for a factory inspection; on successful review, the EQM can be affixed to the product.

# REGULATED PRODUCTS AND EER/EEI VALUES AND STAR RATING TABLES

## DOMESTIC AIR CONDITIONERS

STANDARD	PRODUCT
UAE.S 5010-1- 2016	Domestic Air Conditioning

### Purpose

Standard for energy efficiency labelling requirements to determine power consumption over a specific time period (Kw/h) cooling performance ratings against co-efficient factors, which result in an efficiency grading/rating being applied.

### Product Scope

Domestic single package and split-system non-ducted air conditioners, single package-free standing, wall mounted.

### Normative References

- UAE.S ISO 5151: 2011 (Non-ducted air-conditioners and heat pumps – Testing and Rating for performance)
- UAE.S GSO 1005:1998 (Room Air Conditioners)
- UAE.S GSO 1006:1998 (Methods of test for room air conditioners)

### Domestic AC EER Table

STAR RATING	EER (Btu-h)/W at T3 Window Type	EER (Btu-h)/W at T3 non-ducted split types of AC
5	EER ≥ 8.51	EER ≥ 9.01
4	8.50 ≥ EER ≥ 8.01	9.00 ≥ EER ≥ 8.31
3	8.00 ≥ EER ≥ 7.51	8.30 ≥ EER ≥ 7.71
2	7.50 ≥ EER ≥ 6.81	7.70 ≥ EER ≥ 7.11
1	6.80 ≥ EER ≥ 6.30	7.10 ≥ EER ≥ 6.80

Note: Results required from test program based on 2 tested samples.

Annual Energy Consumption = (Total Input Power - KW) X (1000 hour/year)

**Energy Efficiency Labelling Requirements**



**PRODUCTS COVERED**  
ENERGY EFFICIENCY LABELS

**Non-ducted Room Air-conditioners (Updated)**  
- Status: For implementation by Nov 2015  
- Program Type: MEPS and Labeling Program






**WASHING MACHINES/DRYERS**

STANDARD	PRODUCT
UAE.S 5010-2-2013	Washing Machines/Dryers

**Purpose**

This standard addresses methods for measuring the energy and water consumption of clothes washing machines for household use, with or without heating devices and for cold and/or hot water supply. To provide a set procedure for proper testing of Labelling – Energy Efficiency Label for Electrical Appliances.

**Product Scope**

Appliances for water extraction by centrifugal force and applicable to appliances for both washing and drying textiles (washer-dryers) tumble dryers, automatic and non-automatic type, with or without a cold water supply and incorporating a heating device.

**Measured performance requirements**

- Energy Consumption
- Water Consumption
- Spin Extraction Performance for Washing Machines
- Condensation Efficiency for Condenser Dryers

**Test Methodology and Standards**

The tests specified in this regulation are required to be carried out, in accordance with the below UAE.S IEC standards to calculate the energy efficiency and performance characteristics of a washing machine and dryer with hard water.



**Test Standards**

- UAE.S IEC 60456:2010 – Clothes washing machines for household use – Methods for measuring the performance
- UAE.S IEC 61121:2012 – Electrical tumble dryers for household use
- UAE.S IEC 62512:2012 – Electric clothes washer-dryers for household use – Methods for measuring the performance

**EER Calculation / Efficiency Table – WMC Vertical & Horizontal Drums**

HORIZONTAL DRUMS		VERTICAL DRUMS	
ENERGY EFFICIENCY CLASS	ENERGY EFFICIENCY RATIO Wh/Kg	ENERGY EFFICIENCY CLASS	ENERGY EFFICIENCY RATIO Wh/Kg
5 star	EER > 90	5 star	EER > 14
4 star	90 ≥ EER ≥ 110	4 star	14 ≥ EER ≥ 17
3 star	110 ≥ EER ≥ 130	3 star	17 ≥ EER ≥ 20
2 star	130 ≥ EER ≥ 150	2 star	20 ≥ EER ≥ 23
1 star	150 ≥ EER ≥ 170	1 star	23 ≥ EER ≥ 26

**Spin Dryer efficiency, Remaining Moisture Content (RMC) in accordance to UAE.S IEC 60456:2010**

SPIN DRY CLASS EFFICIENCY	RMC%
5 star	EER > 50
4 star	50 ≥ EER ≥ 60
3 star	60 ≥ EER ≥ 70
2 star	70 ≥ EER ≥ 80
1 star	80 ≥ EER ≥ 90

**Energy efficiency classifications for washer dryers**

CLASS EFFICIENCY	EER PER KG LOAD – OPERATION (WASH, SPIN, DRY)
5 star	EER > 700
4 star	700 ≥ EER ≥ 850
3 star	850 ≥ EER ≥ 1000
2 star	1000 ≥ EER ≥ 1150
1 star	1150 ≥ EER ≥ 1300

**EER classification for Tumble Dryers**

CLASS EFFICIENCY	EER IN WH/CYCLE PER KG LOAD
5 star	EER > 250
4 star	250 ≥ EER ≥ 375
3 star	375 ≥ EER ≥ 500
2 star	500 ≥ EER ≥ 625
1 star	625 ≥ EER ≥ 750

Condensation Efficiency (CE) Condenser Dryers

CLASS EFFICIENCY	WEIGHTED CONDENSATION EFFICIENCY
5 star	Ce > 90
4 star	75 ≥ Ce ≥ 90
3 star	60 ≥ Ce ≥ 75
2 star	45 ≥ Ce ≥ 60
1 star	Ce ≥ 45

Energy Labeling Requirements: Washing Machines



REFRIGERATION

STANDARD	PRODUCT
UAE.S 5010-3-2013	Refrigeration

Purpose

To provide a set procedure for testing for Energy Efficiency Label for Electrical Appliances Part 3: Household Refrigerating Appliances to UAE.S 5010-3:2013.

Product Scope

This regulation applies to new household refrigerators, freezers, and refrigerator-freezers having a capacity of not more than 1,500 litres imported to or manufactured in the U.A.E. This regulation applies to electric mains-operated household refrigerating appliances, standalone or built-in configuration.

Refrigerating appliances intended for industrial or commercial use are outside the coverage of his regulation. Refrigerating appliances intended for refrigeration of items other than foodstuff are not included in this regulation.

### Performance Standards

The test methodology for the energy consumption test, marking requirements, and other terms and definitions applicable to this regulation is in accordance with the following standard:

- UAE.S IEC 62552:2013 – Household Refrigerating Appliances – Characteristics and Test Methods

### Electrical Safety

Products covered by this regulation shall comply with the requirements set by the reference Scheme for Low Voltage Equipment (LVE) under the Emirates Conformity Assessment Scheme (ECAS) and shall acquire a valid Certificate of Conformity (CoC)

- Test Voltage and Frequency: 230 V 50Hz
- Tropical Class Conditions: T Class (16 – 43 Degrees C)

### Plug Requirements

Appliances intended to be supplied with an electric plug for mains connection shall be supplied with a BS 1363 plug configuration compliant to UAE.S/GSO IEC 60884-1:2007 and UAE.S IEC 60884-2-1:2012

### Refrigeration Type Classifications

CATEGORY	DESCRIPTION
1	Refrigerator with one or more food storage
2	Refrigerator – Cellar / Wine storage
3	Refrigerator – Chiller with 0 star compartment
4	Refrigerator – 1 star compartment
5	Refrigerator – 2 star compartment
6	Refrigerator – 3 star compartment
7	Refrigerator Freezer
8	Upright Freezer
9	Chest Freezer
10	Multi use – other refrigerators

### Energy Efficiency Index: (EEI)

The Energy Efficiency Index (EEI) of an appliance is defined as the ratio of the actual annual energy consumption of the appliance to the standard annual energy consumption. The indices are expressed in percentages.

Annual Energy Consumption is calculated using the formula below:

$$AE_c = E_{24h} \times 365 \text{ days}$$

Where:

$E_{24h}$  Energy consumption for the household refrigerating appliance (kWh/24h) rounded to three (3) decimal places

Standard Annual Energy Consumption is calculated using the formula below and rounded to two (2) decimal places:

$$SAE_c = [N + (V_{adj} \times M)] + CH$$

Where:

$SAE_c$  Standard Annual Energy Consumption (kWh/year)  
 $N$  and  $M$  Values are given in Table 7 below  
 $V_{adj}$  Adjusted volume (liters)  
 $CH$  Is equal to 50kWh/year for household refrigerating appliances with a chill compartment with a storage volume of at least 15 liters

### Refrigeration EEI

STAR RATING	ENERGY EFFICIENCY INDEX (EEI)
5-Star (most efficient)	$EEI < 33$
4-Star	$33 \leq EEI < 44$
3-Star	$44 \leq EEI < 75$
2-Star	$75 \leq EEI < 110$
1-Star (last efficient)	$110 \leq EEI < 125$

### Marking and Instruction Annual Requirements

- Markings and instruction manuals and energy efficiency labels supplied with products shall include the Arabic language.
- Cautionary and/or any safety warnings for the direct user or consumer shall be in Arabic language.
- Products shall not contain any material or descriptive images or definitions which may be regarded offensive to the Islamic Religion.

Additional requirements for marking and instruction manual set by the applicable standard.

**ENERGY LABELLING REQUIREMENTS: REFRIGERATION**



**STORAGE WATER HEATERS**

STANDARD	PRODUCT
UAE.S 5010-4:2014	Storage Water Heaters

**Purpose**

To provide a set procedure for proper testing of Labelling - Energy Efficiency Label for Electrical Appliances Part 4: Storage Water Heaters to UAE.S 5010-4:2014.

**Product Scope**

This regulation establishes requirements for electric storage water heaters for household and similar purposes and intended for heating water below boiling temperature, their rated capacity being not more than 500L.

**Performance Standards**

UAE.S IEC 60379:2013 – Methods for measuring the performance of electric storage water heaters for household appliances.

**Performance Requirements**

Energy Efficiency Index (EEI) Products should meet, at the least, a minimum energy efficiency index of 135%.

**Electrical Safety**

Meets the requirement “Emirates Conformity Assessment Scheme (ECAS) for Low Voltage Equipment (LVE) UAE.S IEC 60335-2-15: 2012.”

**Appliance Classification**

All electric storage water heaters covered by this regulation shall be classified into four (4) categories:

CLASS	DESCRIPTION
1	Unvented electric storage water heaters having a rated capacity not exceeding 30 litres
2	Open-outlet electric storage water heaters having a rated capacity not exceeding 30 litres
3	Horizontal tank type electric storage water heaters having a rated capacity 30 litres up to 500 litres
4	Vertical tank type electric storage water heaters having a rated capacity 30 litres up to 500 litres

**Energy Efficiency Index Calculation**

The formula and factors below shall apply in calculating the energy efficiency index of the product.

$$E_{cons} = \frac{E_1}{t_1} \times 24$$

Where:

$E_1$  – Energy consumed over  $t_1$  duration > 48 hours  
 $t_1$  – Elapsed time where steady state condition is reached and measurement of  $E_1$  is done  
 Energy Consumed (Econs)

**Energy Efficiency Index %**

STAR RATING	ENERGY EFFICIENCY INDEX (EEI) (%) $I_e$
5	$I_e \leq 70$
4	$70 < I_e \leq 85$
3	$85 < I_e \leq 100$
2	$100 < I_e \leq 115$
1	$100 < I_e \leq 130$

**Annual Energy Consumption Calculation**

The annual energy consumption of the product shall be calculated using the formula below:

$$AEC = Q_{pr} \times 75$$

Note: An assumption of an annual standby hour is 1,800 hours.

**Energy Labeling Requirements: Hot Water Storage Heaters**



**COMMERCIAL AND CENTRAL AIR CONDITIONERS**

STANDARD	PRODUCT
UAE.S 5010-5:2016	Commercial and Central Air Conditioners

**Purpose**

To provide a set procedure for proper testing of Labeling - Energy Efficiency Label for Electrical Appliances Part 5: Commercial and Central Air Conditioners to UAE.S 5010-5:2016.

**Product Scope**

This procedure shall be followed for any UAE.S 5010-5:2016 testing for electrically driven, mechanical-compression of: ducted air conditioners using air and water-cooled condensers and ducted air-to-air heat pumps.

**Applicable Standards**

UAE.S ISO 13253:2011 “Ducted air-conditioners and air-to-air heat pumps — Testing and rating for performance.”

- UAE.S ISO 15042:2011 “Multiple split-system air-conditioners and air-to-air heat pumps — Testing and rating for performance”
- UAE.S ISO 13256-1:1998 “Water-source heat pumps — Testing and rating for performance — Part 1: Water-to-air and brine-to-air heat pumps”
- UAE.S ISO 13256-2:1998 “Water-source heat pumps — Testing and rating for performance —Part 2: Water-to-water and brine-to-water heat pumps”
- UAE.S AHRI 550/590 “Performance Rating Of Water-Chilling and Heat Pump Water-Heating Packages using the Vapor Compression Cycle”

**Minimum Energy Performance: (MEP)**

**EMIRATES CONFORMITY ASSESSMENT SCHEME (ECAS):  
ENERGY EFFICIENCY STANDARDS LABELLING (EESL)**

The minimum energy performance standard (MEPS) value for the air conditioner in the scope of this standard shall be greater than or equal to the value in this regulation when calculating the cooling capacity at test conditions (T3) (except chillers).

Test voltage shall be 230 volts (V).

The minimum energy performance value (MEP) determined in accordance with the following table where the EER (Energy Efficiency Ratio) is determined in accordance with the test procedure of standard UAE.S ISO 13253:2011.

**Rated Capacity / MEP**

<b>RATED CAPACITY</b>	<b>MINIMUM ENERGY EFFICIENCY (EER) (BUT.H/WATT) T3</b>
CC < 135000	8.10
135000 ≤ CC < 240000	7.90
240000 ≤ CC < 760000	7.50
760000 ≤ CC	7.20

**Water source heat pumps**

The minimum energy performance value (MEPS) determined in accordance with the following table (Table 2) where the EER (Energy Efficiency Ratio) is determined in accordance with the test procedure of standards No: UAE.S ISO 13256-1:1998 and No: UAE.S ISO 13256-2:1998.

The minimum allowable value of the EER and energy efficiency grade as in table:

<b>TYPE</b>	<b>ENTERING WATER OR FLUID</b>	<b>RATED CAPACITY</b>	<b>MINIMUM ENERGY EFFICIENCY (EER) (BUT.H/WATT) T3</b>
Water source	30°C	ALL	7.90
Ground water source	25°C	ALL	8.70

**Water chiller**

The minimum energy performance value (MEPS) determined in accordance with the following table (Table 3) where the COP (Energy Efficiency Ratio) is determined in accordance with the test procedure of standard UAE.S AHRI 550/590.

ALL chillers should work continually for two hours at T3 condition and the test for COP will be at T1 conditions.

The minimum value of the COP and energy efficiency grade as in table:

<b>Cooling type</b>	<b>Rated capacity (KW)</b>	<b>MINIMUM ENERGY EFFICIENCY (cop) (FULL LOAD) (T1) (BTU/H/WATT)</b>
Air cooled package chillers	CC < 630	8.50
	630 ≤ CC	9.50
Water cooled chillers	CC < 528	13.50
	528 ≤ CC < 1055	15.00
	1055 ≤ CC	17.00

**Multiple Split System**



The minimum energy performance value (MEPS) determined in accordance with the following table (Table 4) where the EER (Energy Efficiency Ratio) is determined in accordance with the test procedure of standard UAE.S ISO 15042:2011

The minimum allowable value of the EER and energy efficiency grade as in table:

<b>RATED CAPACITY BTU/H</b>	<b>MINIMUM ENERGY EFFICIENCY (EER) (BTU/H/WATT) AT T3</b>
CC ≤ 90000	8.30
90000 < CC ≤ 135000	7.80
135000 < CC	7.50

**Name Plate Information and Instruction Sheet or Manual**

In addition to any information needed to be displayed on the air conditioner unit, the following shall be marked on the name plate of the air conditioner, in Arabic or English or both:

- Manufacturer’s name and/or trademark
- Country of origin
- Rated voltage or rated voltage range (V or Volts)
- Manufacturer’s model or type reference and serial number of the unit
- Rated frequency (Hz or Hertz)
- Rated current (A or Amperes)
- Rated power input (W or KW, watts or kilowatts)
- Energy efficiency value

**DISHWASHERS**

<b>STANDARD</b>	<b>PRODUCT</b>
UAE.S 5010-6:2016	Dishwashers

**Purpose**

To provide a set procedure for proper testing of Labelling – energy efficiency label for electrical appliances - Part 6: Dishwashers to UAE.S 5010-6:2016.

**Product Scope**

This regulation deals with methods for measuring the energy and water consumption for dishwasher household use. This standard also applies to those sold for built-in household dishwashers and the requirements related to:

- Energy Consumption
- Water Consumption

*Dishwashers intended for commercial purposes are not included.*

**Product Requirements: Electrical Safety**

Requirements set by the Emirates Conformity Assessment Scheme (ECAS) for Low Voltage Equipment (LVE) apply.

**Performance: Energy Efficiency**

- Performance tested at supply voltage and frequency: Rating - 230 V AC 50 Hz
- Products covered by this regulation, if supplied with an electrical plug, shall be supplied with an electrical plug of BS 1363-type design that complies with the UAE.S IEC 60881-1 standard.

**Instruction Manual and Markings**

Instruction manuals and cautionary and/or safety warnings shall be in Arabic and English language.

**Test Conditions**

- In carrying out the tests as specified above, the unit shall be tested at a voltage of 230V±2% and a frequency of 50Hz±1%.
- Water temperature - 25±2°C

**Test Methodology and Standards**

The tests accordance with UAE.S IEC 60436 (energy efficiency and performance characteristics of a dishwasher with hard water).

**Efficiency Index: (EEI)**

The annual energy consumption (AEC) of a household dishwasher is a calculation given as (KWh).

$$AEC = Et \times 280$$

**Calculation of Annual Water Consumption**

The annual water consumption (AWC) of a household dishwasher is a calculation given as (L/per annum)

$$AWC = Wt \times 280$$

**Energy and water efficiency classes**

ENERGY EFFICIENCY CLASS	ENERGY EFFICIENCY INDEX	WATER EFFICIENCY INDEX (LITER)
5 stars (most efficient)	EEI < 70	AWc < 1800
4 stars	70 ≤ EEI < 80	1800 ≤ AWc < 2100
3 stars	80 ≤ EEI < 90	2100 ≤ AWc < 2400
2 stars	90 ≤ EEI < 100	2400 ≤ AWc < 2700
1 stars (least efficient)	100 ≤ EEI < 110	2700 ≤ AWc < 3000

**Energy Labelling Requirements: Dishwashers**



Presumption of conformity is achieved by meeting the relevant UAE.S Standards; however, Intertek also recognizes other international and national standards such as IEC standards and other national standards.

- Intertek will accept test reports and certificates such as IECEE CB or other accredited schemes/programs where correlation/harmonization exists and have a validity period not exceeding three (3) years from the date of issue.
- When a relevant UAE.S standard does not exist or has not been published, Intertek will accept the current issued version of IEC standards or where correlation exists to other standards.
- Upon meeting the ECAS EESL requirements, the manufacturer shall draw up a Declaration of Conformity, as well as, if applicable, an Importer Declaration of Conformity. Product application, testing AND certification review and registration is conducted by an appointed Notified Body by the applicant submitting a Product Technical File. On successful conformity assessment and factory inspection, the Notified Body shall authorise the use of the EQM and upload the Certificate of Conformity onto the ESMA product registration database; such a registration is valid for one year only.



REGULATION	ECAS	EESL	EQ MARK
Low Voltage Equipment	Y	N	N
UAE.S 5010-1-2016: EESL Domestic AC.	Y	Y	Y
UAE.S 5010-2-2013: EESL Washing MC and Dryers	Y	Y	Y
UAE.S 5010-3-2013: EESL Refrigeration	Y	Y	Y
UAE.S 5010-4-2014: EESL Water Storage Heaters	Y	Y	Y
UAE.S 5010-5-2016: EESL Commercial and Central AC	Y	Y	Y
UAE.S 5010-6– 2016: EESL Dishwashers	Y	Y	Y

# CERTIFICATION PROCESS

## DOCUMENT REQUIREMENTS FOR CERTIFICATION APPLICATION – EESL (ALL PRODUCTS)

Applicants are required to submit a Technical File that represents the product and shall contain the following documents:

- Valid IECEE safety test report and supporting CB certificate (No older than 3 years from the date of issue)
- And/or a valid G Mark Type Examination Certificate issued by a GCC GSO Notified Body
- ISO/IEC 17025 accredited Energy Efficiency.
- IECEE Safety Test Report and supporting CB Certificate
- Manufacturers factory Inspection report
- Manufacturer's/Importers Declaration of Conformity
- User's Manual in Arabic and English language
- Bill of Materials
- Manufacturers risk assessment
- Technical specifications relating the operation of the product
- Concept of operation
- Engineering & electrical schematic drawings
- Importers/Agents letter of Authorization
- Certificate of Legal Entity Trader/Importers Registration

## ROLE OF THE MANUFACTURER/IMPORTER

The manufacturer/importer is obliged to ensure that the presented Type product is manufactured accordingly and placed onto the market meets the requirements of the Low Voltage Regulation.

The Manufacturer/Importer shall:

- Establish Technical Documentation (Technical File) for each model or range of product
- Draw up a Manufacturers/Importers Declaration of Conformity
- A registered authorised agent (Importers Certificate of Registration in the U.A.E.)
- Specify address of the place of manufacture and storage of the product
- Provide a list of the UAE.S or IEC standards applied in full or in part

Once all of these requirements have been satisfied and the product has been registered in the electronic registration system, the manufacturer can affix the ECAS Conformity Mark and/or Emirates Quality Mark (EQM) if applicable.

## REGISTRATION PROCEDURE/APPLICATION SUBMISSION

Working together with and on behalf of the manufacturer/importer, Intertek as the appointed Notified Body shall conduct a review of the application with a view of conducting Certification Process and issue an ECAS Certificate of Conformity and (if

applicable) authorize the affixing of the EQM and ECAS Conformity Mark. In parallel, Intertek shall register the product on the ESMA product registration database. Intertek shall conduct the certification process in accordance with ISO/IEC 17065 mandatory work flow as indicated in Fig 1.2, and shall be obliged to conduct an annual technical review based on changes to:

- ECAS-certified product
- Revision of IEC standards (Safety & Performance – EER/I)

Issue new certificate annually based on review of a and b

- All product shall undergo a full re–test, inspection, and certification at the 3-year point from the date of issue of supporting test reports.

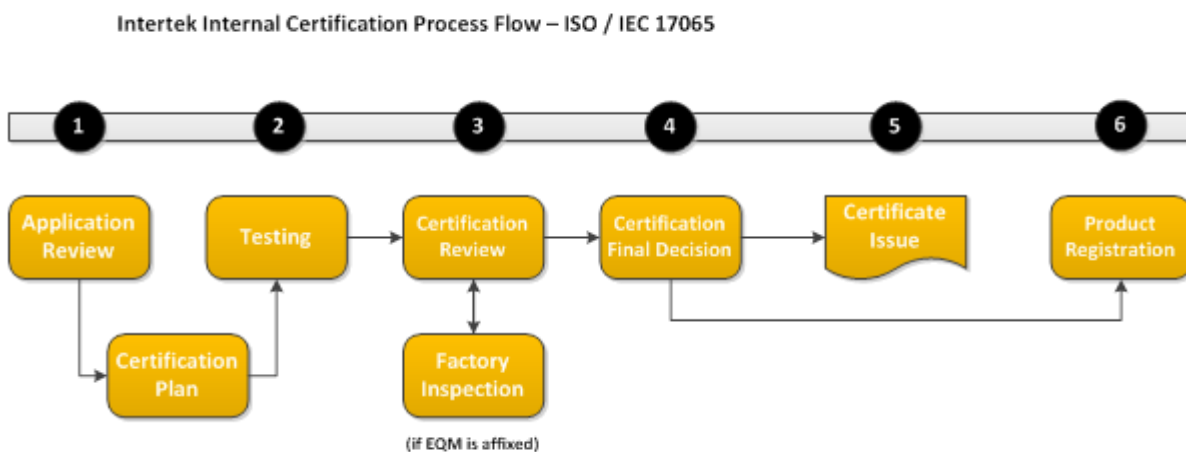
**CONFORMITY ASSESSMENT PROCEDURE**

Upon the acceptance of the Application, product shall be evaluated according to a relevant conformity assessment scheme.

- Samples and technical file shall be tested as required to relevant UAE.S standards
- Samples shall be tested by a recognized third party accredited testing laboratory
- Technical File and performance reports are reviewed by Notified Body
- Conduct a factory inspection, produce a factory inspection report
- On successful review, Notified Body will issue ECAS EESL CofC and authorize the EQM
- Applicant shall bear all of the cost related to the conformity assessment of the product

Intertek has broken down the steps described above in a visual flow (Figure 1.1).

**Figure 1.1: Intertek’s test/certification program for Issuance of ECAS EESL Certificate of Conformity**



**REGULATED PRODUCTS**

For regulated products, manufacturers must choose a single Notified Body (NB) entity, such as Intertek, to examine the technical design of a product and verify that the technical design of the product meets the requirements of the applicable ECAS regulations and for the issuance of an evaluation report with an ECAS Certificate of Conformity. The Notified Body must also ensure that the manufacturing process has a production quality system implemented in order to confirm that the product is being manufactured in accordance with the technical specifications.

## EMIRATES CONFORMITY ASSESSMENT SCHEME (ECAS): ENERGY EFFICIENCY STANDARDS LABELLING (EESL)

The product manufacturer must still create a Technical Documentation file for each model of product, and this documentation must still include a risk analysis/assessment report and test reports among other additional documentation requirements noted for regulated products above, but with the additional inclusion of the Notified Body-issued Certificate of Conformity.

### LANGUAGE AND STORAGE GUIDELINES: REGULATED PRODUCTS

The Technical Documentation must be drawn up in the Arabic language; if this is not possible, documents in English can be submitted after the approval of the Competent National Authorities in the U.A.E. Additionally, the manufacturer must keep the Technical Documentation at the disposal of the Competent National Authorities for 10 years after the electrical equipment has been placed on the market.

### PRODUCT REGISTRATION

- 9.1 Product shall be registered after a full confirmation that the product is complying with the requirements of the relevant IEC or UAE Standard and by this Specific Requirement.
- 9.2 Where the results of test showed that product is not complying with the requirements, the client needs to rectify the observed non-compliances and can reapply once rectification is made.
- 9.3 An ECAS Certificate of Conformity shall be issued to the product upon the fulfilment of all the requirements.
- 9.4 The certified product shall be registered onto the ESMA Certified Product database by the Notified Body

### INTERTEK ECAS NOTIFIED BODY & SUPPORTING CERTIFICATION BODY LOCATIONS

#### ECAS Notified Body

Intertek International Ltd Dubai Branch  
Millennium Plaza Tower, 14th & 15th Floors  
Sheikh Zayed Road  
P.O. Box 26290  
Dubai, U.A.E.  
Tel: +971 (4) 3178777  
Fax: +971 (4) 3316883

#### ECAS Programs - Other Country Contact Information

EUROPE, THE MIDDLE EAST, AND AFRICA  
<http://www.intertek.com/contact/ema/>

NORTH AND SOUTH AMERICA  
<http://www.intertek.com/contact/americas/northandsouthamerica/>

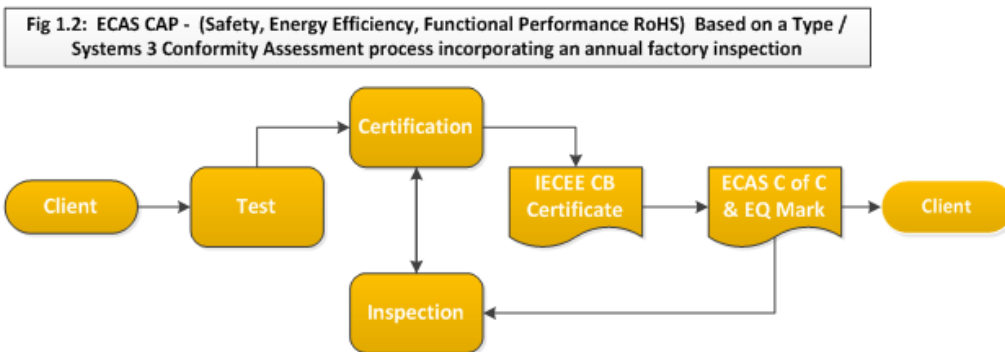
ASIA PACIFIC  
<http://www.intertek.com/contact/asiapacific/>

**CERTIFICATION CRITICAL WORK FLOW -- ISO/IEC 17065**

The certification process to be followed by the Intertek Notified Bodies will be in line with the work flow as described under Clause 7, ISO/IEC 17065 in that five principle (5) steps will be undertaken (see Figure 1.2 below):

- **Quotation** (Based upon customer requirements and supplied information)
- **Certification** Application Review (Review of application and produce Certification Plan)
- **Evaluation** (Testing conducted in accordance with ISO/IEC 17025)
- **Certification Review** (Technical Review of Test Reports and Technical File)
- **Final Decision** (Grant of Certification, update of ESMA Registration Database, issuance of ESMA/ECAS registration number)

**Figure 1.2: Intertek’s test/certification program for Issuance of ECAS EESL Certificate of Conformity**



**INTERTEK ACCEPTANCE OF THIRD PARTY TEST REPORTS**

Intertek will accept third party test reports providing that the following conditions are met:

- The report is issued by an ISO/IEC 17025 ILAC signatory or IECEE report and accompanying CB certificate
- The report is not older than 3 years from the date of issue
- The reference standards used within the third-party report are an IECEE CB standard that on review is deemed valid by the Notified Body and covers the national deviations defined within ECAS Regulation for Low Voltage Electrical Equipment for the U.A.E.
- The reference standards used do not have a date of withdrawal within one (1) year

**INTERTEK ACCEPTANCE OF THIRD PARTY CERTIFICATION**

**Intertek will accept third party certification issued for the ECAS Certificate of Conformity such as IECEE CB Certificate or G Mark (where appropriate).**

The Certification is issued by an accredited ISO/IEC 17065 body or IECEE NCB and is representative of the product series or range:

- Certificate validity is in date with a minimum of three (3) years remaining
- No date of withdrawal against the reference standard(s) within (1) year of validity expiry
- The valid Certificate is accompanied with a representative Technical File that meets the requirements of ECAS Regulation for Low Voltage Electrical Equipment and Appliances.
- Reference standard(s) used are representative of the product and deemed suitable by Intertek

## EMIRATES CONFORMITY ASSESSMENT SCHEME (ECAS): ENERGY EFFICIENCY STANDARDS LABELLING (EESL)

- In all cases Intertek shall ensure essential safety requirements before making a certification authorization decision

### INTERTEK-ISSUED ECAS CERTIFICATE OF CONFORMITY

Upon satisfactory completion of the Testing and Certification or sole Certification program, Intertek shall issue to the customer the ECAS Certificate of Conformity which authorizes the applicant to apply and use the ECAS Conformity Mark

- The ECAS Conformity Mark as shown on aforementioned pages shall be displayed on the product, on user instructions, and on the packaging in accordance with ESMA marking guidelines. On product that is too small to carry the designation, the Emirates Mark at a minimum shall be placed on user instructions and packaging.
- The ECAS Certificate of Conformity shall make reference to the representative ECAS product characteristics and supplied supporting Technical File in respect to being written in the English language.

### ECAS Conformity Marking

The license to use the ECAS Mark of Conformity (ECAS Mark) is given to companies manufacturing certified products. Below are examples of the ECAS mark to be affixed to certified product. The numerals indicate which Notified Body authorised the use of the mark. The Intertek Notified Body unique reference number is NB-0007.



### Conformity Marking Enforcement Timelines

Activity	Enforcement Dates
Enforcement of affixing of ECAS Conformity Mark	March 1, 2018
Market Surveillance check for correctly-marked certified products	March 1, 2018
Self-adhesive labels on Certified Products placed in U.A.E. market	Until December 31, 2018
Enforcement of Printed ECAS Mark (no separate adhesive labels permitted)	January 1, 2019

### ECAS Certificate of Conformity, Modification, and Renewal Process

On a design modification to the product such as a component change, the addition of an alternative component, the addition of new models to the existing certificate, or a change in the manufacturing process which affects the safety or performance of the product, the manufacturer shall in all cases contact the issuing Notified Body. Per that process, the product shall in all cases undergo a Certification Review and Certification Decision to determine that Essential Safety Requirements are met.

Per the requirements of the ECAS Program, Intertek shall contact the Client prior to the one (1) year ECAS validity expiry date to verify and confirm that Certificate Renewal is required. If renewal is required:



## EMIRATES CONFORMITY ASSESSMENT SCHEME (ECAS): ENERGY EFFICIENCY STANDARDS LABELLING (EESL)

- The product and Technical File shall undergo a design and technical review to ensure that the Essential Safety Requirements and Energy efficiency requirements are still being met (one sample for construction review is required)
- The reference standard(s) used for electrical safety presumption of conformity shall be verified
- If no technical changes to the reference standard(s) that affect the product are noted, ECAS Certificate of Conformity shall be issued – (e.g., new certificate, ECAS registration database updated, etc.)
- If technical changes to ECAS Certificate of Conformity are identified either through a design change or due to technical changes in the reference standard(s), the product may well be required to be submitted for either full or limited scope of testing
- ECAS Certificates of Conformity not required beyond the one (1) year or three (3) year validity date shall be withdrawn and the ECAS registration database updated
- In the event of technical changes to standard(s) which affect safety during the Certificate of Conformity validity period, the applicant will be informed of the technical changes and advised of the appropriate actions to take.

### Misuse of the ECAS Certificate of Conformity/ ECAS Conformity Mark / Emirates Quality Mark and Penalties for Non-Compliance

Intertek reserves the right to suspend and/or terminate certification based on misuse of the ECAS Mark in the case of, but not limited to:

- Non-payment of fees
- Altering or defacing the issued Certificate of Conformity
- Placing onto the market a model which has not been ECAS approved and bears the ECAS Mark
- Placement of non-conforming product onto the market
- Product identified by market surveillance as non-conforming
- Product found to be non-conforming on submittal to a Notified Body for verification of conformity
- Note: Full terms can be found in the Certification Agreement; these terms are accepted upon signing of the Certification Application Form

### Technical File Maintenance

Intertek recognizes that changes to a product or manufacturing process can happen at any time. However, the applicant is advised that if design changes are made which warrant document updates, Intertek should be advised, as this makes the technical file review in relation to the product build much easier when carrying out a certificate renewal or when conducting subsequent technical reviews.

## CHALLENGES FOR MANUFACTURERS

Manufacturers/importers/agents within the electrical/electronic industry who import Electrical Electronic Equipment and Devices into the United Arab Emirates are currently experiencing a market/regulatory transition – from requirements to lower their products’ energy consumption levels to achieve greater energy efficiency to regulations enforcing the use of more environmentally-friendly materials in tandem with numerous new testing procedures to certify compliance. All of these changes will consume R&D and engineering talent, involve the dedication of additional time and resources as well as potential investments in product redesign, and require attention to new testing procedures in order to ensure product compliance by the specific dates. Manufacturers/importers/agents may need to source new materials, pursue new safety certifications, reassess their entire manufacturing process, and re-test units – all potentially time-consuming and tedious processes required to ensure that their product is compliant by the specified deadlines.

As part of a proactive response to these industry dynamics, manufacturers/importers/agents are encouraged to plan for the changes by understanding the new standards and procedures required by regulatory bodies, how they apply to their products, and whether their products do or don’t comply. As such, manufacturers are encouraged to be proactive to help ensure a smooth, accurate, and executable transition to the new standards/regulations as well as to plan out the necessary redesign and/or certification activities they’ll need to undertake to ensure their product’s compliance and ability to be placed in the U.A.E. market.

## INSPECTION AND MARKET MONITORING

- Low Voltage Equipment identified under the EESL requirements are being inspected at Port of Entry. Only consignments having valid ECAS Certificate of Conformity is permitted to enter the country.
- Consignment without the ECAS Certificate of Conformity can be held in quarantine. Ports and Customs authority shall coordinate with ESMA whenever a consignment without ECAS certified is observed. Appropriate action shall then be taken by both ESMA and the Ports and Customs Authorities.
- Products manufactured in U.A.E. are monitored in the factory, warehouses, and in retail shops. Only products with ECAS Mark of Conformity are allowed to be traded in the U.A.E.
- Registered products being delivered to U.A.E. shall be inspected to ensure continuous compliance. ESMA reserves the right to inspect and conduct inspection of the product being distributed in the market. ESMA shall conduct a regular monitoring of product where ESMA shall take samples either at the retail shops or the manufacturer’s warehouse for independent testing. The result of test shall be the basis whether to continue or stop the registration of the product.
- ESMA also reserves the right to conduct factory inspection at any time to ensure full compliance of the product. Among other things, the factory inspection shall include the process and product verification of the product and the manner in which the product is carefully inspected and handled.
- All fees related to market sampling and testing shall be paid by the manufacturer/supplier.

### Fees

Detailed on Application

## MARKET ACCESS TO THE UAE THROUGH ECAS AND EQM

The ECAS program scope includes multiple industry sectors from Electrical, Electronic, and Gas Appliances, Machinery, Automotive, Building and Construction, Cosmetics, and Food in the form of issued technical regulations, under the ECAS banner and regulated by the appointed government body, Emirates Authority for Standardization and Metrology (ESMA).

Intertek has been appointed in the UAE as a Notified Body for for Low Voltage Equipment (LVE), Energy Efficiency Standards Labelling (EESL), lighting regulation, regulation for restriction of hazardous substances (RoHS) and equipment used in explosive atmospheres (ECAS Ex), Cosmetics, Perfumery and Personal Care Products (TR UAE GSO 1943) and is authorised to issue the mandatory Certificate of Conformity and/or Quality Mark on behalf of ESMA.

Visit our [website](#) to download guidance documents on the following ECAS regulations:

- Low Voltage Equipment (LVE)
- Energy Efficiency Standards Labelling (EESL)
- Lighting Regulation
- UAE Regulation for Restriction of Hazardous Substances (RoHS)
- ECAS Ex (Regulation of equipment used in Explosive Atmospheres)
- ECAS for Cosmetics and Perfumery Products

Intertek offers a variety of [Conformity Assessment Programmes](#) worldwide to ensure that products are fully tested in a recognised laboratory and a certificate issued before they are shipped to the client country.

### **THE CRITICAL ROLE OF THIRD PARTY QUALITY ASSURANCE**

In the changing U.A.E. market for low voltage products, the ability for a manufacturer/importer/agent to certify that its products comply with all relevant ECAS standards helps meet corporate sales targets and assures end users that those products comply with performance, safety, and energy standards and are qualified for specific end-use applications. Because specific standards and submission procedures can be very tedious and precise to administer but are highly critical to a company's growth and sales objectives, manufacturers/importers/agents are advised to avail themselves of a skilled third-party testing organization with expertise in the standards-setting, testing, and compliance processes to ensure maximum success.

Accredited third-party safety and performance testing organizations like Intertek can help take the guess-work out of the all-important process of testing and the pursuit and successful achievement of compliance. Intertek's possession of and investment in the highest-tech and most precise and capital-intensive testing equipment ensures consistent testing procedures and accurate results, while their demonstrated expertise in the unique details and current requirements of all industry certification programs and initiatives globally assures manufacturers/importers/agents of the utmost in quality coverage and representation. Along with the relationships they've established with all of the industry's key certifying organizations over the years, Intertek's exceptional understanding of and experience with the broad range of products, industries, standards, and testing procedures worldwide can proactively support a manufacturer's compliance while delivering security and peace of mind to both manufacturers and customers alike.



TOTAL QUALITY. ASSURED.

Intertek is a leading Total Quality Assurance provider to industries worldwide. Our network of more than 1,000 laboratories and offices and over 43,000 people in more than 100 countries, delivers innovative and bespoke Assurance, Testing, Inspection and Certification solutions for our customers' operations and supply chains. Intertek Total Quality Assurance expertise, delivered consistently with precision, pace and passion, enabling our customers to power ahead safely.

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