



## Thermal Insulation Implementation Audit Checklist

<b>Engineering Office Name:</b> _____
<b>Category:</b> _____ <b>CR No.:</b> _____
<b>CRPEP No.:</b> _____
<b>Discipline(s):</b> _____ <b>Telephone no. :</b> _____

### Requirements & Documents:

No.	Description	Yes	No	N/A	Remarks
1	Valid E.O. CRPEP.				
2	Valid E.O. Registration Certificate (CR).				
3	List of Project for Benayat System.				
4	List of Project for Online Building Permit System.				
5	Name of TII Authorized Engineers.				1. .... 2. ....
6	Pending from pervious Audit				

**We Engineering Office/Authorized Engineer undersigned hereby declare that audit checklist form is complete with all details and attach documents as required, and found it complied with EWA's Thermal Insulation Regulation**

<b>Engineering Office/Authorized Engineer:</b>	<b>EWA's Approval:</b>
<b>Name:</b> _____	<b>Reviewed by:</b> _____
<b>Sign:</b> _____ <b>Phone:</b> _____	<b>Sign:</b> _____
<b>Date:</b> _____ <b>((Stamp))</b>	<b>Date:</b> _____

## **Procedure of Thermal Insulation Audit by EWA:**

1. Engineering office shall send a request for thermal insulation audit and for engineers' interviews to the Thermal Insulation Unit before three months of the expired date of the existing certificate.
2. EWA will send a letter to the engineering office including the date of the audit and the audit checklist/requirements.
3. Engineering office shall submit the audit checklist/requirements and shall assign a certified engineer by EWA to follow up the audit with the thermal insulation unit.
4. EWA will select for the audit number of in-progress/completed projects with buildup area less than 2800m<sup>2</sup>.
5. Engineering office shall submit for the selected projects, the building permit, TII forms / Benayat data, architecture/structure/cross section drawings, glass details, roof coating details, owner declaration, and inspections reports for the construction stage.
6. EWA engineer will review the submitted documents and will verify the implementation of the thermal insulation on the site.
7. Audit report will be issued by EWA, containing findings and observations of EWA on the performance of the engineering office, and the extent of its commitment in implementing the thermal insulation in buildings.
8. Engineering office shall review the report, reply to the comments, sign it, and return it back to the thermal insulation unit.
9. If a violation found in the audit report, Engineering office shall submit a plan to rectify the violation and a declaration letter to strictly comply with the Thermal insulation regulation.
10. EWA will issue the thermal insulation certificate with a limited period based on the performance of the engineering office, response to the audit report, result of interview with engineering office's engineers and the rectification of the violation (if any).



## Thermal Insulation Implementation Completion Checklist

<b>Building Permit No.:</b> _____	<b>Application no.:</b> _____		
<b>Engineering office:</b> _____	<b>Owner name:</b> _____		
<b>Building type:</b> _____	<b>Build-up area:</b> _____	<b>No. of Floors:</b> _____	
<b>Building No.:</b> _____	<b>Road No.:</b> _____	<b>Block No.:</b> _____	<b>Area:</b> _____

### Requirements & Documents:

No.	Description	Yes	No	N/A	Remarks
1	TI Materials Delivery Notes				
2	Municipality forms				
3	Inspection Completed as per EWA Requirements				
4	TI Completion Certificate				
5	Copy of Building Permit (BP)				
6	Copy of Address Card				
7	EDD Approved load				
8	TI Modification (If any)				
9	Building Photo for Progress/Completion				

**We Engineering Office/Authorized Engineer undersigned hereby declare that audit completion form is complete with all details and attach documents as required, and found it complied with EWA's Thermal Insulation Regulation**

<b>Engineering Office/Authorized Engineer:</b>	<b>EWA's Approval:</b>
<b>Name:</b> _____	<b>Reviewed by:</b> _____
<b>Sign:</b> _____ <b>Phone:</b> _____	<b>Sign:</b> _____
<b>Date:</b> _____ <b>((Stamp))</b>	<b>Date:</b> _____



**Thermal Insulation Implementation**  
**Glass Approval Form**

Building Permit No.:	_____	Application no.:	_____				
Engineering office:	_____	Owner name:	_____				
Building type:	_____	Build-up area:	_____	No. of Floors:	_____		
Building No.:	_____	Road No.:	_____	Block No.:	_____	Area:	_____

**Glass Details:**

No	Description	Details	Remarks
1	Application	<input type="checkbox"/> Windows/Doors <input type="checkbox"/> Curtain Wall <input type="checkbox"/> Showrooms/Shopfront <input type="checkbox"/> Skylight	
2	Manufacturer & Brand		
3	Local Agent - Supplier / contact details		
4	Aluminum Fabricator / contact details		
5	Product Description		

**Required Documents:**

No	Description	Attachment	Remarks
1	Glass Manufacturer certificate (signed and stamped)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
2	Aluminum Fabricator certificate (signed and stamped)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
3	Glass Data Sheet	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
4	Glass area calculation schedule/Shop drawings	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
5	Glass sample photo with project and manufacturer details sticker stamped by E.O.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

**Remarks:**

We Engineering Office/Authorized Engineer undersigned hereby declare that the glass approval form is complete with all details and attach supporting documents and drawings as required, and found it complied with EWA's Thermal Insulation Regulation

**Engineering Office/Authorized Engineer:**

Name: \_\_\_\_\_

Sign: \_\_\_\_\_ Phone: \_\_\_\_\_

Date: \_\_\_\_\_ ((Stamp))

**EWA's Approval:**

Reviewed by: \_\_\_\_\_

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

**THERMAL INSULATION IMPLEMENTATION**  
**CALCULATION SHEET FOR GLASS AREA**

Building Permit No.: \_\_\_\_\_ Application no.: \_\_\_\_\_ Engineering office: \_\_\_\_\_  
Owner name: \_\_\_\_\_ Building type: \_\_\_\_\_ Build-up area: \_\_\_\_\_ No. of Floors: \_\_\_\_\_

Type Of External Glazed Window/Glazed Door/Curtain Wall/Sky Light	Size of window/door/curtain wall/sky light (WxH)	Front Elevation		Rear Elevation		Left Elevation		Right Elevation		Total glass area of all elevations (M2)
		Qty (Nf)	Total glass area (M2) (WxHxNf)	Qty (Nr)	Total glass area (M2) (WxHxNr)	Qty (NL)	Total glass area (M2) (WxHxNL)	Qty (Nri)	Total glass area (M2) (WxHxNri)	
<b>Total glass area in each elevation (Ga)</b>										
<b>Surface area of each elevation (Sa)</b>										
<b>Percentage of glass (Ga/Sa)X100</b>										

**We Engineering Office/Authorized Engineer undersigned hereby declare that the calculation sheet of glass area is complete with all details, and found it complied with EWA's Thermal Insulation Regulation**

<b>Engineering Office/Authorized Engineer:</b> Name: _____ Phone: _____ Sign: _____ Date: _____ ((Stamp))	<b>EWA's Approval:</b> Reviewed by: _____ Sign: _____ Date: _____
---	---

## CALCULATION SHEET FOR EXTERNAL SURFACE AREAS INCLUDING GLASSES

Floor Designation	Front		Rear		Left		Right	
	LxHxN*	Area (M2)	LxHxN*	Area (M2)	LxHxN*	Area (M2)	LxHxN*	Area (M2)
Ground Floor								
Mezzanine Floor								
Typical Floors								
Roof Deck								
Pent House								
Other Floors								
<b>Total area</b>								

**We Engineering Office/Authorized Engineer undersigned hereby declare that the calculation sheet of glass area is complete with all details, and found it complied with EWA's Thermal Insulation Regulation**

**Engineering Office/Authorized Engineer:**

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Sign: \_\_\_\_\_ Date: \_\_\_\_\_ ((Stamp))

**EWA's Approval:**

Reviewed by: \_\_\_\_\_

Sign: \_\_\_\_\_ Date: \_\_\_\_\_

### Notes:

1. Indicate type of window/door/curtain wall/sky light as Wn/Dn/CWn/SKLn respectively. n is variable as per schedule of window, door, curtain wall and sky light. Use additional sheets if required.
2. For windows facing light wells, submit separate calculation sheet.
3. Exclude basement, car park levels & parapet in calculation of external surface areas.
4. use the abbreviation below as follows:  
L=Length (Meters) H=Hight (Meters)  
N\* = No. of typical floors and is applicable for calculating total surface area of typical floors, for remaining floors N\*=1.

## Glass Selection Details

Building Permit No.:	Application no.:	Engineering office:
Owner name:	Building type:	Build-up area: No. of Floors:

Location	Windows & doors	Curtain Wall	Shopfront & Showroom	Sky light	Total Glass area (m <sup>2</sup> )	Total Surface Area (m <sup>2</sup> )	Glass %
Glass area (m <sup>2</sup> )							

Location	Glass Make / Description / Coating Surface #		Thickness (mm)			Summer U-value (W/m <sup>2</sup> °C)	Shading Coefficient (SC)	Light Transmittance %
	Outer Glass	Inner Glass	Outer Glass	Air Space	Inner Glass			
Windows & doors								
Curtain Wall								
Shopfront & Showroom								
Sky light								

We Engineering Office/Authorized Engineer undersigned hereby declare all information in this document are correct, and found it complied with EWA's Thermal Insulation Regulation	
<b>Engineering Office/Authorized Engineer:</b>  Name: _____ Phone: _____  Sign: _____ Date: _____ ((Stamp))	<b>EWA's Approval:</b>  Reviewed by: _____  Sign: _____ Date: _____



## Thermal Insulation Implementation Inspection Form

This form should be filled for each floor/roof/glass when intending to start the installation of thermal insulation and send it at least ten days before its completion.

<b>Building Permit No.:</b> _____	<b>Application no.:</b> _____		
<b>Engineering office:</b> _____	<b>Owner name:</b> _____		
<b>Building type:</b> _____	<b>Build-up area:</b> _____	<b>No. of Floors:</b> _____	
<b>Building No.:</b> _____	<b>Road No.:</b> _____	<b>Block No.:</b> _____	<b>Area:</b> _____

<b>Thermal Insulation installed as per implementation forms:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No
---

No.	Description	E.O. Remarks (Type, Thickness, ..etc)	EWA Remarks
1	Wall Insulation		
2	Wall of light well/shaft/void		
3	Columns / Beams Insulation		
4	Concrete / Shear Wall		
5	Roof Insulation		
6	Roof Coating		
7	Floor/Ceiling Insulation		
8	Glass		
9	Spandrel area of curtain wall		

<b>Remarks:</b>
-----------------

<b>Attached Documents:</b>
<input type="checkbox"/> Building permit <input type="checkbox"/> Address card for entrance <input type="checkbox"/> Drawings for the inspected area
<input type="checkbox"/> Approved Implementation forms for the inspected area <input type="checkbox"/> Pictures for the inspected area

**We Engineering Office/Authorized Engineer undersigned hereby declare that we had inspected the Thermal Insulation for the above, and found it complied with EWA's Thermal Insulation Regulation**

<b>Engineering Office/Authorized Engineer</b>	<b>Electricity &amp; Water Conservation Engineer:</b>
<b>Name:</b> _____	<b>Name:</b> _____
<b>Sign:</b> _____ <b>Phone:</b> _____	<b>Sign:</b> _____
<b>Date:</b> _____ ((Stamp))	<b>Date:</b> _____





## Thermal Insulation Implementation Modification Form

E.O. should submit TII Modification Form & obtain approval before incorporating any changes on the site

<b>Building Permit No.:</b> _____	<b>Application no.:</b> _____		
<b>Engineering office:</b> _____	<b>Owner name:</b> _____		
<b>Building type:</b> _____	<b>Build-up area:</b> _____	<b>No. of Floors:</b> _____	
<b>Building No.:</b> _____	<b>Road No.:</b> _____	<b>Block No.:</b> _____	<b>Area:</b> _____

Tick the appropriate box for the proposed change/s:

No	Change of	Required Documents	Remarks
1	<input type="checkbox"/> <b>Owner</b>	<input type="checkbox"/> Supporting document for transfer of ownership <input type="checkbox"/> Tel No.& e-mail for the new owner <input type="checkbox"/> Copy of CPR/CR	
2	<input type="checkbox"/> <b>Engineering Office</b>	<input type="checkbox"/> Form of changing Engineering Office <input type="checkbox"/> No objection letter from previous E.O.	
3	<input type="checkbox"/> <b>Roof insulation/coating materials</b>	<input type="checkbox"/> Approval of the new materials <input type="checkbox"/> New materials TII forms <input type="checkbox"/> Roof cross section <input type="checkbox"/> Benayat TII data	
4	<input type="checkbox"/> <b>Wall insulation materials</b>	<input type="checkbox"/> Approval of the new materials <input type="checkbox"/> New materials TII forms <input type="checkbox"/> Wall cross section <input type="checkbox"/> Benayat TII data	
5	<input type="checkbox"/> <b>Glass type</b>	<input type="checkbox"/> Manufacturer's performance data sheet <input type="checkbox"/> Glass selection in accordance with TI regulation <input type="checkbox"/> Shopfront and showrooms <input type="checkbox"/> Skylight & Roof opening <input type="checkbox"/> Benayat TII data	
6	<input type="checkbox"/> <b>Glass area</b>	<input type="checkbox"/> Glass selection in accordance with TI regulation <input type="checkbox"/> Architecture / Elevations drawings <input type="checkbox"/> Schedule of doors & windows <input type="checkbox"/> Calculation sheets for glass/external surface <input type="checkbox"/> Manufacturer's performance data sheet	

**Remarks:**

**We Engineering Office/Authorized Engineer undersigned hereby declare that the modification form is complete with all details and attach supporting documents and drawings as required, and found it complied with EWA's Thermal Insulation Regulation**

**Engineering Office/Authorized Engineer:**

**Name:** \_\_\_\_\_

**Sign:** \_\_\_\_\_

**Date:** \_\_\_\_\_

((Stamp))

**EWA's Approval:**

**Reviewed by:** \_\_\_\_\_

**Sign:** \_\_\_\_\_

**Date:** \_\_\_\_\_



### Roof Coating Form

**Building Permit No.:** \_\_\_\_\_ **Application no.:** \_\_\_\_\_  
**Engineering office:** \_\_\_\_\_ **Owner name:** \_\_\_\_\_  
**Building type:** \_\_\_\_\_ **Build-up area:** \_\_\_\_\_ **No. of Floors:** \_\_\_\_\_  
**Building No.:** \_\_\_\_\_ **Road No.:** \_\_\_\_\_ **Block No.:** \_\_\_\_\_ **Area:** \_\_\_\_\_

#### Roof Coating:

Product Name (approved by Ewa): \_\_\_\_\_

*Note: Roofs containing photovoltaic panels may be exempted from roof coating.*

#### Remarks:

**We Engineering Office/Authorized Engineer undersigned hereby declare that all information provided in this form is complete with all details and attach supporting document as required, and found it complied with EWA's Thermal Insulation Regulation**

#### Engineering Office/Authorized Engineer:

**Name:** \_\_\_\_\_

**Sign:** \_\_\_\_\_

**Date:** \_\_\_\_\_

((Stamp))

#### Ewa's Approval:

**Reviewed by:** \_\_\_\_\_

**Sign:** \_\_\_\_\_

**Date:** \_\_\_\_\_



### Thermal Insulation Implementation Forms

<b>Building Permit No.:</b> _____	<b>Application no.:</b> _____		
<b>Engineering office:</b> _____	<b>Owner name:</b> _____		
<b>Building type:</b> _____	<b>Build-up area:</b> _____	<b>No. of Floors:</b> _____	
<b>Building No.:</b> _____	<b>Road No.:</b> _____	<b>Block No.:</b> _____	<b>Area:</b> _____

No.	Description	Attachment of Uv Calculation Form			Remarks
1	<b>Wall Insulation</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
2	Wall of light well/shaft/void	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
3	Columns / Beams Insulation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
4	Concrete / Shear Wall	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
5	<b>Roof Insulation</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
6	Floor/Ceiling Insulation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
7	<b>Glass</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
8	Spandrel area of curtain wall	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	

**Remarks:**

**Attached documents:**

- Building permit     Owner undertaking     Architecture/Structure & cross section drawings  
 Supported documents for TI materials     Thermal Transmittance Calculation Form

**We Engineering Office/Authorized Engineer undersigned hereby declare that TII form is complete with all details and attach supporting documents and drawings as required, and found it complied with EWA's Thermal Insulation Regulation**

**Engineering Office/Authorized Engineer:**

**Name:** \_\_\_\_\_

**Sign:** \_\_\_\_\_

**Date:** \_\_\_\_\_

((Stamp))

**Ewa's Approval:**

**Reviewed by:** \_\_\_\_\_

**Sign:** \_\_\_\_\_

**Date:** \_\_\_\_\_



## Thermal Transmittance (Uv) Calculation Form

Application no.: \_\_\_\_\_ Engineering office: \_\_\_\_\_

### Thermal Transmittance (U-value) for:

- Roofs     floors/ceilings     Concrete/ Shear Walls     Spandrel Area of Curtain Wall  
 Walls     External Beams     External Columns     light wells/shafts/voids

Sr. No.	Description of materials used	Density (kg/m <sup>3</sup> )	Thickness m	r (m.°C/W)	R (m <sup>2</sup> .°C/W)	Notes
1-						
2-						
3-						
4-						
5-						
6-						
7-						
8-						
9-						
10-						
Total thermal resistances R <sub>T</sub> (m <sup>2</sup> .°C/W):						
Total thermal transmittance U-Value (W/m <sup>2</sup> .°C):						

Remarks:

We Engineering Office/Authorized Engineer undersigned hereby declare that TII form is complete with all details and attach supporting documents and drawings as required, and found it complied with EWA's Thermal Insulation Regulation

Engineering Office/Authorized Engineer

Name: \_\_\_\_\_

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

((Stamp))

التاريخ:

## تعهد بتطبيق العزل الحراري على المبنى

اتعهد انا المالك للمبنى / العقار رقم: -----، الواقع

تحت عنوان: -----

بتطبيق العزل الحراري في المبنى المذكور أعلاه، وذلك لجميع الجدران والأعمدة والجسور والأسقف والزجاج، وكذلك طلاء الاسطح لتصبح عاكسة لأشعة الشمس حسب المواصفات المعتمدة والمصادق عليها من قبل وحدة العزل الحراري في هيئة الكهرباء و الماء.

كما وسأقوم بالتنسيق مع المكتب الإستشاري:----- المشرف على المبنى، وذلك لمتابعة مراحل العزل الحراري.

وأتعهد بالتنسيق مع المكتب الاستشاري للكشف والمعاينة والموافقة على العزل الحراري للمبنى قبل المسح والصبغة وتركيب الزجاج العازل، وأقر بتحمل جميع التبعات والإجراءات المتخذة هيئة الكهرباء والماء في حال المخالفة واتحمل كافة المسؤوليات القانونية والمادية، بما في ذلك عدم توصيل خدمة الكهرباء للمبنى.

اسم المتعهد (مالك المشروع):

الرقم الشخصي:

التوقيع:

توقيع وختم المكتب الهندسي: