

Texas Department of Licensing and Regulation
INDUSTRIALIZED HOUSING AND BUILDINGS

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Texas Building Energy Compliance Form for Industrialized Housing
2003 International Energy Conservation Code and the Energy Efficiency Chapter of the 2003 International Residential Code

Texas law, Chapter 388, Subtitle C, Title 5, Health and Safety Code, requires new housing construction to comply with the Texas Building Energy Efficiency Standards, which uses the energy efficiency chapter of the International Residential Code (IRC) and the International Energy Conservation Code (IECC) as they existed on May 1, 2001. This form can be used to document the compliance of industrialized housing constructed under the Texas Occupations Code, Chapter 1202, Industrialized Housing and Buildings, which falls outside of the jurisdiction of a municipality.

Manufacturer's Name and Texas IHM Registration #: _____

Project Name or Model #: _____

City, Zip, & County of Installation or Climate Zone(s) for which designed: _____

Module serial #'s: _____ Decal #'s: _____

This building is (select only one of the following options):

- 1. Self-certified by the manufacturer to meet or exceed minimum requirements. Complete **Part A, Self-Certification Form**; or
- 2. Inspected by a code-certified inspector and determined to meet or exceed the minimum requirements. Complete **Part B, Inspection Information**, below and attach inspection documents; or
- 3. Certified by an accredited energy efficiency program. Complete **Part C, Certification Information**, below and attach copy of certification documents.

Part A. Self-Certification Form

Complete the attached self-certification checklist or attach copy of REScheck checklist

Self-Certification Checklist attached or REScheck Checklist attached

Manufacturer's Self-Certification

I, _____, certify that all of the above information is correct and that the construction
Manufacturer's Compliance Control Manager – please print
described meets or exceeds the Texas Building Energy Efficiency Standards.

Signature (Compliance Control Manager)

Date

Part B. Inspection Information - Attach a signed and dated copy of the inspection checklist used by inspector

Inspector name/address: _____

Inspector certified as Residential Energy Inspector by _____

Certification number: _____ Signature: _____ Date: _____

Part C. Certification Information - Attach copy of certificate and rating checklist

Name of Certifying Agency: _____

Program Sponsor/Agency: _____

Project Rating or Building Energy Rating System Score: _____

Is rating based on performance testing of this project? Yes No

Rater name/address: _____

Rater certified by: _____ Certification number: _____

Rater Signature: _____ Date: _____

Part A. Self-Certification Inspection Checklist

Check option chosen for part A on page 1 of form and attach either REScheck checklist or the following checklist. Unless otherwise noted, references on this checklist are to the 2003 IRC.

Compliance Features	Maximum Value	Minimum Value	Installed Value	Exceeds	Meets
1. Insulation (R-values and U-factors labeled as certified) Requirements					
Wall Insulation				<input type="checkbox"/>	<input type="checkbox"/>
Cavity				<input type="checkbox"/>	<input type="checkbox"/>
Continuous				<input type="checkbox"/>	<input type="checkbox"/>
Floor insulation (over unconditioned spaces or crawl spaces)				<input type="checkbox"/>	<input type="checkbox"/>
Roof assembly insulation				<input type="checkbox"/>	<input type="checkbox"/>
Duct insulation – reference N1103.2 and IECC503.3.3.3		R-5, R-8		<input type="checkbox"/>	<input type="checkbox"/>
2. Windows and Doors Requirements					
Glazing % of total exterior wall area = _____ % (<15% for detached one- & two-family dwellings, <25% for townhouses) If glazing % of total exterior wall area >=15% (one- & two-family dwellings) or >=25% (for townhouses) – compliance with 2003 International Energy Conservation Code (IECC) required – reference N1101.2					
Window and glazed doors U-factor (labeled if < default – reference N1101.3.2.1 and IECC 102.5.2)	See Tables	N/A		<input type="checkbox"/>	<input type="checkbox"/>
Window and glazed doors SHGC (labeled if < default – reference N1101.3.2.1 and IECC 102.5.2)	See Tables (0.4 - see note 1)	N/A		<input type="checkbox"/>	<input type="checkbox"/>
Exterior doors (opaque) U-factor – N1102.1.3 and IECC 502.2.4.6	.35	N/A		<input type="checkbox"/>	<input type="checkbox"/>
3. Envelope Requirements					
All joints and penetrations are caulked, gasketed, weatherstripped, or otherwise sealed in an approved manner – reference N1102.1.10 and IECC 502.1.4.2					<input type="checkbox"/>
Duct connections properly sealed with mastic or UL 181 labeled tape (unlisted duct tape not allowed) – reference M1601.3.1 and IECC 503.3.3.4.3					<input type="checkbox"/>
Recessed lighting fixtures gasketed and IC rated – reference N1102.1.11 and IECC 502.1.3					<input type="checkbox"/>
Windows and doors certified and labeled as meeting leakage requirements – reference N1101.3.2.2, IECC 502.1.4, and IECC Table 502.1.4.1					<input type="checkbox"/>
Vapor retarders installed in all nonvented framed areas in ceilings, walls, and floors on warm-in-winter side of the insulation (vapor retarders not required in zones 1 through 7) – reference R318.1, N1101.2, and IECC 502.1.1					<input type="checkbox"/>
4. Equipment Requirements (Equipment efficiency ratings must meet or exceed current NAECA standards)					
Water heater – Reference N1104.1, Table N1104.1, IECC 504.2, and IECC Table 504.2.1					<input type="checkbox"/>
Heat Pump – Reference N1103.1, Table N1103.1, IECC 503.2, and IECC Table 502.2.5					<input type="checkbox"/>
Air Conditioner – Reference N1103.1, Table N1103.1, IECC 503.2, and IECC Table 502.2.5					<input type="checkbox"/>
Furnace – Reference N1103.1, Table N1103.1, IECC 503.2, and IECC Table 502.2.5					<input type="checkbox"/>
5. Construction Requirements					
Load calculations and equipment sized per ACCA Manual J-1987 or 2000 ASHRAE Fundamentals – reference M1401.2 and IECC 503.3					<input type="checkbox"/>
Minimum one thermostat per system – reference N1103.2 and IECC 503.2					<input type="checkbox"/>
HVAC refrigerant lines insulated – reference N1103.5, Table 1103.5, IECC 503.3.3.1, and IECC Table 503.3.3.1					<input type="checkbox"/>
Insulate all circulating hot water pipes – reference IECC 504.5					<input type="checkbox"/>
Electric meter for each unit in duplex or multi-family units – reference IECC 505.1					<input type="checkbox"/>
Showerhead flow rate of 2.5 gpm or less – reference P2903.2, Table P2903.2, and IECC 504.6.1					<input type="checkbox"/>
Water heater has integral heat trap or provided with heat trap – reference IECC 504.7					<input type="checkbox"/>

Requirements Description Notes: The following provides a more detailed explanation of some of the requirements listed in the above checklist.

- The area-weighted-average solar heat gain coefficient (SHGC) for glazed fenestration installed in locations with 3,500 or fewer heating degree days shall not exceed 0.40 – reference N1102.2 and IECC 502.1.5
- NFRC label with U-factor and SHGC required on fenestration products where the design values are less than defaults in Tables 102.5.2(1), 102.5.2(2), and 102.5.2(3) – reference N1101.3.2 and IECC 102.5.2.
- A label applied to the window or door assembly by the manufacturer of the assembly is required to verify the air leakage requirements of Table 502.1.4.1 – reference N1101.3.2.2, IECC 502.1.4, and IECC Table 502.1.4.1.
- Insulation R-values, SHGC, and glazing U-factors must be clearly marked on the building plans or specifications – reference IECC 104.2.
- For blown or sprayed insulation, the initial installed thickness, settled thickness, coverage area, and number of bags used must be clearly posted. Thickness markers must be placed at least every 300 square feet – reference N1101.3.1 and IECC 102.5.1.

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6. All insulation requirements assume the insulation is installed at its standard thickness. If insulation is compressed, the R-value is reduced and the building may not meet the requirements – reference N1101.3 and IECC 102.2.
7. Recessed lights must be 1) Type IC rated, or 2) installed inside an appropriate air-tight assembly with a 0.5” clearance from combustible materials. If non-IC rated, the fixture must be installed with a 3” clearance from insulation – reference N1102.1.11 and IECC 502.1.3.
8. Design heating and cooling loads and equipment size for the residence must be determined using procedures equivalent to those in the 2001 ASHRAE Handbook of Fundamentals or in accordance with ACCA Manual J-1987. – reference M1401.3 and IECC 503.3.
9. Each dwelling unit shall be considered a zone and be provided with its own thermostat. Each heating or cooling system serving a single zone must have its own thermostat – reference N1103.2 and IECC 503.3.2.1.
10. Thermostats controlling heating shall be capable of being set down to 55 degrees F or lower. Thermostats controlling cooling shall be capable of being set up to 85 degrees F or higher – reference IECC 503.3.2.2
11. Thermostats controlling both heating and cooling must be capable of maintaining a 5 degree F deadband (a range of temperature where no heating or cooling is provided). Exception: Deadband capability is not required if the thermostat does not have automatic changeover capability between heating and cooling – reference IECC 503.3.2.2.
12. Air ducts must be insulated to the following levels. a) Supply and return air ducts and plenums for conditioned air located in unconditioned spaces (spaces neither heated nor cooled) must be insulated with a minimum of R-5. Unconditioned spaces include attics, crawl spaces, unheated basements, and unheated garages. b) Supply and return air ducts and plenums must be insulated to a minimum of R-8 when located outside the building. c) When ducts or plenums are located within exterior components (e.g., floors or roofs), minimum R-8 insulation is required only between the duct and the building exterior – reference N1103.3.
Exception: Duct insulation is not required on ducts within equipment.
13. All joints, longitudinal and transverse seams, and connections in ductwork must be securely sealed using welds; mechanical fasteners with seals, gaskets, or mastics; mesh and mastic sealing systems; or tapes. Tapes and mastics must be listed and labeled in accordance with UL 181A or UL 181B. Unlisted duct tape is not permitted – reference M1601.3 and IECC 503.3.3.4.3.
14. Ductwork shall be constructed and erected in accordance with Chapter 16 of the IRC – reference N1103.3.
15. Water heaters with vertical pipe risers shall have a heat trap on both the inlet and outlet unless the water heater has an integral heat trap or is part of a circulating system – reference IECC 504.7.
16. The HVAC system design shall provide a means for balancing air and water systems – reference IECC 503.3.3.7.
17. HVAC piping conveying fluids above 105° F or chilled fluid below 55° F must be insulated in accordance with Table N1103.5 or IECC Table 503.3.3.1 – reference N1103.5 and IECC 503.3.3.1.
18. Insulate piping for circulating hot water systems in accordance with Table 504.5 – reference IECC 504.5.