



E-MAKING ORDER
(RCW 34.05.360)

CR-103 (4/25/96)

Agency: State Building Code Council

- Permanent Rule
- Emergency Rule
- Expedited Repeal

(1) Date of adoption: December 4, 1996

(2) Purpose: To exempt unstaffed equipment shelters used solely for personal wireless service facilities from the building envelope insulation requirements of the Washington State Energy Code (WAC 51-11) in response to ESHB 2828.

(3) Citation of existing rules affected by this order:

Repealed:

Amended: WAC 51-11, Washington State Energy Code, Sections 1210 and 1301

Suspended:

(4) Statutory authority for adoption: RCW 19.27.074 and RCW 19.27A.020 and 19.27A.025

Other authority:

PERMANENT RULE ONLY

Adopted under notice filed as WSR 96-21-105 on October 21, 1996 (date).

Describe any changes other than editing from proposed to adopted version: A correction was made in Exception 3 of Section 1301 to update an occupancy classification that was changed in the Uniform Building Code in 1994 but not reflected in this code.

EMERGENCY RULE ONLY

Under RCW 34.05.350 the agency for good cause finds:

- (a) That immediate adoption, amendment, or repeal of a rule is necessary for the preservation of the public health, safety, or general welfare, and that observing the time requirements of notice and opportunity to comment upon adoption of a permanent rule would be contrary to the public interest.
- (b) That state or federal law or federal rule or a federal deadline for state receipt of federal funds requires immediate adoption of a rule.

Reasons for this finding:

EXPEDITED REPEAL ONLY

Under Preproposal Statement of Inquiry filed as WSR _____ on _____ (date).

(5.3) Any other findings required by other provisions of law as precondition to adoption or effectiveness of rule?

- Yes
 - No
- If Yes, explain:

(6) Effective date of rule:

Permanent Rules
or Expedited Repeal

- 31 days after filing
- Other (specify) 7/1/97*

*(If less than 31 days after filing, specific finding in 5.3 under RCW 34.05.380(3) is required)

Emergency Rules

- Immediately
- Later (specify) _____

CODE REVISER USE ONLY

CODE REVISER'S OFFICE
STATE OF WASHINGTON
FILED

JAN 07 1997

TIME 8:40
WSR 97-03-017

NAME (TYPE OR PRINT)

James R. Beaver

SIGNATURE

TITLE
Chair

DATE
12/04/96

**Note: If any category is left blank, it will be calculated as zero.
No descriptive text.**

**Count by whole WAC sections only, from the WAC number through the history note.
A section may be counted in more than one category.**

The number of sections adopted in order to comply with:

| | | | |
|---|-----------|---------------|----------------|
| Federal statute: | New _____ | Amended _____ | Repealed _____ |
| Federal rules or standards: | New _____ | Amended _____ | Repealed _____ |
| Recently enacted state statutes: | New _____ | Amended _____ | Repealed _____ |

The number of sections adopted at the request of a nongovernmental entity:

New _____ Amended _____ Repealed _____

The number of sections adopted on the agency's own initiative:

New _____ Amended _____ Repealed _____

The number of sections adopted in order to clarify, streamline, or reform agency procedures:

New _____ Amended _____ Repealed _____

The number of sections adopted using:

| | | | |
|---------------------------------------|-----------|----------------------------|----------------|
| Negotiated rule making: | New _____ | Amended _____ ² | Repealed _____ |
| Pilot rule making: | New _____ | Amended _____ | Repealed _____ |
| Other alternative rule making: | New _____ | Amended _____ | Repealed _____ |

AMENDATORY SECTION (Amending WSR 93-21-052, filed 10/18/93, effective 4/1/94)

WAC 51-11-1210 Application of terms. For the purposes of this Code, certain abbreviations, terms, phrases, words and their derivatives, shall be as set forth in this chapter. Where terms are not defined, they shall have their ordinary accepted meanings within the context with which they are used. In the event there is a question about the definition of a term, the definitions for terms in the Codes enumerated in RCW 19.27.031 and the edition of Webster's dictionary referenced therein shall be considered as the sources for providing ordinarily accepted meanings.

AAMA: American Architectural Manufacturers Association.

ADDITION: See the Washington State Building Code.

ADVANCED FRAMED CEILING: Advanced framing assumes full and even depth of insulation extending to the outside edge of exterior walls. (See **Standard Framing** and Section 2007.2 of this Code.)

ADVANCED FRAMED WALLS: Studs framed on twenty-four inch centers with double top plate and single bottom plate. Corners use two studs or other means of fully insulating corners, and one stud is used to support each header. Headers consist of double 2X material with R-10 insulation between the header and exterior sheathing. Interior partition wall/exterior wall intersections are fully insulated in the exterior wall. (See **Standard Framing** and Section 2005.2 of this Code.)

AFUE - ANNUAL FUEL UTILIZATION EFFICIENCY: Unlike steady state conditions, this rating is based on average usage including on and off cycling as set out in the standardized Department of Energy Test Procedures.

AIR CONDITIONING, COMFORT: The process of treating air to control simultaneously its temperature, humidity, cleanliness and distribution to meet requirements of the conditioned space.

ARI: Air Conditioning and Refrigeration Institute.

ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.

ASTM: American Society for Testing and Materials.

AUTOMATIC: Self-acting, operating by its own mechanism when actuated by some impersonal influence, as for example, a change in current strength, pressure, temperature or mechanical configuration. (See **Manual**.)

BELOW GRADE WALLS: Walls or the portion of walls which are entirely below the finished grade or which extend two feet or less above the finish grade.

BOILER CAPACITY: The rate of heat output in Btu/h measured at the boiler outlet, at the design inlet and outlet conditions and rated fuel/energy input.

BUILDING ENVELOPE: The elements of a building which enclose conditioned spaces through which thermal energy may be transferred to or from the exterior, or to or from unconditioned spaces, or to or from semi-heated spaces, or to or from spaces exempted by the provisions of Section 1301.

BUILDING, EXISTING: See the Washington State Building Code.

BUILDING OFFICIAL: The official authorized to act in behalf of a jurisdiction code enforcement agency or its authorized representative.

BUILDING PROJECT: A building or group of buildings, including on-site energy conversion or electric-generating facilities, which utilize a single submittal for a construction permit or are within the boundary of a contiguous area under one ownership.

CONDITIONED FLOOR AREA: (See **Gross Conditioned Floor Area.**)

CONDITIONED SPACE: A cooled space, heated space (fully heated), heated space (semi-heated), or indirectly conditioned space.

COOLED SPACE: An enclosed space within a building that is cooled by a cooling system whose sensible capacity

- a. exceeds 5 Btu/(h•ft³), or
- b. is capable of maintaining space dry bulb temperature of 90 degrees F or less at design cooling conditions.

COP - COEFFICIENT OF PERFORMANCE: The ratio of the rate of net heat output (heating mode) or heat removal (cooling mode) to the rate of total on-site energy input to the heat pump, expressed in consistent units and under designated rating conditions. (See **Net Heat Output, Net Heat Removal, Total On-Site Energy Input.**)

DAYLIGHTED ZONE:

- a. Under overhead glazing: The area under overhead glazing whose horizontal dimension, in each direction, is equal to the overhead glazing dimension in that direction plus either the floor to ceiling height or the dimension to a ceiling height opaque partition, or one-half the distance to adjacent overhead or vertical glazing, whichever is least.
- b. At vertical glazing: The area adjacent to vertical glazing which receives daylighting from the glazing. For purposes of this definition and unless more detailed daylighting analysis is provided, the daylighting zone depth is assumed to extend into the space a distance of 15 feet or to the nearest ceiling height opaque partition, whichever is less. The daylighting zone width is assumed to be the width of the window plus either two feet on each side (the distance to an opaque partition) or one-half the distance to adjacent overhead or vertical glazing, whichever is least.

DAYLIGHT SENSING CONTROL (DS): A device that automatically regulates the power input to electric lighting near the glazing to maintain the desired workplace illumination, thus taking advantage of direct or indirect sunlight.

DEADBAND: The temperature range in which no heating or cooling is used.

DESIGN COOLING CONDITIONS: The cooling outdoor design temperature from the 0.5 percent column for summer from the Puget Sound Chapter of ASHRAE publication "Recommended Outdoor Design Temperatures, Washington State, ASHRAE."

DESIGN HEATING CONDITIONS: The heating outdoor design temperature from the 0.6 percent column for winter from the Puget Sound Chapter of ASHRAE publication "Recommended Outdoor Design Temperatures, Washington State, ASHRAE."

DOOR AREA: Total area of door measured using the rough opening and including the door and frame.

DOOR: All operable opening areas, which are not glazing, in the building envelope including swinging and roll-up doors, fire doors, smoke vents and access hatches.

DWELLING UNIT: See the Washington State Building Code.

EER - ENERGY EFFICIENCY RATIO: The ratio of net equipment cooling capacity in Btu/h to total rate of electric input in watts under designated operating conditions.

ECONOMIZER, AIR: A ducting arrangement and automatic control system that allows a cooling supply fan system to supply outside air to reduce or eliminate the need for mechanical refrigeration during mild or cold weather.

ECONOMIZER, WATER: A system by which the supply air of a cooling system is cooled directly, indirectly, or both, by evaporation of water or by other appropriate fluid in order to reduce or eliminate the need for mechanical refrigeration.

EFFICIENCY, HVAC SYSTEM: The ratio of useful energy (at the point of use) to the energy input for a designated time period, expressed in percent.

EMISSIVITY: The ability to absorb infrared radiation. A low emissivity implies a higher reflectance of infrared radiation.

ENERGY: The capacity for doing work; taking a number of forms which may be transformed from one into another, such as thermal (heat), mechanical (work), electrical and chemical; in customary units, measured in kilowatt-hours (Kwh) or British thermal units (Btu). (See **New energy.**)

ENERGY, RECOVERED: (See **Recovered energy.**)

EXTERIOR ENVELOPE: (See **Building envelope.**)

FACADE AREA: Vertical projected area including nonhorizontal roof area, overhangs, cornices, etc. measured in elevation in a vertical plane parallel to the plane of the building face.

FLOOR OVER UNCONDITIONED SPACE: A floor which separates a conditioned space from an unconditioned space which is buffered from exterior ambient conditions including vented crawl spaces and unconditioned basements or other similar spaces, or exposed to exterior ambient conditions including open parking garages and enclosed garages which are mechanically ventilated.

F-FACTOR: The perimeter heat loss factor expressed in Btu/h•ft °F.

F-VALUE: (See **F-Factor.**)

GLAZING: All areas, including the frames, in the shell of a conditioned space that let in natural light including windows, clerestories, skylights, sliding or swinging glass doors and glass block walls.

GLAZING AREA: Total area of the glazing measured using the rough opening, and including the glazing, sash, and frame. For doors where the daylight opening area is less than fifty percent of the door area, the glazing area is the daylight opening area. For all other doors, the glazing area is the door area.

GROSS CONDITIONED FLOOR AREA: The horizontal projection of that portion of interior space which is contained within exterior walls and which is conditioned directly or indirectly by an energy-using system, and which has an average height of five feet or greater, measured from the exterior faces.

GROSS EXTERIOR WALL AREA: The normal projection of the building envelope wall area bounding interior space which is conditioned by an energy-using system; includes opaque wall, vertical glazing and door areas. The gross area of walls consists of all opaque wall areas, including foundation walls, between floor spandrels, peripheral edges of floors, vertical glazing areas, and door areas, where such surfaces are exposed to exterior ambient conditions and enclose a conditioned space including interstitial areas between two such spaces. (See **Below Grade Wall**.)

GROSS FLOOR AREA: The sum of the areas of the several floors of the building, including basements, cellars, mezzanine and intermediate floored tiers and penthouses of headroom height, measured from the exterior faces of exterior walls or from the center line of walls separating buildings, but excluding: Covered walkways, open roofed-over areas, porches and similar spaces, pipe trenches, exterior terraces or steps, chimneys, roof overhangs and similar features.

GROSS ROOF/CEILING AREA: A roof/ceiling assembly shall be considered as all components of the roof/ceiling envelope through which heat flows, thus creating a building transmission heat loss or gain, where such assembly is exposed to exterior ambient conditions and encloses a conditioned space. The assembly does not include those components that are separated from a heated and/or cooled space by a vented airspace. The gross area of a roof/ceiling assembly consists of the total interior surface of such assembly, including overhead glazing.

GUEST ROOM: See the Washington State Building Code.

HEAT: The form of energy that is transferred by virtue of a temperature difference.

HEAT STORAGE CAPACITY: The physical property of materials (mass) located inside the building envelope to absorb, store, and release heat.

HEATED SPACE (FULLY HEATED): An enclosed space within a building, including adjacent connected spaces separated by an un-insulated component (e.g., basements, utility rooms, garages, corridors), which is heated by a heating system whose output capacity is

- a. capable of maintaining a space dry-bulb temperature of 45 degrees F or greater at design heating conditions; or

- b. 8 Btu/(h·ft²) or greater in Climate Zone 1 and 12 Btu/(h·ft²) or greater in Climate Zone 2.

HEATED SPACE (SEMI-HEATED): An enclosed space within a building, including adjacent connected spaces separated by an un-insulated component (e.g., basements, utility rooms, garages, corridors), which is heated by a heating system

- a. whose output capacity is 3 Btu/(h·ft²) or greater in Climate Zone 1 and 5 Btu/(h·ft²) or greater in Climate Zone 2; and
- b. is not a Heated Space (Fully Heated).

HSPF - HEATING SEASON PERFORMANCE FACTOR: The total heating output (in Btu) of a heat pump during its normal annual usage period for heating divided by the total (watt hour) electric power input during the same period, as determined by test procedures consistent with the U.S. Department of Energy "Test Procedure for Central Air Conditioners, Including Heat Pumps" published in RS-30. When specified in Btu per watt hour an HSPF of 6.826 is equivalent to a COP of 2.0.

HUMIDISTAT: A regulatory device, actuated by changes in humidity, used for automatic control of relative humidity.

HVAC: Heating, ventilating and air conditioning.

HVAC SYSTEM COMPONENTS: HVAC system components provide, in one or more factory-assembled packages, means for chilling and/or heating water with controlled temperature for delivery to terminal units serving the conditioned spaces of the buildings. Types of HVAC system components include, but are not limited to, water chiller packages, reciprocating condensing units and water source (hydronic) heat pumps. (See **HVAC system equipment.**)

HVAC SYSTEM EFFICIENCY: (See **Efficiency, HVAC system.**)

HVAC SYSTEM EQUIPMENT: HVAC system equipment provides, in one (single package) or more (split system) factory-assembled packages, means for air circulation, air cleaning, air cooling with controlled temperature and dehumidification; and optionally, either alone or in combination with a heating plant, the functions of heating and humidifying. The cooling function may be either electrically or heat operated and the refrigerant condenser may be air, water or evaporatively cooled. Where the equipment is provided in more than one package, the separate packages shall be designed by the manufacturer to be used together. The equipment may provide the heating function as a heat pump or by the use of electric elements. (The word "equipment" used without modifying adjective may, in accordance with common industry usage, apply either to HVAC system equipment or HVAC system components.)

INDIRECTLY CONDITIONED SPACE: An enclosed space within a building that is not a heated or cooled space, whose area weighted heat transfer coefficient to heated or cooled spaces exceeds that to the outdoors or to unconditioned spaces; or through which air from heated or cooled spaces is transferred at a rate exceeding three air changes per hour. Enclosed corridors between conditioned spaces shall be considered as indirectly conditioned space. (See **Heated Space, Cooled Space and Unconditioned Space.**)

INFILTRATION: The uncontrolled inward air leakage through cracks and interstices in any building element and around windows and

doors of a building caused by the pressure effects of wind and/or the effect of differences in the indoor and outdoor air density.

INSULATION Baffle: A rigid material, resistant to wind driven moisture, the purpose of which is to allow air to flow freely into the attic or crawl space and to prevent insulation from blocking the ventilation of these spaces, or the loss of insulation. Example materials for this purpose are sheet metal, or wax impregnated cardboard.

INSULATION POSITION:

- a. **Exterior Insulation Position:** A wall having all or nearly all of its mass exposed to the room air with the insulation on the exterior of the mass.
- b. **Integral Insulation Position:** A wall having mass exposed to both room and outside air, with substantially equal amounts of mass on the inside and outside of the insulation layer.
- c. **Interior Insulation Position:** A wall not meeting either of the above definitions; particularly a wall having most of its mass external to the insulation layer.

IPLV - INTEGRATED PART-LOAD VALUE: A single number figure of merit based on part-load EER or COP expressing part-load efficiency for air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities for the equipment as specified in the Air Conditioning and Refrigeration Institute (ARI) and Cooling Tower Institute (CTI) procedures.

LUMINAIRE: A complete lighting unit consisting of a lamp or lamps together with the parts designed to distribute the light, to position and protect the lamps and to connect the lamps to the electric power supply.

MANUAL: Capable of being operated by personal intervention. (See **Automatic.**)

MICROCELL: A wireless communication facility consisting of an antenna that is either: (a) Four (4) feet in height and with an area of not more than five hundred eighty (580) square inches; or (b) if a tubular antenna, no more than four (4) inches in diameter and no more than six (6) feet in length; and the associated equipment cabinet that is six (6) feet or less in height and no more than forty-eight (48) square feet in floor area.

NFPA: National Fire Protection Association.

NFRC: National Fenestration Rating Council.

NET HEAT OUTPUT: The change in the total heat content of the air entering and leaving the equipment (not including supplementary heat and heat from boilers).

NET HEAT REMOVAL: The total difference in heat content of the air entering and leaving the equipment (without heat) or the difference in total heat content of the water or refrigerant entering and leaving the component.

NEW ENERGY: Energy, other than recovered energy, utilized for the purpose of heating or cooling. (See **Energy.**)

NOMINAL R-VALUE: The thermal resistance of insulation as specified by the manufacturer according to recognized trade and engineering standards.

NONRENEWABLE ENERGY SOURCES: All energy sources that are not renewable energy sources including natural gas, oil, coal, wood, liquified petroleum gas, steam, and any utility-supplied electricity.

NONRESIDENTIAL: All buildings and spaces in the Uniform Building Code (UBC) occupancies other than Group R.

OCCUPANCY: See the Washington State Uniform Building Code.

OCCUPANCY SENSOR: A device that detects occupants within an area, causing any combination of lighting, equipment or appliances to be turned on or shut off.

OPAQUE ENVELOPE AREAS: All exposed areas of a building envelope which enclose conditioned space, except openings for doors, glazing and building service systems.

OPEN BLOWN: Loose fill insulation pneumatically installed in an unconfined attic space.

OUTDOOR AIR (OUTSIDE AIR): Air taken from the outdoors and, therefore, not previously circulated through a building.

OVERHEAD GLAZING: A glazing surface that has a slope of less than sixty degrees from the horizontal plane.

PACKAGED TERMINAL AIR CONDITIONER: A factory-selected combination of heating and cooling components, assemblies or sections intended to serve a room or zone. (For the complete technical definition, see Standard RS-10.)

PERMEANCE (PERM): The ability of a material of specified thickness to transmit moisture in terms of amount of moisture transmitted per unit time for a specified area and differential pressure (grains per hour•ft•inches of HG). Permeance may be measured using ASTM E-96-72 or other approved dry cup method as specified in RS-1.

PERSONAL WIRELESS SERVICE FACILITY: A Wireless Communication Facility (WCF), including a microcell, which is a facility for the transmission and/or reception of radio frequency signals and which may include antennas, equipment shelter or cabinet, transmission cables, a support structure to achieve the necessary elevation, and reception and/or transmission devices or antennas.

POOL COVER: A vapor-retardant cover which lies on or at the surface of the pool.

POWER: In connection with machines, the time rate of doing work. In connection with the transmission of energy of all types, the rate at which energy is transmitted; in customary units, it is measured in watts (W) or British Thermal Units per hour (Btu/h).

PROCESS ENERGY: Energy consumed in support of a manufacturing, industrial, or commercial process other than the maintenance of building comfort or amenities for building occupants.

RADIANT FLOOR: A floor assembly, on grade or below, containing heated pipes, ducts, or electric heating cables that constitute a floor or portion thereof for complete or partial heating of the structure.

READILY ACCESSIBLE: See the Washington State Mechanical Code.

RECOOLING: The removal of heat by sensible cooling of the supply air (directly or indirectly) that has been previously heated above the temperature to which the air is to be supplied to the conditioned space for proper control of the temperature of that space.

RECOVERED ENERGY: Energy utilized which would otherwise be wasted (i.e., not contribute to a desired end use) from an energy utilization system.

REHEAT: The application of sensible heat to supply air that has been previously cooled below the temperature of the conditioned space by either mechanical refrigeration or the introduction of outdoor air to provide cooling.

RENEWABLE ENERGY SOURCES: Renewable energy sources (excluding minerals) derived from: (1) incoming solar radiation, including but not limited to, natural daylighting and photosynthetic processes; (2) energy sources resulting from wind, waves and tides, lake or pond thermal differences; and (3) energy derived from the internal heat of the earth, including nocturnal thermal exchanges.

RESET: Adjustment of the set point of a control instrument to a higher or lower value automatically or manually to conserve energy.

ROOF/CEILING ASSEMBLY: (See **Gross Roof/Ceiling Area.**)

SEER - SEASONAL ENERGY EFFICIENCY RATIO: The total cooling output of an air conditioner during its normal annual usage period, in Btu's, divided by the total electric energy input in watt-hours, during the same period, as determined by 10 CFR, Part 430.

SEMI-HEATED SPACE: Sub-category of **Heated Space.** (See **Heated Space.**)

SEQUENCE: A consecutive series of operations.

SERVICE SYSTEMS: All energy-using systems in a building that are operated to provide services for the occupants or processes housed therein, including HVAC, service water heating, illumination, transportation, cooking or food preparation, laundering or similar functions.

SERVICE WATER HEATING: Supply of hot water for domestic or commercial purposes other than comfort heating.

SHADED: Glazed area which is externally protected from direct solar radiation by use of devices permanently affixed to the structure or by an adjacent building, topographical feature, or vegetation.

SHADING COEFFICIENT: The ratio of solar heat gain occurring through non-opaque portions of the glazing, with or without integral shading devices, to the solar heat gain occurring through an equivalent area of unshaded, 1/8-inch thick, clear, double-strength glass.

Note: Heat gains to be compared under the same conditions. See Chapter 26 of Standard RS-27, listed in Chapter 17 of this Code.

SHALL: Denotes a mandatory Code requirement.

SKYLIGHT: (See **Overhead Glazing.**)

SLAB-BELOW-GRADE: Any portion of a slab floor in contact with the ground which is more than twenty-four inches below the final elevation of the nearest exterior grade.

SLAB-ON-GRADE, EXTERIOR: Any portion of a slab floor in contact with the ground which is less than or equal to twenty-four inches below the final elevation of the nearest exterior grade.

SOLAR ENERGY SOURCE: Source of natural daylighting and of thermal, chemical or electrical energy derived directly from conversion of incident solar radiation.

SOLAR HEAT GAIN COEFFICIENT (SHGC): The ratio of the solar heat gain entering the space through the glazing product to the incident solar radiation. Solar heat gain includes directly transmitted solar heat and absorbed solar radiation which is then reradiated, conducted, or convected into the space.

SPLIT SYSTEM: Any heat pump or air conditioning unit which is provided in more than one assembly requiring refrigeration piping installed in the field.

STANDARD FRAMING: All framing practices not defined as "intermediate" or "advanced" shall be considered standard. (See **Advanced framed ceiling, Advanced framed walls, Intermediate framed wall.**)

SUBSTANTIAL CONTACT: A condition where adjacent building materials are placed in a manner that proximal surfaces are contiguous, being installed and supported as to eliminate voids between materials, without compressing or degrading the thermal performance of either product.

SYSTEM: A combination of central or terminal equipment or components and/or controls, accessories, interconnecting means, and terminal devices by which energy is transformed so as to perform a specific function, such as HVAC, service water heating or illumination.

TAPERING: Installation of a reduced level of ceiling insulation at the eaves, due to reduced clearance.

THERMAL BY-PASS: An area where the envelope surrounding the conditioned space is breached, or where an ineffective application compromises the performance of a thermal or infiltration barrier, increasing the structure's energy consumption by exposing finished surfaces to ambient conditions and additional heat transfer.

THERMAL CONDUCTANCE (C): Time rate of heat flow through a body (frequently per unit area) from one of its bounding surfaces to the other for a unit temperature difference between the two surfaces, under steady conditions (Btu/h \cdot ft \cdot °F).

THERMAL RESISTANCE (R): The reciprocal of thermal conductance (h \cdot ft \cdot °F/Btu).

THERMAL TRANSMITTANCE (U): The coefficient of heat transmission (air to air). It is the time rate of heat flow per unit area and unit temperature difference between the warm side and cold side air films (Btu/h \cdot ft \cdot °F).

THERMAL TRANSMITTANCE, OVERALL (U): The overall (average) heat transmission of a gross area of the exterior building envelope (Btu/hoft²•°F). The U-factor applies to the combined effect of the time rate of heat flows through the various parallel paths, such as glazing, doors and opaque construction areas, comprising the gross area of one or more exterior building components, such as walls, floors or roof/ceiling.

THERMOSTAT: An automatic control device actuated by temperature and designed to be responsive to temperature.

TOTAL ON-SITE ENERGY INPUT: The combination of all the energy inputs to all elements and accessories as included in the equipment components, including but not limited to, compressor(s), compressor sump heater(s), circulating pump(s), purge devices, fan(s), and the HVAC system component control circuit.

TRANSMISSION COEFFICIENT: The ratio of the solar heat gain through a glazing system to that of an unshaded single pane of double strength window glass under the same set of conditions.

U-FACTOR: (See Thermal Transmittance.)

U-VALUE: (See U-Factor.)

UNCONDITIONED SPACE: Space within a building that is not a conditioned space. (See Conditioned Space).

UNIFORM BUILDING CODE: The Washington State Uniform Building Code as modified by the Washington State Building Code Council.

UNIFORM MECHANICAL CODE: The Washington State Uniform Mechanical Code as modified by the Washington State Building Code Council.

UNIFORM PLUMBING CODE (UPC): The Washington State Uniform Plumbing Code as modified by the Washington State Building Code Council.

UNITARY COOLING AND HEATING EQUIPMENT: One or more factory-made assemblies which include an evaporator or cooling coil, a compressor and condenser combination, and may include a heating function as well. Where such equipment is provided in more than one assembly, the separate assemblies shall be designed to be used together.

UNITARY HEAT PUMP: One or more factory-made assemblies which include an indoor conditioning coil, compressor(s) and outdoor coil or refrigerant-to-water heat exchanger, including means to provide both heating and cooling functions. When such equipment is provided in more than one assembly, the separate assemblies shall be designed to be used together.

VAPOR RETARDER: A layer of low moisture transmissivity material (not more than 1.0 perm dry cup) placed over the warm side (in winter) of insulation, over the exterior of below grade walls, and under floors as ground cover to limit the transport of water and water vapor through exterior walls, ceilings, and floors. Vapor retarding paint, listed for this application, also meets this definition.

VAULTED CEILINGS: All ceilings where enclosed joist or rafter space is formed by ceilings applied directly to the underside of roof joists or rafters.

VENTILATION: The process of supplying or removing air by natural or mechanical means to or from any space. Such air may or may not have been conditioned.

VENTILATION AIR: That portion of supply air which comes from outside (outdoors) plus any recirculated air that has been treated to maintain the desired quality of air within a designated space.

VERTICAL GLAZING: A glazing surface that has a slope of sixty degrees or greater from the horizontal plane.

WALLS (EXTERIOR): Any member or group of members which defines the exterior boundaries or courts of a building and which have a slope of sixty degrees or greater with the horizontal plane, and separates conditioned from unconditioned space. Band joists between floors are to be considered a part of exterior walls.

ZONE: A space or group of spaces within a building with heating and/or cooling requirements sufficiently similar so that comfort conditions can be maintained throughout by a single controlling device. Each dwelling unit in residential buildings shall be considered a single zone.

AMENDATORY SECTION (Amending WSR 93-21-052, filed 10/18/93, effective 4/1/94)

WAC 51-11-1301 Scope. Conditioned buildings or portions thereof shall be constructed to provide the required thermal performance of the various components according to the requirements of this chapter. Unless otherwise approved by the building official, all spaces shall be assumed to be at least semi-heated.

EXCEPTION:

1. Greenhouses isolated from any conditioned space and not intended for occupancy.
2. As approved by the building official, spaces not assumed to be at least semi-heated.
3. Unconditioned Group ~~(M)~~ U occupancy accessory to Group R occupancy.
4. Unstaffed equipment shelters or cabinets used solely for personal wireless service facilities.