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|---|--|--|--------------------|--|
| Appearance of the control of the con | 'n | 2019 Low-Rise Residential Mandatory Measures Summary entel buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach | | |
| Service and the control of the contr | | sective section for more information. "Exceptions may apply." | Requirements | or Vantilation and Indoor Air Quality |
| Handle State of the control of the c | Ā | Ir Laskage. Manufactured functionalion, exterior doors, and elettor pot doors must limit air leakage to 0.3 clim per square foot or less then tested per NFRC 400. ASTM E283 or AAMAVWINMAICSA 1018.5 2/8440-2011. | | Requirements for Ventilistion and Indoor Air Quality. All divelling units must meet the requirements of ASHRAE Standard 82.2, Ventilatio |
| Has and the control of the process o | | bailing. Fanastration products and extentor doors must have a total meeting the requirements of Section 10-111(a). It intertested extentor doors and fanastration products must use U-factors and other heat gain conflictent (SHGC) values from Tables | § 150.0(o)1C: | Single Family Detached Dwelling Units. Single family detacted dwelling units; and attached dwelling units not stealing ceilings or floors with other dwelling units, occupieble spaces, public garages, or commercial spaces must have mechanical yentilation atritow provided at rates |
| selection from the chart by the physical residue which the part of the chart of the part of the chart of the part of the chart of the part | Leakage. | All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked. | | Multifamily Attached Dwelling Uelts. Multifamily attached dwelling units must have mechanical ventilation sirtiou provided at rates in |
| Hande des Charles and the control of | akelad, or weather at suistion Certification d Services (BHGS). | is by Manufacturers. Insulation must be carlified by the Department of Consumer Affairs, Bureau of Household Goods | § 150.0(o)1E: | system is not used, all units in the building must use the same system type and the dwalling-unit envelope leakage must be ≤ 0.3 CFM at 50 |
| 15 this but whether the this is better that of an address of the control of the c | ulation Requirements for Heated | Address of the Miles Market and American Company of the Company of | § 150.06/YE | Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provi |
| Special Conference of the production of the pr | hadel must meet the requirement | is of § 110.8(f) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R. | - | within 20% of the unit with the lowest airflow rate as it relates to the individual unit's reinimum required airflow rate needed for compliance. |
| with the first produced in particular states of the control of the | iling and Rather Roof Insulation. | Minimum R-22 insulation in wood frame celling; or the weighted average 11-factor must not exceed 0.043. | I - P | Field Verification and Diagnostic Testing. Dwelling unit verification airflow must be verified in accordance with Reference Residential Appendix RA3.7, Kitchen range hoods must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is |
| set with the control of a bail of the control of a bail of the control of a bail of the control | distion using adhesive or med ect contact with a continuous | chamical fasteners. The attic access must be gasketed to prevent air leakage, indulation must be installed in roof or celling which is sealed to limit initiation and extilization as specified in § 110.7, including but not timited | Pool and Spa S | rated by HVI to comply with the ablicur rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2. |
| Appendix of the control of the contr | ose-fill insulation. Loos | above or below the roof deck or on two of a drywall ceiling." se fill insulation must meet the manufacturer's required density for the labeled R-vetue. | | Certification by Manufacturers. Any pool or spe healing system or equipment must be certified to have all of the following: a thermal efficient that compiles with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater |
| And the about the control of the con | ve a U-factor of 0.071 or less, | (R-19 in 2x6 or U-factor of 0x74 or isss). Opeque non-framed assembles must have an overall assembly U- | | resistance healing." |
| The second content of parts of a did good work of the parts of the par | lsed-floor (asuletion, Minimum | n R-19 insulation in raised wed framed floor or 0.037 maximum U-factor." | | dedicated auction and return lines, of built-in or built-up connections to allow for future solar heating. |
| The special contribution and the state of the contribution of the | ings no greater than 0.3%; have a v | water vapor permisance no greater than 2.0 perm per inch; be protected from physical demage and UV | | Directional injets and Time Switches for Pools, Pools must have directional injets that adequately may the pool water, and a time switch it |
| The first of the processing when the processing of the processing | por Retarder, in chriefe zones 1 through | 16, the earth floor of unvented gravit space must be covered with a Class I or Class II vapor | · | Pilot Light. Natural gas pool and spe heaters must not have a continuously huming pilot light. Pool Systems and Equipment installation. Residential pool systems or equipment must meet the enertified regularments for resum strips. |
| Fig. 1925 Fig. 2000/2000 Fig. 1920 Fig. 2000/2000 Fig. 200 | por Retarder. In climate zones 14 and 18, clation in all exterior walls, vented affics, a | a Class I or Class II vegor retander must be installed on the conditioned space side of all and universed stitls with air permeable insulation. | - | rate, piping, filters, and valves.* |
| New myst before protection of packages. A protection of packages and the p | wimum U-factor of 0.56; or the weigh | fed everage U-factor of all fenestration must not exceed 0.58.* | § 110.9: | Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirement of § 110.9. |
| Hardware and the standard most of great and contage for contage for an interest of the force and the standard contage for an interest of the standard contage for an i | Gas Appliances, and Gas Log Mea of Light. Continuously burning pilot lig | | § 150.0(k)1A: | Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A. |
| See, quality of the control of the c | sable Doors. Meening or factory- | -built fireplaces must have a closable metal or glass door covering the entire opening of the firebox. | § 160.0(k)1B: | other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, fan speed control. |
| Hermone. The Company of the Company | d is equipped with a readily accessible; or | perable, and light-filing damper or combustion-air control device." | § 150.0(k)1C: | Recessed Downlight Luminaires in Cellings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C. |
| definition is designed. The property of the pr | Valur Healing, and Plumbing System | Measures; | § 150.0(k)1D: | Output medicency no less than 20 MHz. |
| registrate filters and processes and a process of the second of the process of th | lances must be certified by the menufact | mer to fine Energy Commission." | | controlled by vecancy sensors provided they are rated to consume no more than 5 walts of power and emit no more than 150 lumens. |
| 1 St. Option 1. Sept of the control | ntrois for Heat Pumps with Supplement at have controls that prevent supplement | Many Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters any heater coverally when the heating load can be met by the heat group alone; and in which the | | must meet the applicable requirements of § 150.0(k). |
| This plane is a series of the | on temperature for compression healing is opposet on healing is higher than the out-off | higher then the cut-on temperature for supplementary heating, and the cut-off temperature for temperature for supplementary heating.* | | Light Sources in Englosed or Recessed Luminaires, Lamps and other separable light sources that are not compliant with the JAR elevate |
| services from the production of the control of the production of t | back thermostat.* ter Heating Recirculation Loops S | erving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units must | 8-150 n/d/st- | Light Sources in Drawers, Cabinets, and Linen Closets, Light sources internal to drawers, cabinetry or tinen closets are not regulard to |
| Table (1986) and the control of the | et the air release valve, backflow prevention, p 1.3(c)4. | oump priming, pump isolation valve, and reolroidation loop connection requirements of § | | more than 150 limens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closet |
| search workships and contents be tomated by the property of th | as or other filtings on both cold and hot well | er lines to allow for flushing the water heater when the valves are closed. | § 150.0(k)2B: | interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems." |
| internative filters and description of the control in bis billion composition of the control in bis billion or control with the second of the product of any dryw or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the second of the control in bis billion or control with the control of the control in bis billion or control with the control of the control in bis billion or control with the control of the control of the control of the control with the control of the con | es without an electrical supply voltage connection | on with pilotlights that consume less than 150 Bfu/hr are exempt); and pool and spa heaters. | L | turned ON and OFF.* |
| the conditioning the wast least of all wasts of the control of the | ipment Volume, Applications Volume, and F | *Undamentals Volume; the SMACNA Residential Comfort System Installation Standards | - | Interior Switches and Controls. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed in |
| security of the first plant of the confidence which the confidence which previous most activation which the confidence which the confid | arances. Air conditioner and heat pump ou | idoor condensing units must have a classence of at least 5 feet from the cullet of any dryer venit. | § 150.0(k)2F: | interior Switches and Controls, Lighting controls must comply with the applicable requirements of § 110.9. |
| involution involvable in invol | nufacturer'e instructions. rege Tank Insulation. Unlired hot water tanks, suc | is as storage tanks and backup storage tanks for solar water-heating systems, must have | § 150.0(k)2G: | provides functionality of the specified control according to § 110.9; meets the installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2. |
| in Reales of 17. The first is that of cody is subject from the declarage basic plant can be compared to the cody of the cody o | inimum of R-12 external insulation or R-16 internal in er Piping, Solar Water-heating: System Piping, an | sulation where the internal insulation R-value is indicated on the exterior of the tank. d Space Conditioning System Line Insulation. All demostic hot water piping must | | Interior Switches and Controls. A multiscene programmable controllar may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 180.0(k)? |
| in, mom the healing suscess to straight, markets, contributions, contributions, and production for the contributions of the contribution of the co | lation wall thickness of 1 inch or a minimum insulation R-value | of 7.7: the first 5 feet of cold water pipes from the storage tank; all hot water | § 150.0(k)21: | be controlled by an occupant sensor or a vecancy sensor providing automatic off functionality. If an occupant sensor is installed, it must be |
| inferior development melinearons, and method appearance melinearons, and method appearance in the light on or protected by per la season of the light of the ligh | i hat is: associated with a domestic hot water recirculation system, from the heating le, and from the heating source to kitchen fixtures.* | source to storage tank or between tanks, buried below | | Interior Switches and Controls, Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimining controls. |
| sourcembers depose mine tenders, or in protection by, or an analyser of an order controllation bearing or in severe production for the control of the contro | has required by Section 120.3(b). Insulation exposed to weather must be water retain | dent and protected from UV light (no achesive tapes). | § 150.0(k)2K: | Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems. Residential Outdoor Lighting. For shale-family residential buildings, autdoor lighting germanently mounted to a residential building, or to o |
| somewhater to the electric posed with a displaced by with colories of the superior conduction of the unused conduction and in a circuit breaking prise for search or the electrical panel algorer for the colorital content or any proposal part of the search or the electrical panel algorer for the colorital panel algorer for the circuit breaking ripe between the search and panel algorer for the circuit panel and panel algorer for the circuit panel and panel algorer for the circuit panel algorer for the | e Lor Class II vapor retarder. Plipe Insulation buried below grade n | ust be installed in a waterproof and non-crushable casing or sleeve. | § 150,0(k)3A: | § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control or § 150.0(k)3Aii (astronomical time clock), or an EMC: |
| Besidential Custom Language of the eduction (parall adjournet to the electrical parall adjournet to the electrical parallel adjournet to earliest of electrical parallel adjournet to earliest of electrical parallel | ollowing: A dedicated 125 volt, 20 amp electrical recepted that is connected 5 copper branch circuit, within 3 feet from the water heater without obstruction | I to the electric panel with a 120/240 wilt 3 conductor, 10 n. Both ands of the unused conductor must be labeled with the | § 150.0(k)3B: | balconias, and porchas; and residential parking lots and carports with less than eight vehicles per site must comply with either Section 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0. |
| upong entables, and a gas supply this will a capacity of at least 200,000 Bits per hours, updated and supply will be defined upon the state of the National Configuration of \$1 100,000 Bits per least and residue of the South Palling and Certification provides and destination make to confide and saved by the South Palling and Certification provides and destination of the South Palling and Certification (SAC) Section 60,000 Bits per hours and the Certification of the South Palling and Certification (SAC) Section 60,000 Bits per hours and the Certification of the South Palling and Certification (SAC) Section 60,000 Bits per hours and the Certification of the South Palling and Certification (SAC) Section 60,000 Bits per hours and the Certification of the South Palling and Certification (SAC) Section 60,000 Bits per hours and the Certification of the South Palling and Certification (SAC) Section 60,000 Bits per hours and the Certification of the South Palling and Certification (SAC) Section 60,000 Bits per hours and the Certification of the Certification (SAC) Section 60,000 Bits per hours and the Certification of the Certification (SAC) Section 60,000 Bits per hours and the Certification of the Certification (SAC) Section 60,000 Bits per hours and the Certification (SAC) Section 60,000 Bits per historic common means in the South Palling Section (SAC) Section 60,000 Bits per historic common means in the South Palling Section (SAC) Section 60,000 Bits per historic common means in the South Palling Section (SAC) Section 60,000 Bits per historic common means in the South Palling Section 60,000 Bits per historic common means in the South Palling Section 60,000 Bits per historic common means in the South Palling Section (SAC) Section 60,000 Bits per historic common means and section of the South Palling Section (SAC) Section 60,000 Bits per historic common means and section of the South Palling Section 60,000 Bits per historic common means and section of the South Palling Section 60,000 Bits per historic common means and | he branch circuit and labeled with the words 'Fu | time 240V like"; a Calegory lift or IV yent, or a Type B yent with straight pipe between the | § 150.0(k)3C: | or carports with a total of eight or more vehicles per site and any outdoor lightly not required by Section 150 8(k)38 or Section 150 0(k)38 or Section 15 |
| sating systems and calectives made to coefficial and particly this Solid Failing and Certification of Planship and Mechanical Clinicals, Research and Testing (MPAIO RRT), or by a labrage date of Planship and Mechanical Clinicals, Research and Testing (MPAIO RRT), or by a labrage date of Planship and Mechanical Clinicals, Research and Testing (MPAIO RRT), or by a labrage date of Planship and Mechanical Clinicals, Research and Testing (MPAIO RRT), or by a labrage date of the composition of the compositio | valer heater, and allows hatural draining v | efficient pump assistance; and a gas supply line with a capacity of at least 200,000 Blu per hour. | § 150.0(k)4; | Internally Illuminated address signs. Internally Illuminated address signs must comply with § 140.8; or must consume no more than 5 watts power as determined according to § 130.0(c). |
| File blocks. File of the contraction of the cont | r Water-heating Systems. Solar wate oration (SRCC), the international Ass | or-heating systems and callectors must be certified and rated by the Solar Rating and Certification occlusion of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing | § 150.0(k)5: | applicable requirements für nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0. |
| Interior must certify to the customer in writing, that the heartined Corde (CMC) Section 40.4.d. If a relation must certify to the customer in writing, that the heartined Corde (CMC) Section 40.4.d. If a possible policy of the customer in writing, that the heartined Corde (CMC) Section 40.4.d. If a policy of the customer in writing, that the heartined (corder) is septimentally installed thyriting of the interior common areas in a septiment for the customer share the septiment of the CMC Section 40.4.d. (CMC) Section 40.4.d | cy that is approved by the Executions: | VO DIRECTOR. | § 150.0(k)8A: | common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be camply with Table 160.0-A and be controlled by an occupant sensor. |
| Does specified much carbon diplomates used meet the segulatements of the CMS Section P016, 802.6, 803.6, 804.6, 804.6 814.8C DUE Controllation Stateback behaltered and PACED DUE Controllation Pacification Pacifica | is. Insulation installed on an ex | | & fandillen. | Interfor Common Areas of Low-rise Multifamily Residential Buildings, in a tow-rise multifamily residential building where the total interior common area in a single building squals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in |
| to a minimum installed level of R+2-V rea minimum installed level of R+2-V read ducts are entirely in part for the minimum installed level of R+2-V read ducts are entirely in part for the minimum installed level of R+2-V read and inter core of flexible outcomes and species to seption of the substance of control of the duct system completely exposed and space are not required to be installed. Connections of metal ducts and inter core of flexible ducts must be easied with mark the species duct ducts intered for ducts described in cardinal part of the minimum installed. Connections of metal ducts and inter core of flexible ducts must be assessed with mark the species ducts intered for ducts described out intered to be used to seed oparing greater from a deliberation of the seed of the metal ducts and the most intered to compare seed to command the most of the seed of of the s | Compliance. All air-distribution and ANSI/8MACNA-008-2008 | n system ducts and ptensins must meet the requirements of the CMC Section 601.0, 602.0, 603.0, 604.0, HVAC Duct Construction Standards Metal and Flexible Stot Edition. Portions of supply-air and return-air | | i. Comply with the applicable requirements in Sections 110.9; 130.0; 130.1; 140.6 and 141.0; and ii. Lighting installed in confiders and stainwells must be controlled by occupant sensors that reduce the lighting power in each space by at least |
| Single Family Residences. Single family residences located in subdivisions with intercents to the sealer of the residence of Single Family Residences. Single family residences has been deemed compisée and approved by the enforcement agency, which offer make to see the subdivision with family to the residences has been deemed compisée and approved by the enforcement agency, which of the medition residence is the residence of the residence of the residence is a population for a tensitive subdivision. The residence is a population for a tensitive subdivision with family residences and been deemed compisée and approved by the enforcement agency, which of the needles assign subdivision with family residences and twister the subdivision with family residences and enforcement agency, which do not have a photovolatel system installed must comply with a population from the time to essent the compressed of cuses of cut operation shaded dust systems sund comply with applicable requirements for dust constitution. Single Family Residences. Single family residences has been deemed complete and expressed to the residence of the residence of the seed of the seed of the residence of the seed of the seed of the seed of the residence of the seed of the seed of the residence of the seed of the seed of the seed of the residence of the seed of the r | s and plenums must be insulated t litioned space as confirmed throug | to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducks are entirely in th field verification and diagnostic testing (RA3.1,4.3.8). Portions of the duct system completely exposed | Solar Ready Buildi | 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress, ings: |
| or tape must be used. Building caviliss, support platforms for a'r handlers, and plenums sealed shatemake, duct board or facilities duct must not be used to convey conditioned air, in ducts. Duck installed in cavilles and support platforms must not be compressed to cause sealed with citation to use and to compressed to cause the must comply with applicable requirements for duct construction, cot systems must comply with applicable requirements for duct construction, cot systems must comply with applicable requirements for duct construction, cot systems must comply with applicable requirements for duct construction, or systems must comply with applicable requirements for duct construction, or systems must comply with applicable requirements for duct construction, or systems must comply with applicable requirements for duct construction, or systems must comply with applicable requirements for duct construction, or systems must comply with applicable requirements for duct construction, or systems must comply with applicable requirements for duct construction, or systems must comply with applicable requirements for duct construction, or systems must comply with applicable requirements for duct construction, or systems must comply with applicable requirements for duct construction for ductions and applicable or to duct a system function for any applicable requirements of \$110.10(a)2. In any requirements a great from indiging a must be requirements as specified in Title 24 or near must comply with the requirements of \$110.10(b). In any requirements a great from the function of 10,000 square fact or no less than 10 for 10,000 square fact or no less than 10 for 10,000 square fact or no less than 10 for 10,000 square fact or no less than 10 for 10,000 square fact or no less than 10 for 10,000 square fact or no less than 10 for 10,000 square fact. For low-line, and the solar zone must be contained within 250 fact or no less than 10 for 10,000 square fact or no less than 10 for 10,000 square fact or no less than 10 for | echanically fastened. Openings must be see 81, UL 181A, or UL 181B or aerosol sealant | ied with mastic, tage, or other duck-closure system that meets the applicable requirements of that meets the requirements of UL 723, if mastic or tage is used to seel onenings greater than | § 110.10(a)1; | application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement apency, which |
| Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, anxiotive ventilation, and specing requirements as specified in Title 24, Part 9 or other Parts of Title 24 or in any requirements advised to mastic and draw bands. Let systems and their components must not be sealed with cloth back rubber adhesive duct mastic and draw bands. Let systems and draw bands. Let systems and comply with applicable requirements for: pressure-sensitive tapes, for duct oxistation. Systems specified and provided or expect to the sealer zone must be located on the roof or overhange of the building, or on the roof or overhange of another structure located within 250 feet of the building excelled and have a total serse no less than 15 certain feet. For low-rise must family buildings the solar zone must be located on the roof or overhange of the building, or on other accordance of minimum total area as described below. The solar zone must have a located on the roof raise of the solar zone must have a located on the roof raise of the solar zone must be located on the roof or overhange of the building, or on observable project, and sever a total area no less than 15 center of area of the building exclanding any skylight area. The solar zone requirement is applicable to the entire building, or on other accordance of the building sever on the roof or overhange of another structure located within 250 feet of the building exclanding any skylight area. The solar zone requirement is applicable to the entire building, or on derived within 250 feet of the building sever on development. \$ 110.10(b)2: \$ 110.10(b)32: \$ 110.10(b)33: \$ 110.10(b)34: \$ 110.10(b)35: \$ 110.10(b)36: \$ 110.10(b)37: \$ 110.10(b)38: \$ 110.10(b)38: \$ 110.10(b)4: \$ 110.10(b)4: \$ 110.10(b)5: \$ 110.10(b)5: \$ 110.10(b)6: \$ 110.10(b)6: \$ 110.10(b)7: \$ 110.10(b)8: \$ 110.10(b)8: \$ 110.10(b)9: \$ 110.10(b)9: \$ 110.10(b)9: \$ 110.10(b)9: \$ 110.10(b)9: \$ 110.10(b)9: \$ 110.10(b)9 | xh, the combination of mastic and either meeh o med or constructed with meterials other than s | or tape must be used. Building cavities, support platforms for air hendlers, and plenums eating sheet matel, duct poand or flexible duct must not be used to convey conditioned air. | § 110.10(a)2: | Low-rise Multifamily Buildings, Low-rise multi-family buildings that do not have a photograph system installed must comply with the |
| duct systems and their components must not be sealed with cloth back rubber adhesive duct with mastic and daw bands. If the first master and their components must not be sealed with cloth back rubber adhesive duct with master and their components must not be sealed with a cloth back rubber adhesive tapes, filted for duct construction. If the first must be and the water retardent and provides pace and outdoors must have backdraft of automatic dampers. The solar search conditioned space must have either automatic dampers. The solar search conditioned space must have either automatic dampers. The solar search conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, so conditioned space must have either automatic or readily accessible, and the previous previous have a conditioned space must have either automatic or readily accessible, and the solar space or and the sola | clions in the cross-sectional area." | | | Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access |
| incided dust systems must comply with applicable requirements for; pressure-sensitive tapes, pecified for duct construction. \$ 110.10(b): \$ | ections, and closures; joints and seems runiess such tape is used in combination | s of duct systems and their components must not be sealed with cloth back nubber addresive duct ion with mastic and draw bands. | | by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 30 solars feet each for buildings with roof areas less than or solars to 18,000 solars feet or no less than 180 solars test each for buildings with |
| building project, and here a total area in less than 15 percent of the total root area of the building any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy. Azimuth. All sections of the solar zone located on steep-sloped roots must be oriented between 90 degrees and 300 degrees of true north. Azimuth. All sections of the solar zone located on steep-sloped roots must be oriented between 90 degrees and 300 degrees of true north. Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment. Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be oriented between 90 degrees and 300 degrees of true north. Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment. Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be oriented between the highest point of the obstruction and the horizontal projection of the north projection of the obstruction and duct leakage leated, as confirmed through field ventification and diagnostic testing, in and duct leakage leated, as confirmed through field ventification and diagnostic testing, in and duct leakage leated, as confirmed through field ventification and diagnostic testing, in the near core and of the both contained through field ventification and diagnostic testing, in and duct leakage leated, as confirmed through field ventification and diagnostic testing, in the near core and through the obstruction and ductions are solar zone, the structural design locate or confirmed through the provide and roof live boat must be clearly indicated in the construction documents. For areas of the roof designated as a solar zone, the structural design located for inverters and material graphers are solar zone to | cs, sealants, and other requirements sp | ecilied for duct construction. | § 110:10(b)1: | roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overheing of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the most or overhein of |
| Asimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north, in danage, sunlight, moisture, equipment maintenance, and wind, insulation exposed to, protected by atuminum, sheet metal, painted carvas, or placific cover. Cellular a positing that is water retardant and provides shielding from solar radiation. Sinust have a non-portous layer between the inner-core and outer vapor barrier. Indicating systems use forced all duct systems to supply conditioned air to an indicating systems use forced all duct systems to supply conditioned air to an indicating systems use forced all duct systems to supply conditioned air to an indicating systems use forced all duct systems to supply conditioned air to an indicating systems use forced all duct systems to supply conditioned air to an indicating systems use forced all duct systems to supply conditioned air to an indicating systems to supply side of ventilation systems must have a color control the solar zone, measured in the vertical plane, of the height difference between the highest point of the obstruction and the horizontal projection of the solar zone, measured in the vertical plane, of the height difference between the highest point of the obstruction and the horizontal projection of the solar zone, measured in the vertical plane, of the height difference between the highest point of the obstruction and the horizontal projection of the solar zone, measured in the vertical plane, of the height difference between the highest point of the obstruction and the horizontal projection of the solar zone, measured in the vertical plane, of the height difference between the highest point of the obstruction and the horizontal projection of the solar zone, measured in the vertical plane. Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design location reserved for invertees and metal plane of the solar zone to the point of interconnectio | ity Ventilation Dampers. Gravity ventilating systems | serving conditioned space must have either automatic or readily accessible, | | building project, and have a total erea no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone |
| s. For example, protected by altuminum, sheet metal, painted canvas, or plastic cover. Cellular painted with a coating that is water retardant and provides sitedding from solar radiation. one flex ducts must leve a non-porous layer between the inner core and outer vapor barrier. en space conditioning systems use forced air duct systems to supply conditioned air to an od duct leakage issted, as continued through field verification and diagnostic testing, in ducts exceeding 10 feet and the supply side of ventiliation systems must have MIERV 13 or systems must have a 2 inch depth or can be 1 inch if sized per Equation 150.0-A. Pressure drops 100.0(n) 12. Filters must be accessible for regular service.* 10.10(o): \$ 110.10(o): \$ 110.1 | tally operated dampers in all openings to oction of insulation. Insulation must be o | the outside, except combustion intel and outlet air openings and elevator shaft vents. | § f10.10(b)2: | Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north. |
| is seed of the solar confirmed through field verification and diagnostic testing, in the nearest point of the solar zone, measured in the verifical plane. The nearest point of the obstruction and the horizontal projection of the horizontal projecti | ether maist be sulfable for outdoor service. For insulation maist be protected as above or paint | example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular ad with a coating that is water retardent and provides shielding from solar radiation. | \$ | mounted equipment." Shading. Any obstruction located on the roof or any other part of the building that projects above a scient zone must be becated at least build. Its |
| Residential Appendix RA3. Inducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or a systems must have a 2 inch depth or can be 1 inch if sized per Equation 150.0-A. Pressure drops: \$ 110.10(c): \$ 110.10(| System Sealing and Leakage Test. Wi Vable space, the ducts must be sealed a | nen space conditioning systems use forced air duct systems to supply conditioned air to an nd duct leakase issted, as confirmed through field verification and diagnostic testing, in | \$ 110.10(0)38: | distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane." |
| must have a 2 inch depth or can be 1 inch if sized per Equation 150.0-A. Pressure drops 1 Filtra must be accessible for regular service. 1 Filtra must be accessible for regular service in the supply plumbing from the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the supply plumbing from the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the supply plumbing from the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be accessible for regular service in the solar zone to the water-heading systems. 1 Filtra must be acce | dance with § 150,0(m)11 and Reference Residents Bratton. Space conditioning systems with ducts ex | al Appendix RAS. | | ised load and roof live load must be dearly indicated on the construction documents. Interconnection Pathylans. The construction documents must indicate a incestion reserved for inventers and meterion equipment and a |
| ## 10.10(s) must be provided to the occupant. ### 10.10(s) must be provided to the occupant. #### 10.10(s) must be provided to the occupant. ################################### | alent fillers. Fillers for space conditioning systems m beling must meet the requirements in §150.0(m)12. | usthare a 2 inch depth or can be 1 inch if sized per Equation 150.0-A. Pressure drops Films must be accessible for regular service.* | 3 F10.10(0): | partway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for eingle family residences and central water-heating systems, a pathway reserved for multing plumblant from the solar zone to the water-heating system |
| mit interflicity ≤ 0.45 wells per CFM for gas furnace of handlers and ≤ 0.58 wells per [\$ 1.0.10(s); main Execution 3 envice Panel. The main electrical service panel must have a manifest reason to allow for the installation of a double role circumstance. The main electrical service panel must have a manifest reason to allow for the installation of a double role circumstance. | placement of a static pressure probe, or a perman | ently installed static pressure probe in the supply plenum. Aliflow must be ≥ 350 CFM | 4 | 110.10(c) must be provided to the occupant. |
| MINORAL MINORA MINORAL MINORAL MINORA MINORAL MINORAL MINORA MINORA MINORA MINORA MINORA MINORA MINORA | n of nominal cooling capacity, and an an-nanding unit is energy 5 u.40 w | CFM per ton of nominal continue repartity, and an elicited fine. | * | main successed service Panel. The main electrical service panel must have a minimum busber rating of 200 amps. Bain Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit realier for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric". |
| | n efficacy ≤ 0.62 v | · | | |
| | n efficacy ≤ 0.62 watte per CFM. Fleid v | | | |
| | n efficacy ≤ 0.62 watts per CFM. Fleid's | | | |
| | n efficacy ≤ 0.62 watts per CFM, F. | | | |
| | n efficacy ≤ 0.62 walls per CFM. Field verification teeling is real | | | |
| | n efficacy ≤ 0.62 walls per CFM. Field ve | | | |

| CERTI | FICATE O | F COMPLIANCE | | | | | | | * | - | CF1R-PRF-01E |
|--|--|---|---|--|--|---|---|--|--|---|---|
| Projec | t Name: | Khan & Ameen Residence | е | • | | Calcul | ation Dat | e/Time: 2022-12-20115: | 34:34-08:00 | | |
| Calcul | ation Des | scription: Title 24 Analys | is | | | input | File Name | e: 19169-2.ribd19x | • | | |
| GENER | AL INCOD | MATION | | | 20)2707-701-701-701-701-701-701-701-701-701- | | | | | · | |
| ļ | Jac Intron | | t Nome | Khan & Amoon Pasidonso | | | | | | | |
| | - | | | | | | | | | | |
| - | - | | | | *************************************** | | | | | | |
| | | Project i | | · | | 05 | | Chandanda | V 2010 | | |
| | <u> </u> | | | | | | <u> </u> | | | . D 03 | |
| - | - | | | | | | | | | yPro 8.3 | *************************************** |
| <u> </u> | | | | | | | ļ | | | | |
| | | | | | | | <u> </u> | | | | |
| | | | | | | | | | | | · |
| 14 Addition Cond. Floor Area (ft²) 325 | | | | | | 15 | | | | | |
| 16 | | Existing Cond. Floor A | rea (ft ²) | 868 | | 17 | | Fenestration Average I | J-factor 0.32 | | |
| 18 | | Total Cond. Floor A | rea (ft ²) | 1193 | | 19 | | Glazing Percent | age (%) 16.31 | % | · · |
| 20 | | ADU Bedroor | n Count | n/a 🧢 🧍 | Same Break | 21 | 5 to | ADU Conditioned Flo | or Area n/a | - | |
| 22 | | Is Natural Gas Av | ailable? | Yes | \$ Parts | | | | | | |
| | | | | | | å D | T. Sarah | | | | |
| Additio | on Alone F | Project Analysis Parameter | ; | | | , / **. ./ -/ | 1, | | | | |
| | | 01 | | 02 | 0 |)3 | | 04 | 05 | | 06 |
| Exist | ting Area (| (excl. new addition) (ft2) | Additio | on Area (excl. existing) (ft2) | Total A | rea (ft2 |) | Existing Bedrooms | Addition B | edrooms | Total Bedrooms |
| | | 868 | | 325 | 11 | 93 | | 2 | 1 | | 3 |
| СОМР | LIANCE RE | SULTS | · | | | | | | | | |
| | 01 | Building Complies with Co | mputer | Performance | | | | | | | |
| | 02 | This building incorporate | feature | s that require field testing an | d/or verification | n by a c | ertified HE | RS rater under the supervi | sion of a CEC-a | pproved HER | S provider. |
| | Project Calcul GENEF 01 02 03 04 06 08 10 12 14 16 18 20 22 Additi | Project Name: Calculation De GENERAL INFOR 01 02 03 04 06 08 10 12 14 16 18 20 22 Addition Alone Existing Area | GENERAL INFORMATION 01 Project 02 R 03 Project L 04 Clima 10 Buildi 12 Project 14 Addition Cond. Floor A 16 Existing Cond. Floor A 20 ADU Bedroon 22 Is Natural Gas Av Addition Alone Project Analysis Parameters 01 Existing Area (excl. new addition) (ft2) 868 COMPLIANCE RESULTS 01 Building Complies with Co | Project Name: Khan & Ameen Residence Calculation Description: Title 24 Analysis GENERAL INFORMATION 01 | Project Name: Khan & Ameen Residence Calculation Description: Title 24 Analysis GENERAL INFORMATION 01 | Project Name: Khan & Ameen Residence Calculation Description: Title 24 Analysis GENERAL INFORMATION 01 | Project Name: Khan & Ameen Residence Calculation Description: Title 24 Analysis Input | Project Name: Khan & Ameen Residence Calculation Description: Title 24 Analysis Input File Name GENERAL INFORMATION 01 Project Name Khan & Ameen Residence 02 Run Title Title 24 Analysis 03 Project Location 312 W. 220th 04 City Carson 05 06 Zip code 90745 07 08 Climate Zone 8 09 10 Building Type Single family 11 12 Project Scope AdditionOnly 13 14 Addition Cond. Floor Area (ft²) 325 15 16 Existing Cond. Floor Area (ft²) 868 17 18 Total Cond. Floor Area (ft²) 193 19 20 ADU Bedroom Count 12 Is Natural Gas Available? Yes Addition Alone Project Analysis Parameters 01 02 03 Existing Area (excl. new addition) (ft2) Addition Area (excl. existing) (ft2) Total Area (ft2) 868 325 1193 COMPLIANCE RESULTS 01 Building Complies with Computer Performance | Project Name: Khan & Ameen Residence Calculation Description: Title 24 Analysis Input File Name: 19169-2-ribd19x GENERAL INFORMATION O1 Project Name Khan & Ameen Residence O2 Run Title Title 24 Analysis O3 Project Location 312 W. 220th O4 City Carson O5 Standards O6 Zip code 90745 O7 Software O8 Climate Zone 8 O9 Front Orientation (deg/ Climate Zone AdditionOnly II Number of Dwellin II Number of Dwellin II Number of Be 14 Addition Cond. Floor Area (ft²) 325 IS Number of Be 14 Existing Cond. Floor Area (ft²) 193 IP Glazing Percent D8 Total Cond. Floor Area (ft²) 1193 IP Glazing Percent D9 Glazi | Project Name: Khan & Ameen Residence Calculation Date/Time: 2022-12-20T15:34:34-08:00 | Project Name: Khan & Ameen Residence Calculation Date/Time: 2022-12-20T15:34:34-08:00 |

| ENERGY USE SUMMARY | | | | | | | | | | | |
|-------------------------------------|-----------------|-----------------|-------------------|---------------------|--|--|--|--|--|--|--|
| Energy Use (kTDV/ft²-yr) | Standard Design | Proposed Design | Compliance Margin | Percent improvement | | | | | | | |
| Space Heating | 1.85 | 1.9 | -0.05 | -2.7 | | | | | | | |
| Space Cooling | 37.49 | 34.29 | 3.2 | 8.5 | | | | | | | |
| IAQ Ventilation | 0 | O | 0 | | | | | | | | |
| Water Heating | 60.73 | 60.73 | 0 | 0 | | | | | | | |
| Self Utilization/Flexibility Credit | n/a | σ | 0 . | n/a | | | | | | | |
| Compliance Energy Total | 100.07 | 96.92 | 3.15 | 3.1 | | | | | | | |

| | Compliance Energy Iotal | 100.07 | 96.92 | 3,15 | 3.1 | l |
|-------|--|---|---------------------------------------|------|-----|---|
| - | | | | | | |
| REQU | JIRED SPECIAL FEATUR S | | | | | |
| The f | ollowing are features that must be installed as condit | ion for meeting the modeled energy p | performance for this computer analysi | S. | | |
| • | Variable capacity heat pump compliance option (ve | rification details from VCHP Staff repo | ort, Appendix B, and RA3) | | | |
| | | | | | | - |

| HERS FEATURE SUMMARY | | |
|---|--|--|
| | that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy perfor bw. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry | mance for this computer analysis. Additional |
| Building-level Verifications: None | | |
| Cooling System Verifications: • Verified EER | | • |

| 11 | - Vernieu cen |
|----------------------|--|
| object of the second | Verified Refrigerant Charge |
| | Airflow in habitable rooms (SC3.1.4.1.7) |
| | Heating System Verifications: |
| | Verified HSPF |

Verified heat pump rated heating capacity
Wall-mounted thermostat in zones greater than 150ft2 (SC3.4.5) Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)

This building incorporates one or more Special Features shown below

HVAC Distribution System Verifications:

Domestic Hot Water System Verifications:

| NE INFORMATION | | | | | | |
|--------------------|-------------|------------------|------------------------------------|---------------------|------------------------|---------------------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 |
| Zone Name | Zone Type | HVAC System Name | Zone Floor Area (ft ²) | Avg. Ceiling Height | Water Heating System 1 | Water Heating System 2 |
| 1st Floor Addition | Conditioned | HVAC1 | 325 | 8 | DHW Sys 1 | N/A |
| PAQUE SURFACES | | | | | | · · · · · · · · · · · · · · · · · · · |

| 01 | 02 | 03 | 04 | 0 5 | 06 | 07 | 08 | 09 | 10 |
|------------|--------------------|-----------------|---------|-------------|-------------------------------|-------------------------------|------------|-----------------|--------|
| Name | Zone | Construction | Azimuth | Orientation | Gross Area (ft ²) | Window and Door Area (ft2) | Tilt (deg) | Wall Exceptions | Status |
| North Wall | 1st Floor Addition | R-13 Wall | 0 | Left | 88 | 7 | 90 | none | New |
| East Wall | 1st Floor Addition | R-13 Wall | 90 | Back | 136 | 26 | 90 | none | New |
| South Wall | 1st Floor Addition | R-13 Wall | 180 | Right | 88 | 20 | 90 | none | New |
| Roof | 1st Floor Addition | R-30 Roof Attic | n/a | n/a | 162.5 | n/a | n/a | · | New |
| Roof 2 | 1st Floor Addition | R-30 Roof Attic | n/a | n/a | 162.5 | n/a | y⊹ n/a . | | New |

| Attic 1st Floor Addition | Attic Roof1st Floor Addition | Ventilated | 4 | | 0.1 | | | 0.85 | And the second s | No | | | No |
|--------------------------|---------------------------------|--|-------------|---------|---------------|----------------|-------|----------------------------|--|--------------------|------|--------------------|---------------------|
| FENESTRATION / GLAZIN | IG | ************************************** | | | | | | | | | | | |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
| Name | Туре | Surface | Orientation | Azimuth | Width (ft) | Height (ft) | Mult. | Area (ft ²) | U-factor | U-factor Source | SHGC | SHGC Sourc e | Exterior Shading |
| North Windows | Window | North Wall | Left | 0 | | | 1 | 7 | 0.32 | NFRC | 0.28 | NFRC | Bug Screen |
| East Windows | Window | East Wall | Back | 90 | | | 1 | 6 | 0.32 | NFRC | 0,28 | NFRC | Bug Screen |
| East Windows 2 | Window | East Wall | Back | 90 | | | 1 | 6 | 0.32 | NFRC | 0.28 | NFRC | Bug Screen |
| East Windows 3 | Window | East Wall | Back | 90 | | | 1 | 6 | 0.32 | NFRC | 0.28 | NFRC | Bug Screen |

05

| | | | | | | | | | | - | - | | - |
|------------------------|--------|------------|-------------|---------|---------------|----------------|-------|---------------|----------|--------------------|------|--------------------|---------------------|
| FENESTRATION / GLAZING | · | | | | | | | | | | - | | |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | £19 | 10 | 11 | .12 | 13 | 14 |
| Name | Туре | Surface | Orientation | Azimuth | Width (ft) | Height (ft) | Mult. | Area (ft²) | U-factor | U-factor Source | SHGC | SHGC Sourc e | Exterior Shading |
| East Windows 4 | Window | East Wall | Back | 90 | | | 1 | 8 | 0.32 | NFRC | 0.28 | NFRC | Bug Screer |
| South Door | Window | South Wall | Right | 180 | 1 | | 1 | 20 | 0.32 | NERC | 0.28 | NERC | Rug Screet |

| SLAB FLOORS | | - | | | | • | |
|---------------|--------------------|-------------------------|----------------|----------------------------------|----------------------------------|-------------------|--------|
| 01 | 02 | 03 | 04 | 05 | 06 ~ | 07 | 08 |
| Name | Zone | Area (ft ²) | Perimeter (ft) | Edge insul. R-value and Depth | Edge Insul. R-value and Depth | Carpeted Fraction | Heated |
| Slab-on-Grade | 1st Floor Addition | 325 | 36 | none | Ö | - 80% | No |

| - | | | | , | | | \$ |
|---------------------------------|---------------------------|---------------------------------------|---------------------|-------------------------|--|----------|--|
| PAQUE SURFACE CONSTR | RUCTIONS | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | X x xx xx | | And the second |
| 01 | 02 | 03 | 04 | 05 | 606 | 07 | 08 |
| Construction Name | Surface Type | Construction Type | Framing | Total Cavity R-value | Interior / Exterior Continuous R-value | U-factor | Assembly Layers |
| R-13 Wall | Exterior Walls | Wood Framed Wall | 2x4 @ 16 in. O. C. | R-13 | None / None | 0.101 | Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Exterior Finish: 3 Coat Stucco |
| Attic Roof1st Floor Addition | Attic Roofs | Wood Framed Ceiling | 2x4 @ 24 in. O. C. | R-0 | None / None | 0.644 | Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 |
| R-30 Roof Attic | Ceilings (below attic) | Wood Framed Ceiling | 2x10 @ 16 in, O. C. | R-30 | None / None | 0.034 | Over Ceiling Joists: R-6.0 insul. Cavity / Frame: R-24.1 / 2x10 Inside Finish: Gypsum Board |

| BUILDING ENVELOPE - HERS VERIFICATION | | • | |
|---------------------------------------|------------------------------------|-------------------------------|-------|
| 01 | 02 | 03 | 04 |
| Quality Insulation Installation (QII) | High R-value Spray Foam Insulation | Building Envelope Air Leakage | CFM50 |
| Not Required | Not Required | Not Required | n/a |
| WATER HEATING SYSTEMS | | | |

| 01 | 02 | 03 - | 04 | 05 | 06 | 07 |
|-----------|-----------------------------|---------------------------------|-----------------------|----------------------|----------------------|-------------------|
| Name | System Type | Distribution Type | Water Heater Name (#) | Solar Heating System | Compact Distribution | HERS Verification |
| OHW Sys 1 | Domestic Hot Water (DHW) | Standard Distribution System | DHW Heater 1 (1) | n/a | Non e | n/a |

| | WATER HEAT | ERS | | | | | | | | | | • | | |
|------------------------------|-----------------|----------------------------|-----------|---------------|-----------------------|-----------------------------------|--------------------------|--|------------------------------------|-----------------------------------|----------------------------------|--|----------|-----------------------------------|
| - Company | 01 | 02 | 03 | 04 | 05 | 06 (280) | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
| 1 | Name | Heating Element Type | Tank Type | # of Units | Tank Vol. (gal) | Energy Factor or Efficiency | Input Rating or Pilot | Tank Insulation R-value (Int/Ext) | Standby Loss or Recovery Eff | 1st Hr. Reting or Flow Rate | NEEA Heat Pump Brand or Model | Tank Location or Ambient Condition | Status | Verified Existing Condition |
| A construction of the second | DHW Heater 1 | Gas | n/a | - | 50 | 0.7-EF | <= 75 kBtu/hr | 0 | 76 | n/a | n/a | n/a | Existing | n/a |

| | WATER HEATING - HERS | VERIFICATION | | | | | | |
|---|----------------------|-----------------|-----------------|----------------------|---------------------------|-----------------------|-----------------------------|-------------------------------------|
| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
| - | Name | Pipe Insulation | Parallel Piping | Compact Distribution | Compact Distribution Type | Recirculation Control | Central DHW Distribution | Shower Drain Water Heat Recovery |
| | DHW Sys 1 - 1/1 | Not Required | Not Required | Not Required | None | Not Required | Not Required | Not Required |

| SPACE CONDITIONING S | YSTEMS | | | | | | | | | - | - |
|----------------------|----------|--------------------|-----------------------|-----------------------|----------|----------------------|--------------------------------|--------|-----------------------------------|-------------------------------|-------------------------------|
| 01 | | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
| Name | S | ystem Type | Heating Unit Name | Cooling Unit Name | Fan Name | Distribution Name | Required Thermostat Type | Status | Verified Existing Condition | Heating Equipment Count | Cooling Equipment Count |
| HVAC1 | Heat pur | np heating cooling | Heat Pump System 1 | Heat Pump System 1 | n/a | n/a | Setback | New | NA | . 1 | 1 |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | - 09 | 1 | 0 | 11 |

| ı | L | | | | | | | 7. | | | | |
|------------|---|--------------------|----------------------------------|-----------------|----------|---------|---------------|------|-----------|------------|-----------------|-----------------------------------|
| | Ī | HVAC - HEAT PUMPS | | | | | | | | - | | William III Company |
| | ſ | Name | Name System Type Number of Units | | | Heating | | | Cooling | | Compressor | HERS Verification |
| J | | Manie | System Type | Number of Chits | HSPF/COP | Cap 47 | Cap 17 | SEER | EER/CEER | Controlled | Type | HEND VEHINABION |
| - Treesman | | Heat Pump System 1 | VCHP-ductless | 1 | 9 | 24000 | 1800 0 | 14 | 12 | Not Zonal | Single Speed | Heat Pump System 1-hers-htpump |

| HVAC HEAT PUMPS - | HERS VERIFICATION | | | es contract of | | *** | | |
|-----------------------------------|-------------------|----------------|--------------|----------------|--------------------------------|---------------|----------------------------|----------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 98 | 09 |
| Name | Verified Airflow | Airflow Target | Verified EER | Verified SEER | Verified Refrigerant Charge | Verified HSPF | Verified Heating Cap 47 | Verified Heating Cap 17 |
| Heat Pump System 1-hers-htpump | Not Required | 0 | Required | Not Required | Yes | Yes | Yes | Yes |

| VARIABLE CAPACITY HEAT PUMP | COMPLIANCE OPTI | ON - HERS VERIF | CATION | | | | | | |
|-----------------------------|--|----------------------------------|---|--------------------------|------------------------------------|--------------|--|------------------------------------|---|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
| Name | Certified Low-Static VCHP System | Airflow to Habitable Rooms | Ductless Units in Conditioned Space | Wali Mount Thermostat | Air Filter Sizing & Drop Rating | Ducts in | Minimum Airflow per RA3.3 and SC3.3.3.4.1 | Certified non-continuous Fan | Indoor Fan not Running Continuously |
| Heat Pump System 1 | Not required | Required | Required | Required | Not required | Not required | Not required | Not required | Not required |

| DOCUMENTATION AUTHOR'S DECLARATION STATEMENT | |
|--|--|
| 1. I certify that this Certificate of Compliance documentation is accu | arate and complete. |
| Documentation Author Name: | Documentation Author Signature: |
| Atousa Yazdanfar | Atousa Yardanfar |
| Company: | Signature Date: |
| Energy Compliance Services | 2022-12-20 15:50:30 |
| Address: | CEA/ HERS Certification Identification (If applicable): |
| 5702 Hersholt Avenue | |
| City/State/Zip: | Phone: |
| Lakewood, CA 90712 | 562-461-3749 |
| RESPONSIBLE PERSON'S DECLARATION STATEMENT | |
| certify the following under penalty of perjury, under the laws of the State of | of California: |
| 1. I am eligible under Division 3 of the Business and Professions Co | ode to accept responsibility for the building design identified on this Certificate of Compliance. |

| 7 | to not with a trace person of person is the same of the same of continues. |
|---|--|
| | f am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance. |
| | I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. |
| | The huilding design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets. |

| Responsible Designer Name: Alan Sakimoto | Responsible Designer Signature: | Alan Sakimoto |
|--|----------------------------------|---------------|
| Company: Alan Sakimoto, Architect, Inc. | Date Signed: 2022-12-20 15:52:37 | |
| Address: 1441 W. 183rd Street | License: C-14338 | |
| City/State/Zip: Gardena, CA 90248 | Phone: 310-532-7108 | |

Digitally signed by CatCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.



Registration Number: 222-P010247214B-000-000-0000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance

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4.106.4.2.1 Electric vehicle charging space (EV space) locations. Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least one EV space

shall be located in the common use parking area and shall be available for use by all residents.

Y NIA RESPON. CHAPTER 3 **GREEN BUILDING SECTION 301 GENERAL** DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION 4.106.4.2.1.1 Electric Vehicle Charging Stations (EVCS) When EV chargers are installed, EV spaces **301.1 SCOPE.** Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the **EFFICIENCY** required by Section 4.106.2.2, item 3, shall comply with at least one of the following options: 4.303 INDOOR WATER USE application checklists and may be included in the design and construction of structures covered by this code, 1. The EV space shall be located adjacent to an accessible parking space meeting the 4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and requirements of the California Building Code, Chapter 11A, to allow use of the EV charger but are not required unless adopted by a city, county, or city and county as specified in Section 101.7. urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, from the accessible parking space. 2. The EV space shall be located on an accessible route, as defined in the California Building 301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the Code, Chapter 2, to the building. Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving building's conditioned area, volume, or size. The requirements shall apply only to and/or within the plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final Exception: Electric vehicle charging stations designed and constructed in compliance with the completion, certificate of occupancy, or final permit approval by the local building department. See Civil specific area of the addition or alteration. California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or buildings affected and other important enactment dates. improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate Note: Electric Vehicle charging stations serving public housing are required to comply with the California 4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1 flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and Specification for Tank-type Toilets. other important enactment dates. 4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. The EV space shall be designed to comply with the following Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush. 301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of 1. The minimum length of each EV space shall be 18 feet (5486 mm). individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential 2. The minimum width of each EV space shall be 9 feet (2743 mm). 4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. 3. One in every 25 EV spaces, but not less than one EV space, shall have an 8-foot (2438 mm) buildings, or both. Individual sections will be designated by banners to indicate where the section applies The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush. wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and minimum width of the EV space is 12 feet (3658 mm). high-rise buildings, no banner will be used. a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units 4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 **SECTION 302 MIXED OCCUPANCY BUILDINGS** horizontal (2.083 percent slope) in any direction. gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads. 302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy. 4.106.4.2.3 Single EV space required. Install a listed raceway capable of accommodating a 208/240-4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only bulk mixed (single stream). **ABBREVIATION DEFINITIONS:** cabinet, box or enclosure in close proximity to the proposed location of the EV space. Construction allow one shower outlet to be in operation at a time. Department of Housing and Community Development documents shall identify the raceway termination point. The service panel and/or subpanel shall provide California Building Standards Commission capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit Note: A hand-held shower shall be considered a showerhead. 4. Identify construction methods employed to reduce the amount of construction and demolition waste Division of the State Architect, Structural Safety installation of a branch circuit overcurrent protective device. OSHPD Office of Statewide Health Planning and Developmen 4.303.1.4 Faucets. 4.106.4.2.4 Multiple EV spaces required. Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents 4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall Additions and Alterations shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall electrical load calculations to verify that the electrical panel service capacity and electrical system, not be less than 0.8 gallons per minute at 20 psi including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory 40-ampere minimum branch circuit. Required raceways and related components that are planned to be faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the buildings shall not exceed 0.5 gallons per minute at 60 psi. RESIDENTIAL MANDATORY MEASURES 4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver DIVISION 4.1 PLANNING AND DESIGN 4.106.4.2.5 Identification. The service panel or subpanel circuit directory shall identify the overcurrent more than 0.2 gallons per cycle. protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code. 4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons **SECTION 4.102 DEFINITIONS** Section 4,408.1 per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not 4.102.1 DEFINITIONS to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per The following terms are defined in Chapter 2 (and are included here for reference) 4.106.4.3 New hotels and motels. All newly constructed hotels and motels shall provide EV spaces capable of supporting future installation of EVSE. The construction documents shall identify the location FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar of the EV spaces. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve pervious material used to collect or channel drainage or runoff water. WATTLES, Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials 4.303.2 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures and fittings shall be installed such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also 1. Construction documents are intended to demonstrate the project's capability and capacity in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table used for perimeter and inlet controls or facilitating future EV charging. 1701.1 of the California Plumbing Code. 2. There is no requirement for EV spaces to be constructed or available until EV chargers 4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes. **4.106.4.3.1 Number of required EV spaces.** The number of required EV spaces shall be based THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND management of storm water drainage and erosion controls shall comply with this section. on the total number of parking spaces provided for all types of parking facilities in accordance with IS INCLUDED AS A CONVENIENCE FOR THE USER. Table 4.106.4.3.1. Calculations for the required number of EV spaces shall be rounded up to the 4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre TABLE - MAXIMUM FIXTURE WATER USE or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent TABLE 4.106,4.3.1 FIXTURE TYPE FLOW RATE disc, web-based reference or other media acceptable to the enforcing agency which includes all of the property, prevent erosion and retain soil runoff on the site. following shall be placed in the building: SHOWER HEADS 1.8 GMP @ 80 PSI Retention basins of sufficient size shall be utilized to retain storm water on the site. SPACES RESIDENTIAL) 2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar life cycle of the structure. disposal method, water shall be filtered by use of a barrier system, wattle or other method approved LAVATORY FAUCETS MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI (RESIDENTIAL) 3. Compliance with a lawfully enacted storm water management ordinance. 10-25 0.5 GPM @ 60 PSI Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or COMMON & PUBLIC USE AREAS are part of a larger common plan of development which in total disturbs one acre or more of soil. KITCHEN FAUCETS 1.8 GPM @ 60 PSI d. Landscape irrigation systems. (Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html) METERING FAUCETS 0.2 GAL/CYCLE e. Water reuse systems. 51-75 4 4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will WATER CLOSET 1.28 GAL/FLUSH 76-100 manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface URINALS 0.125 GAL/FLUSH water include, but are not limited to, the following: 101-150 151-200 10 Water collection and disposal systems 6 percent of total 3. French drains 201 and over 4.304 OUTDOOR WATER USE Water retention gardens 4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with 5. Other water measures which keep surface water away from buildings and aid in groundwater a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water 4.106.4.3.2 Electric vehicle charging space (EV space) dimensions. The EV spaces shall be designed to Efficient Landscape Ordinance (MWELO), whichever is more stringent. painting, grading around the building, etc. **Exception**: Additions and alterations not altering the drainage path. 1. The minimum length of each EV space shall be 18 feet (5486mm). **4.106.4 Electric vehicle (EV) charging for new construction.** New construction shall comply with Sections 4.106.4.1, 4.106.4.2, or 4.106.4.3 to facilitate future installation and use of EV chargers. Electric vehicle supply 2. The minimum width of each EV space shall be 9 feet (2743mm) 1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code Regulations, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625. 4.106.4.3.3 Single EV space required. When a single EV space is required, the EV space shall be designed 4.106.4.3.4 Multiple EV spaces required. When multiple EV spaces are required, the EV spaces shall be 1. On a case-by-case basis, where the local enforcing agency has determined EV charging and designed in accordance with Section 4.106.4.2.4. nfrastructure are not feasible based upon one or more of the following conditions: 1.1 Where there is no commercial power supply. 4.106.4.3.5 Identification. The service panels or sub-panels shall be identified in accordance with Section 1.2 Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than \$400.00 per 4.106.4.3.6 Accessible EV spaces. In addition to the requirements in Section 4.106.4.3, EV spaces for 2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for the EV charging stations in the California Building Code, Chapter 11B. 4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway **SECTION 4.501 GENERAL** DIVISION 4.2 ENERGY EFFICIENCY shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or 4.201.1 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere Commission will continue to adopt mandatory standards. minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device. 5.102.1 DEFINITIONS 4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination ocation shall be permanently and visibly marked as "EV CAPABLE". 4.106.4.2 New multifamily dwellings. If residential parking is available, ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number. 1. Construction documents are intended to demonstrate the project's capability and capacity for 2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE 2016 CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE 4.486.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING 4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste

- Excavated soil and land-clearing debris. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably
- The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.

- identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale. 2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or
- 3. Identify diversion facilities where the construction and demolition waste material collected will be
- generated.

 Specify that the amount of construction and demolition waste materials diverted shall be calculated

4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.

Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.

1.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in

4,408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction

1.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, Items 1 through 5, Section 4.408.3 or Section 4.408.4...

- 1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CAL.Green.html may be used to assist in documenting compliance with this section.
- 2. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

4.410 BUILDING MAINTENANCE AND OPERATION 4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compact

1. Directions to the owner or occupant that the manual shall remain with the building throughout the

2. Operation and maintenance instructions for the following:

a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major

appliances and equipment. b. Roof and yard drainage, including gutters and downspouts.

c. Space conditioning systems, including condensers and air filters.

Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.

4. Public transportation and/or carpool options available in the area. 5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent

and what methods an occupant may use to maintain the relative humidity level in that range. 6. Information about water-conserving landscape and irrigation design and controllers which conserve

7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5

feet away from the foundation 8. Information on required routine maintenance measures, including, but not limited to, caulking,

Information about state solar energy and incentive programs available.

10. A copy of all special inspections verifications required by the enforcing agency or this code.

4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of

DIVISION 4.5 ENVIRONMENTAL QUALITY

The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous, irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors.

JOB NUMBER

SECTION 4.502 DEFINITIONS

The following terms are defined in Chapter 2 (and are included here for reference)

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and

medium density fiberboard, "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section

DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2020, Includes August 2019 Supplement)

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood. PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging). Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a). REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to VOC. A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a). 4.503.1 GENERAL. Any installed gas fireplace shall be a direct-vent sealed-combustion type: Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances. 4.504 POLLUTANT CONTROL
4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION. At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of water, dust or debris which may enter the system. 4.504.2 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with this section. 4.504.2.1 Adhesives, Sealants and Caulies. Adhesives, sealant and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply: 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trictorgethylene), except for aerosol products, as specified in Subsection 2 below. 2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with section 94507.

4.504.2.2 Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in

4.504.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation

4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification. 2. Field verification of on-site product containers.

| TABLE 4.504.1 - ADHESIVE VOC LIM | NT _{1,2} |
|--|-------------------|
| Less Water and Less Exempt Compounds in Gran | ns per Liter) |
| ARCHITECTURAL APPLICATIONS | VOC LIMIT |
| NDOOR CARPET ADHESIVES | 50 |
| CARPET PAD ADHESIVES | 50 |
| OUTDOOR CARPET ADHESIVES | 150 |
| WOOD FLOORING ADHESIVES | 100 |
| RUBBER FLOOR ADHESIVES | 60 |
| SUBFLOOR ADHESIVES | 50 |
| CERAMIC TILE ADHESIVES | 65 |
| VCT & ASPHALT TILE ADHESIVES | 50 |
| DRYWALL & PANEL ADHESIVES | 50 |
| COVE BASE ADHESIVES | 50 |
| MULTIPURPOSE CONSTRUCTION ADHESIVE | 70 |
| STRUCTURAL GLAZING ADHESIVES | 100 |
| SINGLE-PLY ROOF MEMBRANE ADHESIVES | 250 |
| OTHER ADHESIVES NOT LISTED | 50 |
| SPECIALTY APPLICATIONS | , |
| PVC WELDING | 510 |
| CPVC WELDING | 490 |
| ABS WELDING | 325 |
| PLASTIC CEMENT WELDING | 250 |
| ADHESIVE PRIMER FOR PLASTIC | 550 |
| CONTACT ADHESIVE | 80 |
| SPECIAL PURPOSE CONTACT ADHESIVE | 250 |
| STRUCTURAL WOOD MEMBER ADHESIVE | 140 |
| TOP & TRIM ADHESIVE | 250 |
| SUBSTRATE SPECIFIC APPLICATIONS | _ |
| METAL TO METAL | 30 |
| PLASTIC FOAMS | . 50 |
| POROUS MATERIAL (EXCEPT WOOD) | 50 |
| WOOD | 30 |
| FIBERGLASS | 80 |

^{1.} IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER. THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

| (Less Water and Less Exempt Compounds in Grams per Liter) | | |
|---|-----------|--|
| SEALANTS | VOC LIMIT | |
| ARCHITECTURAL | 250 | |
| MARINE DECK | 760 | |
| NONMEMBRANE ROOF | 300 | |
| ROADWAY | 250 | |
| SINGLE-PLY ROOF MEMBRANE | 450 | |
| OTHER | 420 | |
| SEALANT PRIMERS | | |
| ARCHITECTURAL | | |
| NON-POROUS | 250 | |
| POROUS | 775 | |
| MODIFIED BITUMINOUS | 500 | |
| MARINE DECK | 760 | |
| OTHER | 750 | |

TABLE 4.504.3 - VOC CONTENT LIMITS FOR

GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT

VOC LIMIT

ARCHITECTURAL COATINGS23

COMPOUNDS

FLAT COATINGS

COATING CATEGORY

| NON-FLAT COATINGS | 100 |
|---|-----|
| NONFLAT-HIGH GLOSS COATINGS | 150 |
| SPECIALTY COATINGS | |
| ALUMINUM ROOF COATINGS | 400 |
| BASEMENT SPECIALTY COATINGS | 400 |
| BITUMINOUS ROOF COATINGS | 50 |
| BITUMINOUS ROOF PRIMERS | 350 |
| BOND BREAKERS | 350 |
| CONCRETE CURING COMPOUNDS | 350 |
| CONCRETE/MASONRY SEALERS | 100 |
| DRIVEWAY SEALERS | 50 |
| DRY FOG COATINGS | 150 |
| FAUX FINISHING COATINGS | 350 |
| FIRE RESISTIVE COATINGS | 350 |
| FLOOR COATINGS | 100 |
| FORM-RELEASE COMPOUNDS | 250 |
| GRAPHIC ARTS COATINGS (SIGN PAINTS) | 500 |
| HIGH TEMPERATURE COATINGS | 420 |
| INDUSTRIAL MAINTENANCE COATINGS | 250 |
| LOW SOLIDS COATINGS1 | 120 |
| MAGNESITE CEMENT COATINGS | 450 |
| MASTIC TEXTURE COATINGS | 100 |
| METALLIC PIGMENTED COATINGS | 500 |
| MULTICOLOR COATINGS | 250 |
| PRETREATMENT WASH PRIMERS | 420 |
| PRIMERS, SEALERS, & UNDERCOATERS | 100 |
| REACTIVE PENETRATING SEALERS | 350 |
| RECYCLED COATINGS | 250 |
| ROOF COATINGS | 50 |
| RUST PREVENTATIVE COATINGS | 250 |
| SHELLACS | |
| CLEAR | 730 |
| OPAQUE | 550 |
| SPECIALTY PRIMERS, SEALERS & UNDERCOATERS | 100 |
| STAINS | 250 |
| STONE CONSOLIDANTS | 450 |
| SWIMMING POOL COATINGS | 340 |
| TRAFFIC MARKING COATINGS | 100 |
| TUB & TILE REFINISH COATINGS | 420 |
| WATERPROOFING MEMBRANES | 250 |
| WOOD COATINGS | 275 |
| WOOD PRESERVATIVES | 350 |
| ZINC-RICH PRIMERS | 340 |

 GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS 2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.

3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

| TABLE 4.504.5 - FORMALDEHYDE L | IMITS ₁ |
|---------------------------------------|--------------------|
| MAXIMUM FORMALDEHYDE EMISSIONS IN PAI | RTS PER MILLION |
| PRODUCT | CURRENT LIMIT |
| HARDWOOD PLYWOOD VENEER CORE | 0.05 |
| HARDWOOD PLYWOOD COMPOSITE CORE | 0.05 |
| PARTICLE BOARD | 0.09 |
| MEDIUM DENSITY FIBERBOARD | 0.11 |
| THIN MEDIUM DENSITY FIBERBOARD2 | 0.13 |

BY THE CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued) 4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the testing and product

- . Carpet and Rug Institute's Green Label Plus Program.
- 2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1, February 2010 (also known as Specification 01350). 3. NSF/ANSI 140 at the Gold level.
- 4. Scientific Certifications Systems Indoor AdvantageTM Gold.

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.

4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.

4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed, at least 80% of floor area receiving resilient flooring shall comply with one or more of the following:

- 1. Products compliant with the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350), certified as a CHPS Low-Emitting Material
- in the Collaborative for High Performance Schools (CHPS) High Performance Products Datebase. 2. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children & Schools program). Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.
- 4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350).

4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5

4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

- Product certifications and specifications.
- 2. Chain of custody certifications. 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.).
- 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325 standards. Other methods acceptable to the enforcing agency.

4.505 INTERIOR MOISTURE CONTROL

4.505.1 General. Buildings shall meet or exceed the provisions of the California Building Standards Code.

4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.

4.505,2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the

- 1. A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute,
- Other equivalent methods approved by the enforcing agency. 3. A slab design specified by a licensed design professional.

4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

- 1. Moisture content shall be determined with either a probe-type or contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
- 2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece verified. 3. At least three random moisture readings shall be performed on wall and floor framing with documentation

acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall orfloor cavities. Wet-applied insulation products shall follow the manufacturers' drying

4.506 INDOOR AIR QUALITY AND EXHAUST

4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the

- 1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building. 2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a
- a. Humidity controls shall be capable of adjustment between a relative humidity range less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of
- b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)

DISCLAIMER: THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE 2016 CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.

- 1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or
- 2. Lighting integral to bathroom exhaust fans shall comply with the California Energy Code.

4.507 ENVIRONMENTAL COMFORT 4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods:

- 1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
- Duct systems are sized according to ANSI/ACCA 1 Manual D 2014 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
- 3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S 2014 (Residential Equipment Selection), or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the system functions are

INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

702 QUALIFICATIONS

702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper instellation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

- 2. Public utility training programs. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations,
- 4. Programs sponsored by manufacturing organizations. 5. Other programs acceptable to the enforcing agency.

702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:

- Certification by a national or regional green building program or standard publisher. 2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building
- performance contractors, and home energy auditors. 3. Successful completion of a third party apprentice training program in the appropriate trade.
- 4. Other programs acceptable to the enforcing agency.

1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

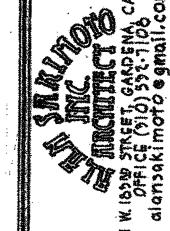
2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

[BSC] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

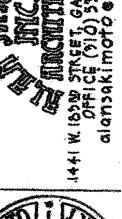
703 VERIFICATIONS

703.1 DOCUMENTATION. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified applicable checklist.



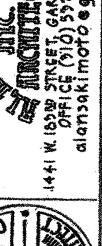


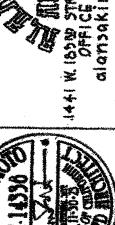


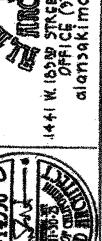






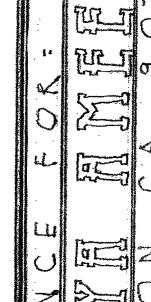


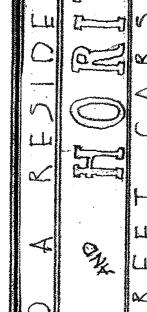




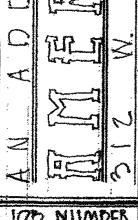




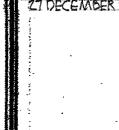






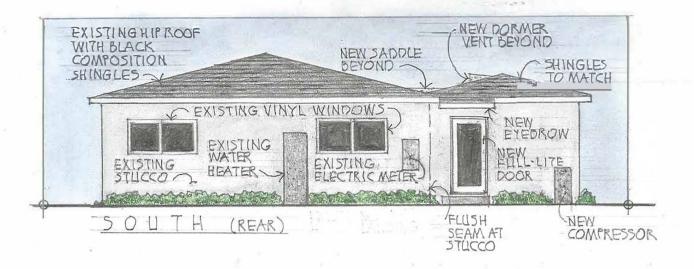


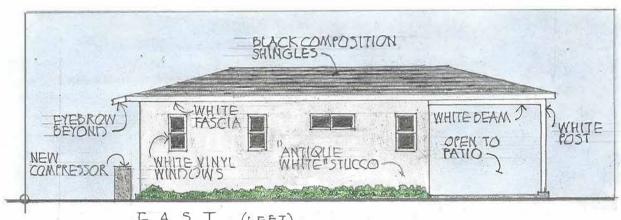




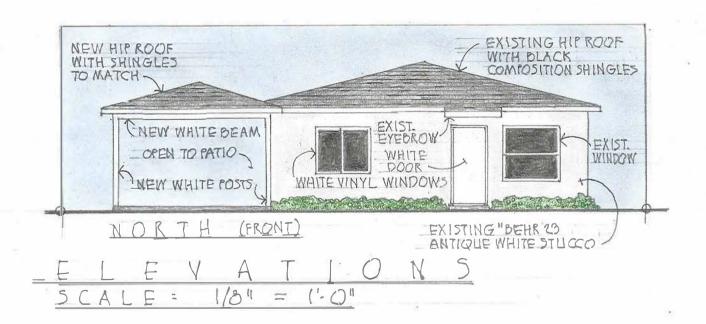


^{2.} FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.





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W. 220TH STREET, CARSON, CA. 90745