

SECTION 5.407
WATER RESISTANCE AND
MOISTURE MANAGEMENT

5.407.1 WEATHER PROTECTION. PROVIDE A WEATHER-RESISTANT EXTERIOR WALL AND FOUNDATION ENVELOPE AS REQUIRED BY CALIFORNIA BUILDING CODE SECTION 1403.2 (WEATHER PROTECTION) AND CALIFORNIA ENERGY CODE SECTION 150, (MANDATORY FEATURES AND DEVICES), MANUFACTURER'S INSTALLATION INSTRUCTIONS OR LOCAL ORDINANCE, WHICHEVER IS MORE STRINGENT.

5.407.2 MOISTURE CONTROL. EMPLOY MOISTURE CONTROL MEASURES BY THE FOLLOWING METHODS:

5.407.2.1 SPRINKLERS. DESIGN AND MAINTAIN LANDSCAPE IRRIGATION SYSTEMS TO PREVENT SPRAY ON STRUCTURES.

5.407.2.2 ENTRIES AND OPENINGS. DESIGN EXTERIOR ENTRIES AND/OR OPENINGS SUBJECT TO FOOT TRAFFIC OR WIND-DRIVEN RAIN TO PREVENT WATER INTRUSION INTO BUILDINGS.

NOTES:

1. USE FEATURES SUCH AS OVERHANGS AND RECESSES, AND FLASHINGS INTEGRATED WITH A DRAINAGE PLANE.

2. USE NONABSORBENT FLOOR AND WALL FINISHES WITHIN AT LEAST TWO FEET AROUND AND PERPENDICULAR TO SUCH OPENINGS.

SECTION 5.408
CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

5.408.1 CONSTRUCTION WASTE DIVERSION. ESTABLISH A CONSTRUCTION WASTE MANAGEMENT PLAN FOR THE DIVERTED MATERIALS, OR MEET LOCAL CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE, WHICHEVER IS MORE STRINGENT.

5.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. WHERE A LOCAL JURISDICTION DOES NOT HAVE A CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE, SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN FOR APPROVAL BY THE ENFORCEMENT AGENCY THAT:

1. IDENTIFIES THE MATERIALS TO BE DIVERTED FROM DISPOSAL BY EFFICIENT USAGE, RECYCLING, REUSE ON THE PROJECT OR SALVAGE FOR FUTURE USE OR SALE.

2. DETERMINES IF MATERIALS WILL BE SORTED ON-SITE OR MIXED.

3. IDENTIFIES DIVERSION FACILITIES WHERE MATERIAL COLLECTED WILL BE TAKEN.

4. SPECIFIES THAT THE AMOUNT OF MATERIALS DIVERTED SHALL BE CALCULATED BY WEIGHT OR VOLUME, BUT NOT BY BOTH.

5.408.2.1 DOCUMENTATION. DOCUMENTATION SHALL BE PROVIDED TO THE ENFORCING AGENCY WHICH DEMONSTRATES COMPLIANCE WITH SECTION 5.408.2, ITEMS 1 THRU 4. THE WASTE MANAGEMENT PLAN SHALL BE UPDATED AS NECESSARY AND SHALL BE ACCESSIBLE DURING CONSTRUCTION FOR EXAMINATION BY THE ENFORCING AGENCY.

EXCEPTION: [DSA-SS] JOBSITES IN AREAS WHERE THERE IS NO MIXED CONSTRUCTION AND DEMOLITION DEBRIS (C&D) PROCESSOR OR RECYCLING FACILITIES WITHIN A FEASIBLE HAUL DISTANCE SHALL MEET THE REQUIREMENTS AS FOLLOWS:

1. THE ENFORCEMENT AGENCY HAVING JURISDICTION SHALL AT ITS DISCRETION, ENFORCE THE WASTE MANAGEMENT PLAN AND MAKE EXCEPTIONS AS DEEMED NECESSARY.

5.408.2.2 ISOLATED JOBSITES. THE ENFORCING AGENCY MAY MAKE EXCEPTIONS TO THE REQUIREMENTS OF THIS SECTION WHEN JOBSITES ARE LOCATED IN AREAS BEYOND THE HAUL BOUNDARIES THE DIVERSION FACILITY.

NOTES:

1. SAMPLE FORMS FOUND IN CHAPTER 8 MAY BE USED TO ASSIST IN DOCUMENTING COMPLIANCE WITH THE WASTE MANAGEMENT PLAN.

2. MIXED CONSTRUCTION AND DEMOLITION DEBRIS (C&D) PROCESSORS CAN BE LOCATED AT THE CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY (CALRECYCLE).

5.408.3 CONSTRUCTION WASTE REDUCTION OF AT LEAST 50 PERCENT. RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 50 PERCENT THE NON-HAZARDOUS CONSTRUCTION AND DEMOLITION DEBRIS, OR MEET A LOCAL CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE, WHICHEVER IS MORE STRINGENT. CALCULATE THE AMOUNT MATERIALS DIVERTED BY WEIGHT OR VOLUME, BUT NOT BY BOTH.

EXCEPTIONS:

1. EXCAVATED SOIL AND LAND-CLEARING DEBRIS

2. ALTERNATE WASTE REDUCTION METHODS DEVELOPED BY WORKING WITH LOCAL AGENCIES IF DIVERSION OR RECYCLE FACILITIES CAPABLE OF COMPLIANCE WITH THIS ITEM DO NOT EXIST.

5.408.4 EXCAVATED SOIL AND LAND CLEARING DEBRIS. 100 PERCENT OF TREES, STUMPS, ROCKS AND ASSOCIATED VEGETATION AND SOILS RESULTING PRIMARILY FROM LAND CLEARING SHALL BE REUSED OR RECYCLED. FOR A PHASED PROJECT, SUCH MATERIAL MAY BE STOCKPILED ON SITE UNTIL THE STORAGE SITE IS DEVELOPED.

SECTION 5.410
BUILDING MAINTENANCE AND OPERATION

5.410.1 RECYCLING BY OCCUPANTS. PROVIDE READILY ACCESSIBLE AREAS THAT SERVE THE ENTIRE BUILDING AND ARE IDENTIFIED FOR THE DEPOSITING, STORAGE AND COLLECTION OF NON-HAZARDOUS MATERIALS FOR RECYCLING, INCLUDING (AT A MINIMUM) PAPER, CORRUGATED CARDBOARD, GLASS, PLASTICS AND METALS.

5.410.1.1 SAMPLE ORDINANCE. SPACE ALLOCATION FOR RECYCLING AREAS SHALL COMPLY WITH CHAPTER 18, PART 3, DIVISION 30 OF THE PUBLIC RESOURCES CODE. CHAPTER 18 IS KNOWN AS THE CALIFORNIA SOLID WASTE REUSE AND RECYCLING ACCESS ACT OF 1991 (ACT).

NOTE: A SAMPLE ORDINANCE FOR USE BY LOCAL AGENCIES MAY BE FOUND IN APPENDIX A OF THE DOCUMENT AT THE CALRECYCLE'S WEB SITE.

5.410.2 COMMISSIONING. FOR NEW BUILDINGS 10,000 SQUARE FEET AND OVER, BUILDING COMMISSIONING SHALL BE INCLUDED IN THE DESIGN AND CONSTRUCTION PROCESSES OF THE BUILDING PROJECT TO VERIFY THAT THE BUILDING SYSTEMS AND COMPONENTS MEET THE OWNER'S OR OWNER REPRESENTATIVE'S PROJECT REQUIREMENTS. COMMISSIONING SHALL BE PERFORMED IN ACCORDANCE WITH THIS SECTION BY TRAINED PERSONNEL WITH EXPERIENCE ON PROJECTS OF COMPARABLE SIZE AND COMPLEXITY. COMMISSIONING REQUIREMENTS SHALL INCLUDE:

1. OWNER'S OR OWNER REPRESENTATIVE'S PROJECT REQUIREMENTS
2. BASIS OF DESIGN
3. COMMISSIONING MEASURES SHOWN IN THE CONSTRUCTION DOCUMENTS
4. COMMISSIONING PLAN
5. FUNCTIONAL PERFORMANCE TESTING
6. DOCUMENTATION AND TRAINING
7. COMMISSIONING REPORT

ALL BUILDING SYSTEMS AND COMPONENTS COVERED BY TITLE 24, PART 6, AS WELL AS PROCESS EQUIPMENT AND CONTROLS, AND RENEWABLE ENERGY SYSTEMS SHALL BE INCLUDED IN THE SCOPE OF THE COMMISSIONING REQUIREMENTS.

5.410.2.1 OWNER'S OR OWNER REPRESENTATIVE'S PROJECT REQUIREMENTS (OPR). THE EXPECTATIONS AND REQUIREMENTS OF THE BUILDING APPROPRIATE TO ITS PHASE SHALL BE DOCUMENTED BEFORE THE DESIGN PHASE OF THE PROJECT BEGINS. THIS DOCUMENTATION SHALL INCLUDE THE FOLLOWING:

1. ENVIRONMENTAL AND SUSTAINABILITY GOALS
2. ENERGY EFFICIENCY GOALS
3. INDOOR ENVIRONMENTAL QUALITY REQUIREMENTS
4. PROJECT PROGRAM, INCLUDING FACILITY FUNCTIONS AND HOURS OF OPERATION, AND NEED FOR AFTER HOURS OPERATION
5. EQUIPMENT AND SYSTEMS EXPECTATIONS
6. BUILDING OCCUPANT AND OPERATION AND MAINTENANCE (O&M) PERSONNEL EXPECTATIONS

5.410.2.2 BASIS OF DESIGN (BOD). A WRITTEN EXPLANATION OF HOW THE DESIGN OF THE BUILDING SYSTEMS MEETS THE OPR SHALL BE COMPLETED AT THE DESIGN PHASE OF THE BUILDING PROJECT, AND UPDATED AS NECESSARY DURING THE DESIGN AND CONSTRUCTION PHASES. THE BASIS OF DESIGN DOCUMENT SHALL COVER THE FOLLOWING SYSTEMS:

1. HEATING, VENTILATION, AIR CONDITIONING (HV AC) SYSTEMS AND CONTROLS
2. INDOOR LIGHTING SYSTEM AND CONTROLS
3. WATER HEATING SYSTEM
4. RENEWABLE ENERGY SYSTEMS
5. LANDSCAPE IRRIGATION SYSTEMS
6. WATER REUSE SYSTEMS

5.410.2.3 COMMISSIONING PLAN. PRIOR TO PERMIT ISSUANCE A COMMISSIONING PLAN SHALL BE COMPLETED TO DOCUMENT HOW THE PROJECT WILL BE COMMISSIONED AND SHALL BE STARTED DURING THE DESIGN PHASE OF THE BUILDING PROJECT. THE COMMISSIONING PLAN SHALL INCLUDE THE FOLLOWING:

1. GENERAL PROJECT INFORMATION
2. COMMISSIONING GOALS
3. SYSTEMS TO BE COMMISSIONED. PLANS TO TEST SYSTEMS AND COMPONENTS SHALL INCLUDE:
 - A. AN EXPLANATION OF THE ORIGINAL DESIGN INTENT
 - B. EQUIPMENT AND SYSTEMS TO BE TESTED, INCLUDING THE EXTENT OF TESTS
 - C. FUNCTIONS TO BE TESTED
 - D. CONDITIONS UNDER WHICH THE TEST SHALL BE PERFORMED E. MEASURABLE CRITERIA FOR ACCEPTABLE PERFORMANCE
4. COMMISSIONING TEAM INFORMATION
5. COMMISSIONING PROCESS ACTIVITIES, SCHEDULES AND RESPONSIBILITIES. PLANS FOR THE COMPLETION OF COMMISSIONING REQUIREMENTS LISTED IN SECTIONS 5.410.2.4 THROUGH 5.410.2.6 SHALL BE INCLUDED

5.410.2.4 FUNCTIONAL PERFORMANCE TESTING. FUNCTIONAL PERFORMANCE TESTS SHALL DEMONSTRATE THE CORRECT INSTALLATION AND OPERATION OF EACH COMPONENT, SYSTEM AND SYSTEM-TO-SYSTEM INTERFACE IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. FUNCTIONAL PERFORMANCE TESTING REPORTS SHALL CONTAIN INFORMATION ADDRESSING EACH OF THE BUILDING COMPONENTS TESTED, THE TESTING METHODS UTILIZED, AND INCLUDE ANY READINGS AND ADJUSTMENTS MADE.

5.410.2.5 DOCUMENTATION AND TRAINING. A SYSTEMS MANUAL AND SYSTEMS OPERATIONS TRAINING ARE REQUIRED, INCLUDING OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) REQUIREMENTS IN CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 8, SECTION 5142, AND OTHER RELATED REGULATIONS.

5.410.2.5.1 SYSTEMS MANUAL. DOCUMENTATION OF THE OPERATIONAL ASPECTS OF THE BUILDING SHALL BE COMPLETED WITHIN THE SYSTEMS MANUAL AND DELIVERED TO THE BUILDING OWNER OR REPRESENTATIVE AND FACILITIES OPERATOR. THE SYSTEMS MANUAL SHALL INCLUDE THE FOLLOWING:

1. SITE INFORMATION, INCLUDING FACILITY DESCRIPTION, HISTORY AND CURRENT REQUIREMENTS

2. SITE CONTACT INFORMATION

3. BASIC OPERATIONS AND MAINTENANCE, INCLUDING GENERAL SITE OPERATING PROCEDURES, BASIC TROUBLESHOOTING, RECOMMENDED MAINTENANCE REQUIREMENTS, SITE EVENTS LOG

4. MAJOR SYSTEMS

5. SITE EQUIPMENT INVENTORY AND MAINTENANCE NOTES

6. A COPY OF ALL SPECIAL INSPECTION VERIFICATIONS REQUIRED BY THE ENFORCING AGENCY OR THIS CODE

7. OTHER RESOURCES AND DOCUMENTATION

5.410.2.5.2 SYSTEMS OPERATIONS TRAINING. THE TRAINING OF THE APPROPRIATE MAINTENANCE STAFF FOR EACH EQUIPMENT TYPE AND/OR SYSTEM SHALL BE DOCUMENTED IN THE COMMISSIONING REPORT AND SHALL INCLUDE THE FOLLOWING:

1. SYSTEM/EQUIPMENT OVERVIEW (WHAT IT IS, WHAT IT DOES AND WITH WHAT OTHER SYSTEMS AND/OR EQUIPMENT IT INTERFACES)

2. REVIEW AND DEMONSTRATION OF SERVICING/PREVENTIVE MAINTENANCE

3. REVIEW OF THE INFORMATION IN THE SYSTEMS MANUAL

4. REVIEW OF THE RECORD DRAWINGS ON THE SYSTEM/ EQUIPMENT

5.410.2.6 COMMISSIONING REPORT. A COMPLETE REPORT OF COMMISSIONING PROCESS ACTIVITIES UNDERTAKEN THROUGH THE DESIGN, CONSTRUCTION AND REPORTING RECOMMENDATIONS FOR POSTCONSTRUCTION PHASES OF THE BUILDING PROJECT SHALL BE COMPLETED AND PROVIDED TO THE OWNER OR REPRESENTATIVE.

5.410.4 TESTING AND ADJUSTING. TESTING AND ADJUSTING OF SYSTEMS SHALL BE REQUIRED FOR BUILDINGS LESS THAN 10,000 SQUARE FEET.

5.410.4.2 SYSTEMS. DEVELOP A WRITTEN PLAN OF PROCEDURES FOR TESTING AND ADJUSTING SYSTEMS. SYSTEMS TO BE INCLUDED FOR TESTING AND ADJUSTING SHALL INCLUDE AT A MINIMUM, AS APPLICABLE TO THE PROJECT:

1. HV AC SYSTEMS AND CONTROLS
2. INDOOR AND OUTDOOR LIGHTING AND CONTROLS
3. WATER HEATING SYSTEMS
4. RENEWABLE ENERGY SYSTEMS
5. LANDSCAPE IRRIGATION SYSTEMS
6. WATER REUSE

5.410.4.3 PROCEDURES. PERFORM TESTING AND ADJUSTING PROCEDURES IN ACCORDANCE WITH INDUSTRY BEST PRACTICES AND APPLICABLE STANDARDS ON EACH SYSTEM AS DETERMINED BY THE BUILDING OFFICIAL.

5.410.4.3.1 HVAC BALANCING. IN ADDITION TO TESTING AND ADJUSTING, BEFORE A NEW SPACE-CONDITIONING SYSTEM SERVING A BUILDING OR SPACE IS OPERATED FOR NORMAL USE, THE SYSTEM SHALL BE BALANCED IN ACCORDANCE WITH THE PROCEDURES DEFINED BY THE TESTING ADJUSTING AND BALANCING BUREAU NATIONAL STANDARDS; THE NATIONAL ENVIRONMENTAL BALANCING BUREAU PROCEDURAL STANDARDS; OR ASSOCIATED AIR BALANCE COUNCIL NATIONAL STANDARDS OR AS APPROVED BY THE BUILDING OFFICIAL.

5.410.4.4 REPORTING. AFTER COMPLETION OF TESTING, ADJUSTING AND BALANCING, PROVIDE A FINAL REPORT OF TESTING SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES.

5.410.4.5 OPERATION AND MAINTENANCE (O & M) MANUAL. PROVIDE THE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING AND MAINTENANCE INSTRUCTIONS AND COPIES OF GUARANTIES/WARRANTIES FOR EACH SYSTEM. O & M INSTRUCTIONS SHALL BE CONSISTENT WITH OSHA REQUIREMENTS IN CCR, TITLE 8, SECTION 5142, AND OTHER RELATED REGULATIONS.

5.410.4.5.1 INSPECTIONS AND REPORTS. INCLUDE A COPY OF ALL INSPECTION VERIFICATIONS AND REPORTS REQUIRED BY THE ENFORCING AGENCY.

SECTION 5.504
POLLUTANT CONTROL

5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust or debris which may collect in the system.

5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.4.

5.504.4.1 Adhesives, sealants and caulks. Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards:

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 Tables 5.504.4.1 and 5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), 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 one 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.

5.504.4.1 ADHESIVE VOC LIMIT
Less Water and Less Exempt Compounds in Grams Per Liter

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesive not specifically listed	50
SPECIALTYAPPLICATIONS	
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 and 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.

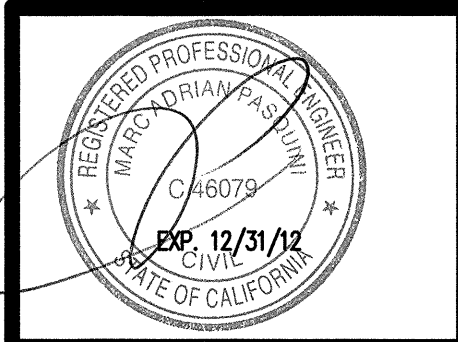
2. For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168, <http://www.arb.ca.gov/DRDB/SC/CURHTMLR1168.PDF>.



NO.	DATE

THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS A "WET STAMP & SIGNATURE" FROM BOTH THE ENGINEER OF RECORD AND A APPROVAL STAMP WITH A "WET STAMP & SIGNATURE" FROM THE LOCAL GOVERNING AGENCY ARE PRESENT.

DWG. BY	L.H.
CHK'D BY	
DATE	5-12-10
JOB NO.	0345
FILE NO.	034531



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