

EcoWise IPM Process for Structural Pest Management

Based on EcoWise Certified Standards dated 2/5/11

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EcoWise IPM Process for Structural Pest Management

INTRODUCTION

The *EcoWise IPM Process* is based on the *EcoWise Certified Standards for IPM Certification in Structural Pest Management*, a technical document that forms the core of the EcoWise Certified IPM certification program that began in January 2006 in the San Francisco Bay Area and greater Sacramento area. EcoWise Certified is a project of the Bio-Integral Resource Center (BIRC) and was founded in partnership with Association of Bay Area Governments (ABAG), the Natural Resources Defense Council (NRDC), and the Sacramento Stormwater Quality Partnership. See www.EcoWiseCertified.org for more information about the certification program and to read the full *Standards*. The *Standards* were developed by BIRC, in collaboration with industry, NGO and government stakeholders, under a grant funded by the California State Water Resources Control Board.

Note that the *EcoWise IPM Process* is written for structural IPM, which involves household pests, such as ants, cockroaches, rats, and mice, which cause problems inside and around structures. The IPM process for landscape pests is somewhat different in detail, although not in general concept.

What is the IPM Process?

This process has been written about widely, and in the integrated pest management community there exists a general consensus about what the process entails.

The IPM process (or IPM approach) is a series of continuous and interrelated steps that helps the pest manager decide how to deal with a pest problem. IPM is a decision-making process that guides pest managers toward efficient, effective, and sustainable pest management that emphasizes pest prevention and non-chemical methods.

The decision to apply treatments for a pest (whether educating building occupants, sealing entry holes, vacuuming up insects, or applying a pesticide) is made after a thorough inspection that gathers information about the pest and about the people and the structure involved. Treatment options are reviewed for appropriateness, and a variety of control strategies are integrated into a written plan of action. After the treatment is applied, the problem is monitored to determine success and if necessary, to fine-tune the treatment process. Records are kept throughout the process to document inspections, decisions, and outcomes.

Why a Written IPM Process?

Having a written IPM process makes communication between the IPM service provider and the customer easier, and prevents misunderstandings about expectations on both sides.



How to Use the *EcoWise IPM Process*

This document can be used in a number of ways:

- a. Pest control customers can use the *EcoWise IPM Process* to explain to a pest control company the kind of IPM service they want. A “customer” is anyone who wants to be sure they are getting IPM services rather than conventional pest control and could include public agencies, private businesses, hospitals, nursing homes, childcare centers, homeowner associations, or homeowners.
- b. Entities that solicit bids for pest control services can refer to the *EcoWise IPM Process* in RFP, RFQ, and contract documents to clarify the kind of service required by the entity.
- c. Public agencies that use in-house staff for structural pest control can use this document to clarify the IPM process for staff.
- d. IPM service providers can use the *EcoWise IPM Process* to explain their IPM service to customers and can use the language from this document in their service contracts.

Although this document was developed for California, it can be adapted for use in other states. Check the laws in your state that pertain to pesticide application, reporting, and licensing.

FUNDAMENTAL ELEMENTS OF IPM

Pest Prevention.

IPM seeks to suppress pest reproduction and to identify and eliminate potential pest access, shelter/habitat, and availability of food and water. In long-term accounts, regular, periodic monitoring for pests and pest conducive conditions is conducted in order to identify problem areas and prevent small infestations from becoming large ones.

Integrated pest management service providers use practices to prevent pests including, but not limited to:

- a. Customer education
- b. Removal of pest habitat, sources of food and water, and breeding areas
- c. Prevention of access to structures
- d. Management of environmental factors, such as temperature, light, humidity, atmosphere, and air circulation, to prevent pest reproduction and serve as a deterrent to pest infestation.

Integration of Multiple Management Strategies and Tools.

A variety of pest control strategies and tools are integrated into a comprehensive program to manage the pest.

Management strategies may include, but are not limited to, the following:

- a. Providing the customer with information about behaviors, conditions, and policies that allow pests access to the site, food, water, and habitat, so that the customer can understand and participate in the pest management process
- b. Mechanical or physical controls including, but not limited to, traps, vacuuming, steam cleaning, or physical barriers



- c. Horticultural controls including, but not limited to, changing irrigation practices, treatment or removal of plants attracting pests and/or providing access to structures
- d. Biological controls including the use of predators, parasitoids, or pathogens to control the pest.
- e. If preventive measures along with the practices in paragraphs 'a' through 'd' directly above are insufficient to prevent or control pests, chemical controls may be used.

An IPM Partnership Using a Systems Approach

Integrated pest management must take into account and be effectively coordinated with other relevant activities and programs that operate in and around a building. Whenever possible, a pest management perspective should be incorporated in procedures and plans involving cleaning, waste management, food service and handling, storage, repair and alteration, and design and construction. In order to accomplish this, the pest management service provider must form a partnership with the customer to provide education on pest management issues and to gain active cooperation.



THE ECOWISE IPM PROCESS

Establish a Partnership

After the IPM Service Provider is hired, the customer and the service provider must establish a partnership that facilitates communication, customer education, participation in problem solving, and feedback. The IPM service provider should take all opportunities to continue communication with the customer and to provide on-going education for the customer. For details on the roles of the customer and service provider in an IPM program, see page 11.

The Initial Inspection of the Property

After being hired, the IPM Service Provider must thoroughly inspect the customer's property to understand the existing problems.

1. **Record a history** of the pest problem(s) from the customer:
 - Types of key problem(s) and/or pest(s)
 - Location of problem(s) and/or pest(s)
 - Actions already taken by the customer (or prior service provider) and results
2. **Identify pest(s)**; if the pest is unfamiliar, research and understand the pest's biology and habits and how they impact management of the pest; keep a specimen for reference because mis-identification can result in wasted and ineffective treatments.
3. **Prepare a written list/map** of
 - Key pest(s) and locations
 - Number of pests, extent of problem, and/or amount of damage
 - Conditions conducive to pest infestations
 - Habitat modifications required
 - Pest-proofing/repairs needed inside and outdoors

Discuss Findings and Management Strategies with the Customer

1. **Discuss pests and conducive conditions**, their locations, and severity.
2. **Discuss management strategies with the customer and discuss the partnership** that will be necessary to solve the problems.
 - Discuss the responsibilities of the IPM service provider and the responsibilities of the customer.
 - Discuss pest tolerance levels and the action levels that trigger treatment; if appropriate, discuss how policy, regulations, aesthetics, budgets, and public health may affect tolerance levels.
 - Discuss options for management and the Service Provider's recommended treatment strategies.
 - Discuss the possible outcomes (if known) of the treatment methods, how long they might take to impact the pest, what to expect, estimated cost.



Develop a Written IPM Plan

This is a general IPM Plan for the customer's property and should include the following:

- The customer's management objectives, including action levels that trigger the initiation of treatment
- The process that will be used to communicate between the service provider and the customer
- A list of the records to be kept by the service provider
- The spheres of responsibility in the pest management process for both the customer and the service provider
- A list of the current pests and a list of the potential pests for the property
- The proposed methods for monitoring and detection of pests
- A list of the non-chemical and chemical tools that might be used on the customer's property, along with the pesticide labels and Material Safety Data Sheets (MSDS)
- The service schedule (monitoring schedule) for each building or site
- Descriptions of any structural or operational changes needed at each building to facilitate pest control and prevent problems
- IPM strategies for specific pests when their numbers reach the action level

The strategies for specific pests should

1. Focus on solving problems using prevention, other long-term solutions, and lowest risk strategies and products
 - Treatment strategies should be chosen to be appropriate to the pest and the site and should limit availability of food and habitat, reduce pest reproduction, limit pest access to the structure, and directly suppress the pest.
 - Treatments should include an appropriate mix of customer education, habitat modification, physical/mechanical controls, horticultural controls, biological controls, and when necessary, appropriate chemical controls.
 - Bait formulations, traps, vacuuming, sanitation, and exclusion techniques should be emphasized for insect control inside buildings.
 - Traps, sanitation, and exclusion techniques should be emphasized for rodent control. Rodenticides should only be used in emergency situations.
 - Exclusion techniques should be emphasized for bird control.
 - Pesticide application should be according to need and when pests are actually present, rather than by schedule. Pesticides should be used only if adequate control cannot be achieved with alternative types of treatment.
 - Pesticide use should adhere to the guidelines below in "Applying Pesticides".
2. Use monitoring to evaluate and fine-tune the treatment process.



Establish Regular Service (Monitoring) Visits

The frequency of the regular service visit should be appropriate to the site. Areas with kitchens or other facilities for food preparation or service should be visited most frequently. Areas with good sanitation and little or no history of pest problems can be visited less frequently. The service visit should at minimum cover the following:

- An evaluation of the success of any previous actions taken by the customer and the IPM service provider
- A check of problem areas
- An inspection for new problems
- Communication to update the customer
- Assessment of customer's satisfaction with treatment/service

Maintain Written Records of the Pest Management Process

- Inspection records
- Non-chemical treatment records
- Pesticide use records
- Records of innovations that assist in pest management

APPLYING PESTICIDES, if warranted

The primary methods of pest management in an IPM program are non-chemical strategies such as sanitation, harborage reduction, and physical, mechanical, cultural, and biological controls. If these strategies are deemed insufficient or unsatisfactory or are not economically viable, chemical control strategies may also be warranted.

In that case, the following guidelines apply (note that these were developed for use in California):

1. **All pesticides shall be applied according to the label and in compliance with U.S. Federal and California State Laws and Regulations**, including acquiring and maintaining the proper licenses and meeting pesticide reporting requirements.
2. **Pesticides shall meet the EcoWise Certified Pesticide Criteria**, or be exempted by the IPM Coordinator. The IPM Coordinator may exempt pesticides that do not meet EcoWise Certified criteria if the formulation is 1) contained within a bait station, 2) applied in a manner in which there is reasonable certainty of no human or other non-target exposure, or 3) applied in a manner in which contact with surface or groundwater is unlikely.
3. **Pesticides shall be applied according to need and not by calendar schedule.** (Note: this does not in any way preclude monitoring or other interactions with the customer that may occur on a regular, calendar basis.)
4. **Pesticides shall be applied in such a way as to minimize risk** to non-target organisms and the environment, including water quality:
 - a. When a pesticide is necessary, it shall be applied with a precise application technique, in the smallest area, using the minimum quantity of pesticide necessary to achieve control. A pesticide shall only be applied



- i. As a directed treatment to a void or other inaccessible area, or to other areas humans would not normally contact;
 - ii. As a spot treatment outdoors;
 - iii. As a spot treatment indoors, if the pesticide product used is exempt from registration in California {(3 CCR 6147) Title 3 (FAC), Division 6, Chapter 2, Section 6147. Exempted Pesticide Products.} This includes products that meet the above regulation but are registered nevertheless. The above California regulation is more stringent than the U.S. EPA FIFRA 25(b) list;
 - iv. Contained in a bait station; or
 - v. As a crack and crevice treatment.
- b. Perimeter spray treatments around the outside of structures are prohibited. The only exception to this is if the pesticide product used is exempt from registration in California {(3 CCR 6147) Title 3 (FAC), Division 6, Chapter 2, Section 6147. Exempted Pesticide Products}. This includes products that meet the above regulation but are registered nevertheless. The above California regulation is more stringent than the U.S. EPA FIFRA 25(b) list.
- c. Pesticides shall be applied under safe conditions. An applicator, prior to and while applying a pesticide, shall evaluate the equipment to be used, meteorological conditions (including predicted rainfall), the property to be treated (including irrigation and sprinkler systems) and the surrounding properties to determine the likelihood of harm or damage to non-targets. Notwithstanding that substantial drift will be prevented, no pesticide application shall be made or continued when
- i. There is a reasonable possibility of contaminating bodies or clothing of persons not involved in the application process; or
 - ii. There is a reasonable possibility of damage to, or contamination of, non-target plants, animals, or other public or private property, including water running off or running near a treated area.
- d. Fogging with pesticides in the interior of structures is prohibited where humans live or work. Note that the point-source application of insect growth regulators is not categorized as fogging.
- e. Rodenticides are only allowed in secure bait stations. If rodenticides are necessary, they shall be placed in tamper-resistant bait stations that are anchored to the substrate *except* when used for baiting in secure or locked areas, inaccessible voids, or sewer lines.

ECOWISE CERTIFIED PESTICIDE SELECTION CRITERIA

Only active ingredients are screened for most risk categories because the identities of inert ingredients in the formulation are often not available. The exception is acute toxicity, where the EPA requires that the full formulation be tested for lethal effects in animals, usually rats. The testing determines the single dose required to cause death in test animals via ingestion, inhalation, and skin absorption. The testing also evaluates the degree of skin and eye irritation or damage. Results are then classified as Category I - Danger, Category II - Warning, and Category III - Caution. The highest hazard and greatest mammalian toxicity is associated with Category I.



I. Products Applied Inside Structures

Restrictions:

1. No US EPA Acute Toxicity Categories I & II
No EPA Category I (Danger) or Category II (Warning) pesticides are allowed. If a pesticide is used that is exempt from registration by EPA, it must not exceed criteria for Category I or II for acute oral, dermal, or inhalation toxicity and skin or eye sensitivity.
2. No Carcinogens
No pesticides with active ingredients classified as known, probable, likely, or possible carcinogens by
 - a. US EPA: <http://www.epa.gov/pesticides/carlist/>
 - b. The International Agency for Research on Cancer (IARC): <http://monographs.iarc.fr/ENG/Classification/index.php>
 - c. The National Toxicology Program (NTP): <http://ntp.niehs.nih.gov/?objectid=72016262-BDB7-CEBA-FA60E922B18C2540>
 - d. The California Proposition 65 List: http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html
3. No Reproductive or Developmental Toxins
No pesticides with active ingredients listed as reproductive or developmental toxins on
 - a. The Material Safety Data Sheet (MSDS) for the product
 - b. The California Proposition 65 List: http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html
4. No Pesticides Containing Cholinesterase Inhibitors (organophosphate pesticides such as chlorpyrifos, diazinon, malathion)
5. Endocrine Disruptors: The EPA has begun an Endocrine Disruptor Screening Program, and as the Agency provides data on various chemicals, EcoWise will add that information to our screening criteria. Chemicals that show evidence of endocrine disruption will not be allowed in an EcoWise Certified service.

II. Products Applied Outside

Products used outside must meet these additional criteria:

1. No active ingredients listed in
 - a. Section 303(d) of the Clean Water Act: http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml
 - b. California's Groundwater Protection List: <http://www.cdpr.ca.gov/docs/legbills/calcode/040101.htm#a6800>
2. No active ingredients that are considered to be extremely toxic to the following as indicated by the label, MSDS, or EPA data:
 - a. Birds
 - b. Fish
 - c. Bees
 - d. Wildlife
3. No active ingredients with an average soil half life greater than 99 days as determined by the Oregon State University (OSU) Pesticide Properties Database (<http://ace.orst.edu/info/npt/ppdmove.htm>) or other reliable source



4. No products likely to contaminate groundwater as indicated by the label.
5. No active ingredients with high soil mobility (i.e., a GUS* score greater than 3 as determined by the OSU Pesticide Properties Database [<http://ace.orst.edu/info/nptn/ppdmove.htm>] or other reliable source)

A list of examples of pesticides that pass these criteria can be found in Appendix A of the EcoWise Certified Standards (www.ecowisecertified.org).

* The GUS score is calculated in the following way: $GUS = \log(\text{average half life in days}) \times [4 - \log(Koc)]$ where Koc is a measure of the tendency to bind to soil.



PARTNERING TO MAKE IPM WORK: ROLES AND RESPONSIBILITIES OF CUSTOMERS AND PCOS

In order to make a structural integrated pest management program work, the customer and the pest control operator (PCO) must work together as partners. A clear understanding, in the beginning, of the customer's and PCO's roles and responsibilities will help establish this partnership. Below are listed roles and responsibilities under either Customer or Pest Control Operator (PCO); some of these responsibilities can be interchanged if desired. We recommend discussing these with your IPM service provider to agree on specific responsibilities for each party.

The Role of the Customer

The customer's role is at least as crucial as the pest control operator's in the success of the overall IPM program. The customer must understand that they play an integral role in the development of the pest management plan and in the ongoing implementation of the pest management plan.

- 1. The primary responsibility for controlling pests on the agency's property remains with the agency.** One of the reasons for this is that the agency controls and manages most of the key assets that are crucial for managing pests at a property:
 - The property itself
 - The staff working at the property
 - Contractors bringing in goods to the property (goods such as landscaping materials, foodstuffs, or other products that could contain pests or cause pest problems themselves)
 - Other service vendors or in-house staff who manage sanitation and the landscape, which can be frequent sources of pest problems for the structure

- 2. The customer must determine the goals of the IPM program** and communicate these to the PCO. The following are examples of goals:
 - Protect the structure and its contents from undue damage from pests
 - Control pests for reasons of sanitation and health
 - Prevent or reduce pesticide run-off into stormdrains
 - Meet a particular regulatory standard required by the health department, USDA or FDA
 - Ensure that staff are not bothered by nuisance pests at their work stations

- 3. The customer must determine the scope of service**, which includes pests to be covered, tolerance levels for pests, service frequencies, response times, and payment for service and work beyond the original scope of service.

- 4. The customer needs to commit key personnel** to administer the IPM program internally. An IPM Coordinator or at least an IPM point person will be necessary to oversee the IPM program. This person's responsibilities will include tasks such as the following:
 - Educating agency staff, or arranging for the contractor to educate agency staff about their role in managing pests
 - Receiving reports of pest problems at the facility from agency staff, and relaying them to the PCO
 - Receiving recommendations and reports from the PCO regarding the presence of pests, and the structural, behavioral, and other modifications which may need to be implemented in various parts of the facility
 - Relaying information and recommendations to the appropriate staff in the facility or to other outside contractors



- Coordinating and overseeing the response to recommendations made by the PCO
- Problem solving
- Acting as an internal advocate for IPM

The Role of the Pest Control Operator (PCO)

1. The primary role of a PCO is as a consultant who

- Helps pre-empt and avoid pest problems
- Acts as an problem solver and an advocate for IPM
- Identifies pests and conducive conditions for current or potential pest infestations
- Makes recommendations for implementing a comprehensive management plan
- Evaluates recommendations in cooperation with the agency, taking into account the given level of involvement the consumer desires, the customer's pest tolerance levels, the financial considerations of the customer, and other factors which will influence the final pest management strategy for a particular customer or site

2. The secondary role of the PCO is to implement pest management plans on behalf of, and in cooperation with, the customer by using a wide variety of tactics such as:

- Sanitation and other preventive measures
- Monitoring and inspection
- Mechanical devices to control pests
- Structural repairs and modifications
- Pesticides and other tools to control and manage the target pests

Acknowledgements: This document is based on guidance provided by Eric Paulsen of the Pest Control Operators of California.



REFERENCES & SOURCES

USDA National Organic Program Final Rule (NOP)

Marin Organic Certified Agriculture (MOCA) Certification Program

San Francisco Department of the Environment

Albert Greene, National Capitol Region IPM Program

Albert Greene: Guidelines for Structural Pest Control Operations for Federal buildings operated by the U.S. General Services Administration, National Capital Region

University of California Statewide IPM Project

DEFINITIONS

Integrated pest management (IPM): IPM is a science-based strategy and decision-making process that provides effective, long-term pest control while emphasizing pest prevention and the use of non-chemical pest management practices. At its core, IPM includes the following activities:

- Inspection, monitoring and record-keeping are used to determine if thresholds for acceptable pest levels have been exceeded and to select the location, timing, and type of management strategies needed to successfully manage pests.
- A partnership is formed with the customer to facilitate management of pests.
- Appropriate and site-specific treatments are selected from educational, cultural, manual, mechanical, physical, biological, and chemical strategies. They are used within an integrated program to achieve long-term solutions that minimize hazards to human health and the environment.
- Reduced-risk chemical controls are included in the treatment program when non-chemical methods are insufficient to solve the pest problem in an effective and affordable manner.

Action level: the number of pests or amount of damage that triggers action to manage a pest in order to prevent pest numbers or damage from exceeding the tolerance level

Bait: any combination of a pesticide active ingredient with other inert materials, designed to induce a target pest to ingest or otherwise interact with the combination

Calendar scheduled treatments: treatments that are scheduled on a regular, calendar basis regardless of whether pests are present or their numbers have exceeded the action level

Crack and crevice treatment: application of small amounts of pesticides into cracks and crevices in which pests hide or through which they may enter a building. Such openings commonly occur at expansion joints in a structure, between different elements of construction, and between equipment and floors. These openings may lead to voids such as hollow walls, equipment legs and bases, conduits, motor housings, and junction or switch boxes. These treatments shall not be readily accessible after application.

Direct supervision: technicians are directly assigned tasks and presented with treatment protocols produced by a Certified IPM Practitioner; the Certified IPM Practitioner monitors completion of tasks, time needed for completion, tools and materials used, and records kept; the Certified IPM Practitioner must be available to communicate by phone



when technician is performing an EcoWise Certified IPM service; the Certified IPM Practitioner must conduct the initial site assessment and, for on-going accounts, must visit the site at least once a year

Directed treatment: use of equipment and techniques to limit pesticide applications to a defined target area

EcoWise Certified IPM Practitioner: any person who has fulfilled the requirements set out in the EcoWise Certified *Standards for IPM Certification in Structural Pest Management* and has passed the certifying exam. They serve as an integral part of an EcoWise Certified IPM service:

- Each operation or branch office offering an EcoWise Certified IPM Service must employ at least one EcoWise Certified IPM Practitioner
- The Certified IPM Practitioner must implement or directly supervise the implementation of the EcoWise Certified IPM service
- The Certified IPM Practitioner must provide the initial site assessment and IPM plan for the customer
- The Certified IPM Practitioner must implement the IPM plan or directly supervise the plan's implementation

EcoWise Certified IPM Service: a pest management service that complies with the EcoWise Certified *Standards for IPM Certification in Structural Pest Management* and is offered by an operation or branch office that has fulfilled the requirements for certification set out in the *Standards*

Fogging: a pesticide application technique in which a pesticide is released as an omni-directional aerosol spray of very fine particles that is designed to optimize coverage of surfaces throughout the treated environment (not to be used in an EcoWise Certified IPM service)

Insect growth regulator (IGR): a compound that can disrupt normal growth and development processes in insects. Currently there are 2 classes of IGRs:

- Juvenile hormone analogs which prolong larval or nymphal stages, prevent or curtail pupation, or create sterile adults
- Chitin synthesis inhibitors which disrupt the normal molting process in insects

Pest(s): a general term that includes problem insects, mites, birds, mammals, weeds, and other organisms. Organisms become "pests" when their numbers are high enough to be damaging, a health risk, or a serious nuisance

Pest conducive conditions: conditions that allow or encourage pests to enter a building and then to remain there

Pest control: mitigating or eliminating pests by a variety of non-chemical and/or chemical techniques

Pest management: see pest control

Pest tolerance level: the number of pests or amount of damage the customer or the site can tolerate as determined by the Certified IPM Practitioner in consultation with the customer; this level may also be determined by laws and regulations

Pesticide: any substance intended to control, destroy, repel, or attract a pest. Pesticides include herbicides, fungicides, insecticides, rodenticides, and even naturally occurring, pest-destroying organisms such as *Bacillus thuringiensis*. Botanical products that contain food-grade ingredients such as clove or mint oil are pesticides.

Perimeter treatment: a treatment of the exterior perimeter of a building where the structure is completely or nearly completely encircled by a continuous pesticide application (not to be used in an EcoWise Certified IPM service except as noted in this document and the *Standards*)

Pheromone: a chemical secreted by an animal that affects other animals of the same species



Space spray: see fogging

Spot treatment: an application of a pesticide to a discrete, relatively small area limited to the immediate vicinity of a clearly identified pest problem, such as the pest itself, an entry point, or a nest. A spot treatment shall be no larger than necessary to be effective, and in any case shall be no larger than 2 feet square.

Standards: the *EcoWise Certified Standards for IPM Certification in Structural Pest Management* (see www.EcoWiseCertified.org)

Tamper-resistant bait station (for rodents): Tamper-resistant bait stations are of durable fabrication and meet the following criteria:

1. Resistant to weather
2. Strong enough to prohibit entry by large non-target species
3. Equipped with a locking lid and/or secured rebaiting hatches
4. Equipped with entrances that readily allow target animals access to baits while denying access to larger non-target species
5. Capable of being anchored easily and securely to resist efforts to move the container or to displace its contents
6. Equipped with an internal structure for securely containing baits
7. Made in such a way as not to be an attractive nuisance
8. Capable of displaying proper precautionary statements in a prominent location

Tolerance level: see Pest tolerance level

Treatment: applications of materials or procedures designed to alleviate pest problems

Void: the enclosed, empty space inside hollow elements of equipment or between walls, between ceiling and floor, between floor and cabinet and other similar structural elements

