



## **2020 AHERA 3-YEAR REINSPECTION**

### **PUTEGNAT ELEMENTARY SCHOOL**

**PREPARED FOR:**

**BROWNSVILLE INDEPENDENT SCHOOL DISTRICT**

**PREPARED BY:**

**ENVIROTEST, LLC  
5233 IH 37, SUITE A-3  
CORPUS CHRISTI, TEXAS 78408  
(361) 887-9400**

**ENVIROTEST PROJECT #: 15601**

**JUNE 2020**

**HOUSTON • CORPUS CHRISTI**



May 28, 2020

Mr. Orlando Cano  
Brownsville Independent School District  
708 Palm Boulevard  
Brownsville, Texas 78520

RE: 3-Year AHERA Re-Inspection  
Putegnat Elementary  
School 730 East 8<sup>th</sup> Street  
Brownsville, Texas 78520

Dear Mr. Cano:

Enclosed is the report for the 3 Year AHERA re-inspection of the above-mentioned facility. Envirotest, LLC, a State of Texas Licensed Asbestos Consulting Agency, conducted the re-inspection. All personnel utilized in the inspection were accredited inspectors as required under AHERA. A list of all accredited personnel and their accreditation certificates are attached.

Table I includes a list of all suspect materials by homogeneous area number, asbestos content (if any), description, location, condition, assessment, and recommended response action. The re-inspection was conducted in accordance with 40CFR 763.85-90.

The AHERA designated person for Putegnat Elementary School is:

Mr. Orlando Cano  
Brownsville Independent School District  
708 Palm Boulevard  
Brownsville, Texas 78520

In accordance with 40 CFR 763.91(i) and 763.84, Brownsville Independent School District has designated Mr. Orlando Cano as the Asbestos Program Manager (LEA Designated Person).

---

Mr. Orlando Cano - Signature



If you have any questions regarding this report, please call. We appreciate the opportunity to be of service to Brownsville ISD.

Sincerely,

Alex Fuhrmann  
Accredited Management Planner/Asbestos Inspector  
Licensed Asbestos Consultant (#10-5629)  
Envirotest, LLC



## **Asbestos Management Plan**

A system will be set up to inform workers, school maintenance and custodial employees, building occupants or their guardian about inspections, re-inspections, response actions, and post-response actions. This may be in the form of advertisements, mail outs, or posted or handout materials or a combination thereof.

### **Selection of Sampling Locations**

Inspectors will identify homogeneous areas of friable and non-friable materials and select locations that are representative of the total area. Samples will be taken in numbers sufficient to satisfy both AHERA 763.86 and Texas Department of State Health Services (DSHS) 295.58(g). Sampling locations will be selected which are random and in number at least meeting the following criteria:

1. Miscellaneous Materials – at least three (3) bulk samples per Homogeneous Area.
2. Thermal System Insulation – at least three (3) bulk samples per Homogeneous Area.
3. Surfacing Materials – for areas 1000 sq. ft. or less at least three (3) bulk samples; areas greater than 1000 sq. ft. but less than 5000 sq. ft. collect at least five (5) bulk samples; areas 5000 sq. ft. or greater at least seven (7) samples per Homogeneous Area.

### **Resources Necessary to Complete Response Actions**

The School will select Contractors and Consultants to perform Removal, Repair, Encapsulation, and Enclosure through a process that ensures service providers have sufficient resources to complete activities in a timely manner. Until Homogeneous Areas are sampled, and asbestos content is determined, no disturbance of suspect materials will be allowed. If materials are found to contain asbestos, they must be removed by licensed Asbestos Abatement Contractors before the material can be disturbed. Projects must be designed by Texas Department of State Health Services licensed Asbestos Consultants, and Project Management and Air Monitoring Services provided by Texas Dept. of State Health Services Licensed individuals.

Any new products that have historically contained asbestos brought onto the campus for renovation projects must be accompanied by Safety Data Sheet (SDS) or Manufacturers' Certifications showing said materials are asbestos Free. Lacking SDS or Manufacturers' Certifications, materials should be sampled based on the above



sampling criteria to show the area asbestos free. Locations of such installations will also be noted. These records will be incorporated into the management plan to rebut the designation of the installed products as asbestos containing. If asbestos containing products must be installed due to non availability of asbestos-free substitutes, installation of such products must be done using licensed contractors, consultants, and methods followed in abatement activities for removal of such products.

This Management Plan will be available for inspection to representatives of Environmental Protection Agency (EPA), Texas Department of State Health Services (DSHS), and the public, including parents, teachers, or other school personnel and their representatives. It will also be available to workers before work begins in any area of the school building,

At least once each year the School will notify in writing parent, teacher, and employee organizations or individuals of the availability of management plans. Dated copies of such notifications should be kept with the management plan, along with descriptions of steps taken to notify such groups.

### **Recordkeeping Requirements**

Required records are to be kept in the administrative office of the School Main Building. Records of removal must be kept for three (3) years after the next scheduled three (3) year reinspection. Records will include:

1. A detailed written description of the response action taken including methods used, location of response action, reasons for selecting response action, start and completion dates of work, names and addresses of contractors, and Texas Department of State Health Services license numbers of contractors and individuals involved, and name and location of disposal site and a copy of waste manifest records.
2. Name, signature, Texas Department of State Health Services License number(s) of any person collecting clearance samples for any response action.
3. Locations of clearance samples, dates of collection, name and address of laboratories performing analysis, name and signature of persons performing analysis, dates of analysis, and a statement of laboratory licensing and accreditations.
4. For persons requiring training under AHERA 763.92(a), the School will provide the person's name and job title, date that training was completed, location of the training, and number of hours completed in that training.



5. For each periodic surveillance performed, the School will record the name of persons performing the surveillance, date of surveillance, and any changes of condition since last surveillance of the materials.
6. For each cleaning performed under AHERA 763.91( c) record the name of each person performing the cleaning, date, locations cleaned, and methods used to perform such cleaning.
7. For each time Operations and Maintenance activities under AHERA 763.91(d) are performed, the School will record the name and Texas Department of State Health Services license numbers of all persons involved in those activities, start and completion dates of the activity, the locations of work, a description of the activity, and the name and location of the disposal site including the waste manifest.
8. For each time major asbestos abatement activities under AHERA 763.91(e) are performed, the School will record the names and Texas Department of State Health Services license numbers of all persons involved in those activities, start and completion dates of the activity, the locations of work, a description of the activity, and the name and location of the disposal site including the waste manifest.
9. For each fiber release episode under 763.91(f), the School will provide the date and location of the episode, the method of repair, preventive measures or response actions taken, names and Texas Department of State Health Services license numbers of each person performing the work, and the name and location of the disposal site including the waste manifest.

## **FEDERAL EPA REQUIREMENTS**

### **Re-Inspection**

At least once every three (3) years after the management plan is in effect, the School shall conduct a reinspection of all friable and nonfriable known or assumed asbestos-containing building materials (ACBM). These re-inspections must be conducted by a Texas Department of State Health Services Licensed Inspector, Management Planner, or Asbestos Consultant.

### **Periodic Surveillance**

Every six (6) months building staff (including but not limited to custodians, maintenance, or other staff) will check materials that have or are presumed to have asbestos. Surveillance is not limited to staff but is customarily performed by persons familiar with



materials and who observe them on a regular basis. Surveillance personnel will have at minimum 2-hour awareness training. Condition of material will be recorded on a checklist. Any deterioration will be noted and checklists turned in to the Asbestos Designated Person. If damage is noted, an appropriate response action will be chosen and implemented. Checklists will be kept with the management plan.

### **Response Actions**

The School will utilize licensed Asbestos Abatement Contractors and licensed Asbestos Consultant or Management Planner Agencies to perform asbestos related activities. Response actions will be selected sufficient to protect human health and the environment and may be the least financially burdensome method. These include removal, repair, encapsulation, enclosure, and operations and maintenance.

(a) The School shall select and implement in a timely manner the appropriate response actions in this section consistent with the assessment conducted in AHERA 763.88. The response actions selected shall be sufficient to protect human health and the environment. The School may then select, from the response actions that protect human health and the environment, which action is the least burdensome method. Nothing in this section shall be construed to prohibit removal of ACBM from a school building at any time, should removal be the preferred response action.

(b) If damaged or significantly damaged ACM (asbestos containing material) thermal system insulation is present in a building:

(1) At least repair the damaged area.

(2) Remove the damaged material if it is not feasible, due to technological factors, to repair the damage.

(3) Maintain all thermal system insulation ACM and its covering in an intact state and undamaged condition.

(c) If damaged friable surfacing ACM or damaged friable miscellaneous ACM is present in a building, the School shall select from among the following response actions: encapsulation, enclosure, removal, or repair of the damaged material.

(1) In selecting the response action from among those which meet the definitional standards in AHERA 763.83, the School shall determine which of these response actions protects human health and the environment. For purposes of determining which of these response actions are the least burdensome, the school may then consider local



circumstances, including occupancy and use patterns within the school building, and its economic concerns, including short- and long-term costs.

(d) If significantly damaged friable surfacing ACM or significantly damaged friable miscellaneous ACM is present in a building the School shall:

(1) Immediately isolate the functional space and restrict access, unless isolation is not necessary to protect human health and the environment.

(2) Remove the material in the functional space or, depending upon whether enclosure or encapsulation would be sufficient to protect human health and the environment, enclose or encapsulate.

(e) If any friable surfacing ACM, thermal system insulation ACM, or friable miscellaneous ACM that has potential for damage is present in a building, the School shall at least implement an operations and maintenance (O&M) program, as described under AHERA 763.91.

(f) If any friable surfacing ACM, thermal system insulation ACM, or friable miscellaneous ACM that has potential for significant damage is present in a building, the School shall:

(1) Implement an O&M program, as described under AHERA 763.91.

(2) Institute preventive measures appropriate to eliminate the reasonable likelihood that the ACM or its covering will become significantly damaged, deteriorated, or delaminated.

(3) Remove the material as soon as possible if appropriate preventive measures cannot be effectively implemented, or unless other response actions are determined to protect human health and the environment. Immediately isolate the area and restrict access if necessary, to avoid an imminent and substantial endangerment to human health or the environment.

(g) Response actions including removal, encapsulation, enclosure, or repair, other than small-scale, short-duration repairs, shall be designed and conducted by persons licensed by Texas Department of State Health Services to design and conduct response actions.

(h) This Management Plan will not supersede or relieve the School Contractors from compliance with the worker protection and work practice requirements under 29 CFR 1926.1101 (Occupational Safety and Health Administration [OSHA] asbestos worker





protection standards for construction), 40 CFR part 763, subpart G (EPA asbestos worker protection standards for public employees), and 40 CFR part 61, subpart M (EPA National Emission Standards for Hazardous Air Pollutants -- Asbestos).

(i) Completion of response actions:

(1) At the conclusion of any action to remove, encapsulate, or enclose ACBM or material assumed to be ACBM, a person designated by the School shall visually inspect each functional space where such action was conducted to determine whether the action has been properly completed.

(2)(i) A person designated by the School shall collect air samples using aggressive sampling as described in 40 CFR Part 763, Subpart E, Appendix A to monitor air for clearance after each removal, encapsulation, and enclosure project involving ACBM, except for projects that are of small-scale, short-duration. Persons collection air samples for analysis by transmission electron microscopy (TEM) or phase contrast microscopy (PCM) will be licensed by the Texas Department of State Health Services.

(ii) The School shall have air samples collected under this section analyzed for asbestos using laboratories licensed by the Texas Department of Health to conduct such analysis using transmission electron microscopy (TEM) or, under circumstances permitted in this section, laboratories licensed by the Texas Department of Health to conduct such analysis for phase contrast microscopy (PCM).

(a) *Applicability:* The School shall implement an operations, maintenance, and repair (O&M) program under this section whenever any friable ACBM is present or assumed to be present in a building that it leases, owns, or otherwise uses as a school building. Any material identified as nonfriable ACBM or nonfriable assumed ACBM must be treated as friable ACBM for purposes of this section when the material is about to become friable as a result of activities performed in the school building.

(b) *Worker protection:* The School must comply with either the OSHA Asbestos Construction Standard at 29 CFR 1926.1101, or the Asbestos Worker Protection Rule at 40 CFR 763.120, whichever is applicable.

(c) *Cleaning:*

(1) *Initial cleaning.* Unless the building has been cleaned using equivalent methods within the previous six (6) months, all areas of a school building where friable ACBM, damaged or significantly damaged thermal system insulation ACM, or friable suspected



ACBM assumed to be ACM are present shall be cleaned at least once after the completion of the inspection required by AHERA 763.85(a) and before the initiation of any response action, other than O&M activities or repair, according to the following procedures:

- (i) HEPA-vacuum or steam-clean all carpets.
  - (ii) HEPA-vacuum or wet-clean all other floors and all other horizontal surfaces.
  - (iii) Dispose of all debris, filters, mopheads, and cloths in sealed, leak-tight containers.
- (2) *Additional cleaning:* The accredited management planner shall make a written recommendation as to whether additional cleaning is needed, and if so, the methods and frequency of such cleaning.
- (d) *Operations and maintenance activities:* The School shall ensure that the procedures described below to protect building occupants shall be followed for any operations and maintenance activities disturbing friable ACBM:
- (1) Restrict entry into the area by persons other than those necessary to perform the maintenance project, either by physically isolating the area or by scheduling.
  - (2) Post signs to prevent entry by unauthorized persons.
  - (3) Shut off or temporarily modify the air-handling system and restrict other sources of air movement.
  - (4) Use work practices or other controls, such as, wet methods, protective clothing, HEPA-vacuums, mini-enclosures, glove bags, as necessary to inhibit the spread of any released fibers.
  - (5) Clean all fixtures or other components in the immediate work area.
  - (6) Place the asbestos debris and other cleaning materials in a sealed, leak-tight container.
- (e) *Maintenance activities other than small-scale, short-duration:* The response action for any maintenance activities disturbing friable ACBM, other than small-scale, short-duration maintenance activities, shall be designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions.



(f) *Fiber release episode:*

(1) *Minor fiber release episode.* The School shall ensure that the procedures described below are followed in the event of a minor fiber release episode (i.e., the falling or dislodging of 3 square or linear feet or less of friable ACBM):

(i) Thoroughly saturate the debris using wet methods.

(ii) Clean the area, as described in paragraph (e) of this section.

(iii) Place the asbestos debris in a sealed, leak-tight container.

(iv) Repair the area of damaged ACM with materials such as asbestos-free spackling, plaster, cement, or insulation, or seal with latex paint or an encapsulant, or immediately have the appropriate response action implemented as required by AHERA 763.90.

(2) *Major fiber release episode:* The School shall ensure that the procedures described below are followed in the event of a major fiber release episode (i.e., the falling or dislodging of more than 3 square or linear feet of friable ACBM):

(i) Restrict entry into the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.

(ii) Shut off or temporarily modify the air-handling system to prevent the distribution of fibers to other areas in the building.

(iii) The response action for any major fiber release episode must be designed by persons licensed to design response actions and conducted by persons licensed to conduct response actions.

### **AHERA 763.92 Training and Periodic Surveillance**

(a) *Training:*

(1) The School shall ensure, prior to the implementation of the O&M provisions of the management plan, that all members of its maintenance and custodial staff (custodians, electricians, heating/air conditioning engineers, plumbers, etc.) who may work in a building that contains ACBM or Suspect ACBM receive awareness training of at least two (2) hours, whether or not they are required to work with ACBM. New custodial and



maintenance employees shall be trained within 60 days after commencement of employment. Training shall include, but not be limited to:

- (i) Information regarding asbestos and its various uses and forms.
- (ii) Information on the health effects associated with asbestos exposure.
- (iii) Locations of ACBM identified throughout each school building in which they work.
- (iv) Recognition of damage, deterioration, and delamination of ACBM.
- (v) Name and telephone number of the person designated to carry out general the School responsibilities under AHREA 763.84 and the availability and location of the management plan.

3) The School maintenance and custodial staff who have attended EPA-approved asbestos training or received equivalent training for O&M and periodic surveillance activities involving asbestos shall be considered trained for the purposes of this section.

*(b) Periodic surveillance:*

(1) At least once every six (6) months after a management plan is in effect, each School shall conduct periodic surveillance in each building that it leases, owns, or otherwise uses as a school building that contains ACBM or assumed ACBM.

(2) Each person performing periodic surveillance shall:

- (i) Visually inspect all areas that are identified in the management plan as ACBM or assumed ACBM.
- (ii) Record the date of the surveillance, his or her name, and any changes in the condition of the materials.
- (iii) Submit to the person designated to carry out general the School responsibilities under AHERA 763.84 a copy of such record for inclusion in the management plan.

Training for persons conducting periodic surveillance shall be 2-hour awareness, at minimum.



## **AHERA 763.94 Recordkeeping**

(a) Records required under this section shall be maintained in a centralized location in the administrative office of both the School and the local education agency as part of the management plan. For each homogeneous area where all ACBM has been removed, the School shall ensure that such records are retained for three (3) years after the next reinspection required under AHERA 763.85(b)(1), or for an equivalent period.

(b) For each preventive measure and response action taken for friable and nonfriable ACBM and friable and nonfriable suspected ACBM assumed to be ACM, the School shall provide:

(1) A detailed written description of the measure or action, including methods used, the location where the measure or action was taken, reasons for selecting the measure or action, start and completion dates of the work, names and addresses of all contractors involved, and if applicable, their State of accreditation, and accreditation numbers, and if ACBM is removed, the name and location of storage or disposal site of the ACM.

(2) The name and signature of any person collecting any air sample required to be collected at the completion of certain response actions specified by AHERA 763.90(i), the locations where samples were collected, date of collection, the name and address of the laboratory analyzing the samples, the date of analysis, the results of the analysis, the method of analysis, the name and signature of the person performing the analysis, and a statement that the laboratory meets the applicable requirements of AHERA 763.90(i)(2)(ii).

(c) For each person required to be trained under AHERA 763.92(a) (1) and (2), the School shall provide the person's name and job title, the date that training was completed by that person, the location of the training, and the number of hours completed in such training.

(d) For each time that periodic surveillance under AHERA 763.92(b) is performed, the School shall record the name of each person performing the surveillance, the date of the surveillance, and any changes in the conditions of the materials.

(e) For each time that cleaning under AHERA 763.91(c) is performed, the School shall record the name of each person performing the cleaning, the date of such cleaning, the locations cleaned, and the methods used to perform such cleaning.



(f) For each time that operations and maintenance activities under AHERA 763.91(d) are performed, the School shall record the name of each person performing the activity, the start and completion dates of the activity, the locations where such activity occurred, a description of the activity including preventive measures used, and if ACM is removed, the name and location of storage or disposal site of the ACM.

(g) For each time that major asbestos activity under AHERA 763.91(e) is performed, The School shall provide the name and signature, State of accreditation, and if applicable, the accreditation number of each person performing the activity, the start and completion dates of the activity, the locations where such activity occurred, a description of the activity including preventive measures used, and if ACM is removed, the name and location of storage or disposal site of the ACM.

(h) For each fiber release episode under AHERA 763.91(f), the School shall provide the date and location of the episode, the method of repair, preventive measures or response action taken, the name of each person performing the work, and if ACM is removed, the name and location of storage or disposal site of the ACM. (Approved by the Office of Management and Budget under control number 2070-0091)

### **AHERA 763.95 Warning Labels**

(a) The School shall attach a warning label immediately adjacent to any friable and nonfriable ACM and suspected ACM assumed to be ACM located in routine maintenance areas (such as boiler rooms) at each school building. This shall include:

(1) Friable ACM that was responded to by a means other than removal.

(2) ACM for which no response action was carried out.

(b) All labels shall be prominently displayed in readily visible locations and shall remain posted until the ACM that is labeled is removed.

(c) The warning label shall read, in print which is readily visible because of large size or bright color, as follows: CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.



## TEXAS DEPARTMENT OF STATE HEALTH SERVICES REGULATIONS

### §295.58 OPERATIONS: GENERAL REQUIREMENTS FOR PUBLIC BUILDINGS

(a) **Responsibility:** It is the responsibility of owners of public buildings or their designated agents to engage persons licensed under the provisions of these sections to perform any asbestos-related activity.

(b) **Supervision:**

(1) Every asbestos abatement project undertaken by a licensed contractor in a public building shall be supervised by at least one licensed asbestos abatement supervisor.

(2) Abatement supervisors shall remain on the job site and in immediate contact with those under their supervision during all periods of asbestos abatement activity.

(3) During any period of actual abatement of asbestos, an abatement supervisor shall be stationed within the containment area at least 25% of the time for the purpose of supervising the progress of the abatement work.

(4) Every small-scale, short-duration maintenance or repair activity that involves asbestos-containing material (ACM) in a public building shall be supervised by at least one restricted-license operations and maintenance (O&M) supervisor. Restricted-activity supervisors shall be at the job site during all periods of asbestos disturbance activity.

(5) Abatement contractors or building management licensees may also employ licensed abatement supervisors to supervise small-scale, short-duration operations and maintenance activities.

(6) Supervisors with either restricted or unrestricted licenses may be employed as asbestos abatement workers.

(7) All licensed supervisors are responsible for respirator fit testing, personal protection of the workers, security, and control of access at the job site.



(8) Supervisors licensed under these sections shall require that operations at the asbestos job site cease whenever hazardous or unlawful situations are detected, so as to affect a remedy.

(c) **Employees:** Each employee or agent of any licensee who must intentionally disturb, handle, or otherwise work with ACM, or who shall engage in an asbestos abatement project, asbestos O&M activities or other asbestos-related activity shall have an annual physical examination, respirator fit-test, be properly equipped and trained, and be licensed or registered in accordance with these sections.

(d) **Records:** Each licensee shall keep a complete record of each asbestos related activity or operation in public buildings to the extent of his or her participation. Such records shall be kept for 30 years. Each licensee shall also keep a copy of all violations issued against him by the Environmental Protection Agency (EPA), Occupational Safety and Health Administration of the United States Department of Labor (OSHA), or a state agency. All required records shall be made available, upon request, for inspection and review by the department. See §295.62 of this title (relating to Operations: Record keeping) for specific requirements.

(e) **Compliance Inspections:** Each licensee shall assist and cooperate with all properly identified representatives of the department in the conduct of asbestos inspections or investigations at all reasonable or necessary times, with or without prior notice. Such inspections may be made at proposed, actual, or former sites of asbestos-related activities, or of the premises, records, equipment and personnel of licensees or applicants, or of those who have held active licenses previously. It is a violation to interfere with or delay an inspection or investigation conducted by a department representative. A licensee may not deny entry to a properly identified representative of the department.

(f) **Respirator Program:** Each employer licensee shall be responsible for establishing and maintaining a written respiratory protection program, as required by OSHA regulations in 29 Code of Federal Regulations (CFR) §1910.134, as amended. Respirators shall be properly worn at all times in containment during asbestos abatement activity.

(g) **Individual Respirator Fit:** The licensee must maintain in safe working condition a sufficient number of respirators of the types and styles approved by the National Institute of Occupational Safety and Health (NIOSH) to meet all anticipated requirements of his/her employees; and any employee whose facial characteristics, hair,





mustache, or beard preclude a tight fit of a negative-pressure respirator shall not be allowed to enter the containment area of an asbestos operation using this type of respirator.

(h) **Sampling for Asbestos:** A survey by a licensed asbestos inspector using accepted standards such as the Asbestos Hazard Emergency Response Act (AHERA) protocol or, as a minimum, three samples for each homogeneous area is required to rebut or confirm the presence of ACBM for abatement or operations and maintenance (O&M). Only laboratories licensed by the State of Texas may be used to evaluate samples taken from within public buildings in Texas. Building material that has not been sampled, and is not beyond question as to asbestos content, must be treated as ACBM.

(i) **Project Monitoring:** The asbestos consultant shall specify the protocol for monitoring the project. This will include the duties and responsibilities of the project manager and the air monitoring requirements. Only one cassette may be placed on a pump at a time.

#### (1) Baseline

(A) The asbestos consultant shall insure that baseline samples are collected. This requirement shall be made a part of the specifications for an asbestos project. Air samples for analysis by Phase-contrast Microscopy will be collected under normal building conditions for any abatement activity prior to the disturbances of asbestos-containing building material (ACBM) as a part of the activity. A minimum of three (3) samples shall be collected on 0.8-micron mixed cellulose ester (MCE) filters loaded in conducting cassettes with extension cowls. Sampling and analysis will be in accordance with the latest edition of NIOSH 7400 protocol, counting rules A. The minimum sample volume will be 1,250 liters.

(B) These samples may be analyzed or archived at the consultant's discretion. The samples shall be preserved for no less than 60 days following achieving clearance.

#### (2) Ambient

(A) Ambient samples will be collected during the project and analyzed in accordance with the latest edition of NIOSH 7400 protocol, counting rules A.

(B) Ambient samples will be collected: inside containment; outside containment but inside the building (if applicable); the negative air unit discharge; immediately outside the entrance to the decontamination facility



(representative of the air being drawn into the facility); outside the bag out facility; and any other locations required by the specifications.

(3) Clearance

(A) All project activities, except O&M, shall be cleared by using aggressive air sampling. Aggressive air sampling is the use of an air blower, such as a leaf blower with the force of air unaltered and operating as it comes from the factory, directed at all surfaces in order to cause loose asbestos fibers to become airborne. The maximum levels of residual fibers shall be as cited in subparagraph (C) of this paragraph.

(B) A visual inspection of the abatement area shall be made upon completion of ACBM removal but before the containment is removed to determine if the project has been properly conducted in accordance with the specifications and with applicable state and federal regulations and confirm that all ACBM has been properly removed, encapsulated, or maintained. A final visual will be performed by the asbestos consultant, or project manager delegated by the asbestos consultant, once the abatement contractor has removed all containment and other materials from the project site.

(C) For all projects less than 160 square ft., 260 linear ft., or 35 cu. ft., samples may be collected and analyzed by NIOSH 7400 protocol, counting rules A, Phase-contrast Microscopy (PCM) as amended. Clearance samples shall be collected at a rate of at least 0.5 less than 16 liters per minute on 0.8-micron MCE filters in conducting cassettes with extension cowls. Minimum sample volume will be 1,250 liters. Five (5) samples will be collected from each area, unless the Consultant specifies a different number. Clearance will be achieved if no sample is reported greater than 0.01 f/cc by the analysis report from the licensed laboratory. Asbestos Hazard Emergency Response Act (AHERA) protocol will be used in schools. A licensed asbestos consultant shall design the air monitoring scheme and may deviate from this subsection only if public health is maintained in accordance with all regulations. The asbestos consultant shall, upon request by the department, provide documentation and justification to support deviations and must be able to demonstrate that the design meets the requirements and intent of the applicable regulations.

(D) For all projects more than 160 square ft., 260 linear ft., or 35 cu. ft., samples may be collected and analyzed by Transmission Electron Microscopy. Clearance samples shall be collected at a flow rate of at least 0.5 liters per minute and less than 10 liters per minute on 0.45-micron MCE filters in conducting cassettes with extension cowls. Minimum sample volume will be 1,250 liters. Five (5) samples will be collected inside the containment, 3 blanks, and – at the Consultants discretion, 5



outside the containment. Clearance will be achieved if an average of the five (5) inside samples is less than 70 structures per square millimeter (s/mm).

(E) The visual inspection must be conducted by a properly licensed asbestos consultant. The asbestos consultant may delegate the visual inspection responsibility in writing to a licensed asbestos project manager considered experienced enough to properly perform this duty. A letter of delegation must be included in the project design.

(F) All samples, including clearance samples, may be collected by licensed air monitoring technicians or a licensed consultant. The sample pumps will be monitored during the sampling period by the person collecting the samples, or some other means of control will be established to ensure the integrity of the samples and prevent tampering.

(j) **Posting of Documents:** The following documents are required to be posted conspicuously by licensees involved in the project to be visible at the entrance to the regulated area and must not be covered by any other documents.

- (1) the asbestos information poster issued by the department; and
- (2) copies of any violations issued as evidenced by an order from the federal or state asbestos-regulating authorities within the preceding 12 months from any asbestos project.

(k) **Documents Required:** The following documents are required to be on site.

- (1) all current licenses, registrations and accreditation certificates;
- (2) EPA "Green Book" for O&M work;
- (3) appropriate publications as listed in §295.33 of this title (relating to Adoption by Reference of Federal Standards) for the asbestos activity which is being performed;
- (4) a copy of the "Recommended Work Practices for the Removal of Resilient Floor Coverings," published by the Resilient Floor Covering Institute, if removing floor coverings using this method.

(l) **Prohibitions:**

- (1) Solvents with a flash point of 140 degrees Fahrenheit or below shall not be used.



(2) Disposal of improperly labeled or classified asbestos containing waste material as defined in 40 CFR Part 61, Subpart M is prohibited.

### **§295.59 OPERATIONS: OPERATIONS AND MAINTENANCE (O&M) REQUIREMENTS FOR PUBLIC BUILDINGS**

(a) **Restrictions:** O&M activities involving asbestos-containing building materials (ACBM) are restricted to small-scale, short-duration activities, according to 40 CFR Part 763, Subpart E, Appendix B, titled, "Work Practices and Engineering Controls for Small-Scale, Short-Durations Operations Maintenance and Repair (O&M) Activities Involving ACM," July 1, 1997, as amended. Asbestos O&M licensees shall not engage in any activity for which the primary purpose is asbestos abatement unless otherwise licensed to perform such activity.

(b) **Work practices.** Work practices shall include the following requirements.

(1) Employers shall be responsible for furnishing and requiring the use of respirators, protective clothing, high-efficiency particulate air filter (HEPA) vacuum machines, glove bags, and other necessary equipment for all who perform O&M activities.

(2) Only licensed persons, responding emergency personnel (police, fire, EMS, etc.), specialists required for assistance as determined by the consultant, or governmental inspectors may enter the regulated areas.

(3) Physical barriers shall be used to limit access to the work area.

(4) A mini-enclosure shall be constructed for containment of asbestos fibers, or a glove bag technique may be used for removal or repair of ACBM on pipes or ducts as described the references in §295.43(f)(2) of this title (relating to Licensure: Asbestos Operations and Maintenance Contractor (Restricted)).

(5) Asbestos material must be wetted with amended water and remain wet throughout the work operation.

(6) Asbestos exposed as a result of spot repairs shall be suitably enclosed or encapsulated.

(7) HEPA vacuuming or wet cleaning shall be used to decontaminate work areas and equipment until there is no visible debris.

(8) Asbestos shall be bagged and placed in containers, and disposed of in accordance with §295.60 of this title (relating to Operations: Abatement Practices and Procedures) and 40 CFR Part 61, Subpart M.



(9) Air clearance and visual inspections shall be performed before removing any mini enclosure.

(10) The O&M book or manual developed for the building on which O&M is being performed shall be on site during all O&M operations.

## **§295.60 OPERATIONS: ABATEMENT PRACTICES AND PROCEDURES FOR PUBLIC BUILDINGS**

(a) **General Provisions:** The following general work practices are minimum requirements for protection of public health, and do not constitute complete or sufficient specifications for an asbestos abatement project. More detailed requirements in plans and specifications for a particular abatement project, or requirements that address the unusual or unique circumstances of a project, may take precedence over the provisions of this section. The specifications written for the abatement project shall also include the required air clearance procedures.

(1) Federal work practices for asbestos abatement are referenced in 40 Code of Federal Regulations (CFR) §61.145, Environmental Protection Agency (EPA) titled "Standard for Demolition and Renovation," as amended.

(2) An asbestos project consultant who is licensed under §295.47 of this title (relating to Licensure: Individual Asbestos Consultant) and is a Professional Engineer (PE) or Certified Industrial Hygienist (CIH), may specify work practices that vary from the provisions of this section as long as the work practices specified are at least as protective of public health, and are clearly described in the project notification submitted to the Texas Department of Health (department). The burden of proof rests with the asbestos consultant. Alternative control methods as referred to in 29 CFR §1926.1101(g)(6), such as dry removal or no negative air, shall be reviewed and certified in writing by a Certified Industrial Hygienist (CIH) or a Professional Engineer (PE) and shall be approved in writing by the Chief of the Asbestos Programs Branch, Toxic Substances Control Division, prior to the start of abatement.

(3) If asbestos-containing material (ACM) is to be removed or encapsulated, it must be within a regulated area.

(4) Only licensed persons, responding emergency personnel (police, fire, EMS, etc.), specialists required for assistance as determined by the consultant, or governmental inspectors may enter the regulated area.

(b) **Critical Barriers:** Regulated areas within which asbestos abatement is to be conducted shall be separated from adjacent areas by impermeable barriers such as plastic sheeting attached securely in place. All openings between containment areas



and adjacent areas, including but not limited to windows, doorways, elevator openings, corridor entrances, ventilation openings, drains, ducts, grills, grates, diffusers, and skylights, shall be sealed. All penetrations that could permit air infiltration or air leaks through the barrier shall be sealed, with exceptions of the make-up air provisions and the means of entry and exit.

(c) **Movable Objects:** All movable objects shall be removed from the containment area. Cleaning of contaminated items shall be performed if the items are to be salvaged or reused. Otherwise, they shall be properly disposed of as asbestos waste. All non-movable objects that remain in the containment area shall be covered with a minimum of four-mil plastic sheeting, secured in place.

(d) **Floor and Wall Preparation:** Floor sheeting shall completely cover all floor surfaces and consist of a minimum of two layers of sheeting with at least a dart impact of 270 grams and tear resistance of machine direction (M.D.) 512 grams and transverse direction (T.D.) of 2067 grams or at least six-mil true thickness, or 3.3 mil equivalent (with written approval of the Project Designer and manufacturer's certification on site). Floor sheeting shall extend up sidewalls at least 12 inches and be sized to minimize the number of seams. No seams shall be located at wall-to-floor joints. Sealing of all floor penetrations against water leakage is mandatory. Wall sheeting shall completely cover all wall surfaces and consist of a minimum of two layers of four-mil sheeting. Wall sheeting shall be installed so as to minimize joints and shall extend beyond wall/floor joints at least 12 inches. No seams shall be located at wall-to-wall joints. Where a fire hazard exists, all plastic sheeting will be certified by the Underwriters Laboratory (UL) as being fire retardant. Where feasible, when containment walls which exceed 260 linear feet must be constructed, a viewing window will be included in the wall for each 260 linear feet or fraction of that distance which will permit the viewing of at least 51% of the abatement work area. The window shall be constructed of plexiglass which measures approximately 18 inches by 18 inches. The bottom of the window will be at a reasonable viewing height from the outside floor.

(e) **Decontamination System:** A worker decontamination enclosure system in the regulated area shall be used consisting of a clean room, shower room, and equipment room, each separated from the other and from the containment area by airlocks accessible through doorways. Except for the doorways and the make-up air provisions for the enclosure, the worker decontamination system shall be sealed against leakage of air. All personnel must exit the containment area through the shower before entering the clean room. No asbestos-contaminated individuals or items shall enter the clean room.



(f) **Heating, Ventilation, and Air Conditioning System Equipment (HVAC):** All HVAC equipment in or passing through the work area shall be shut down, and preventative measures taken to prevent accidental start-ups. All intake and exhaust openings and any seams in system components shall be sealed with at least six-mil sheeting and/or tape. All old filters shall be disposed of as asbestos waste.

(g) **Warning Signs:** Danger signs in accordance with 29 CFR §1926.1101, shall be displayed, in both the Spanish and English languages, at all entrances to regulated areas, and on the outside of critical barriers.

(h) **High-Efficiency Particulate Air (HEPA) Cleaning:** Except with prior written approval from the department, cleaning procedures shall use wet methods and HEPA vacuuming.

(i) **Containment-Area Ventilation.** Units with HEPA filtration, and in sufficient number to provide a negative pressure of at least 0.02 inches of water column differential between the containment and outside, as measured by manometric measurements, and a minimum of four containment air changes per hour, shall be operated continuously for the duration of the project. The duration of the asbestos abatement project for the purpose of this requirement shall be considered from the time a regulated area is established through the time acceptable final clearance air-monitoring results are obtained in accordance with §295.58(i)(3) of this title relating to Operations: General Requirements for Public Buildings). These units shall exhaust filtered air to the outside of the building wherever technically feasible.

(j) **Requirements for Removal:** These are the requirements for removing ACBM.

(1) All ACBM shall be adequately wetted prior to removal or other handling; material to be bagged will be marked per the applicable Occupational Safety and Health Administration (OSHA) and the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations and doubled bagged with true six (6) mil thickness or may be placed in a bag that meets the following criteria: Tear resistance of M.D. 300 grams, T.D. 2,068 grams, and dart impact of 216 grams. Documentation from the manufacturer shall be on site. In order to double bag the asbestos waste the inner bag must be no more than half full, excess air must be squeezed out, the top twisted closed, folded over, sealed with duct tape, rinsed off or HEPA vacuummed to remove asbestos contamination, and placed inside another bag (or in a fiberboard drum). If an outer bag is used excess air must be squeezed out and the outer bag twisted closed, the top



folded over and sealed with duct tape. If a fiberboard drum is used, the top must be sealed. Any bagging shall not allow leakage nor breakage due to overfilling.

(2) Asbestos covered components that are going to be removed from the building may either be stripped in place and cleaned (and pass a visual inspection by the consultant), or the ACBM may be adequately wetted and the entire component wrapped in two layers of six (6) mil plastic or a single layer of plastic with a tear resistance of no less than M.D. 512 grams, T.D. of 2,068 grams, and a dart impact of no less than 297 grams as measured using ASTM methods D1709, D1922, and D882, labeled and sealed, providing that:

(A) components such as sections of metal lath that cannot be safely lowered to the floor shall be stripped in place;

(B) any component that cannot be lowered or handled without presenting an excessive fiber release or safety hazard shall be stripped in place;

(C) sharp edges of components shall be protected to preclude tearing the plastic wrapping and causing injury; and

(3) ACBM shall be removed in small sections and containerized while wet. At no time shall material be allowed to accumulate on the floor or become dry. Structural components and piping shall be adequately wetted prior to wrapping in plastic sheeting for disposal;

(4) proper temporary storage of asbestos containing waste material shall be provided (e.g., a roll-off box, dumpster or storage room lined with plastic sheeting). Final disposal of asbestos containing waste material shall be within 30 days of project completion or when receiving container is full, whichever is sooner.

**(k) Requirements for Encapsulation of ACM:**

(1) Prior to encapsulation, loose and hanging ACM shall be removed.

(2) Filler material applied to gaps in existing material must contain no asbestos, shall adhere well to the substrate, and shall provide an adequate base for the encapsulating agent.

(3) Encapsulant shall be applied using only airless spray equipment with the nozzle pressure and tip size set according to the manufacturer's recommendations.

(4) Encapsulated materials shall be specifically designated by signs, labels, color coding, or some other mechanism to warn individuals who may in the future be required to disturb the material.





**(l) Requirements for Enclosure of ACM:**

(1) Acceptable enclosure shall be airtight and of permanent construction, so that the area behind them is inaccessible.

(2) All areas of ACM shall be wetted if they are to be disturbed during the installation of hangers, brackets, or other portions of the enclosure.

(3) Prior to enclosure, loose and hanging ACM shall be removed.

(4) Filler material applied to gaps in existing materials shall contain no asbestos and shall adhere well to the substrate.

(5) Enclosures for ACM shall be specifically designated by signs, labels, color coding, or some other mechanism to warn individuals who may in the future be required to disturb the material.

**(m) Safety Requirements:** The following safety requirements shall be in effect for an abatement project.

(1) Fire safety: At least one fire extinguisher with a minimum National Fire Protection Association rating of 10BC (dry chemical) shall be placed within each abatement project containment for every 1,000 square feet, or fraction, of containment area.

(2) Electrical safety: Ground-fault circuit interrupter (GFCI) units shall be installed on all electrical circuits used within the regulated and containment areas.

(3) Air monitoring: Air monitoring shall include personal samples according to 40 CFR Part 763, Subpart G or 29 CFR §1926.1101, base line sampling, area sampling, and clearance sampling according to §295.58(i) of this title.



### List of Definitions

Asbestos-Containing Material (ACM) - any material containing more than one percent asbestos (chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos).

Demolition - the wrecking or taking out of any load-supporting structure member and any related razing, removing, or stripping of asbestos products.

Disturbance - contact which releases fibers from ACM or debris containing ACM including activities which that disrupts the matrix of ACM, render ACM friable, or generate visible debris.

Encapsulation - a method of control of asbestos fibers in which the surface of ACM is penetrated by or covered with a liquid coating prepared for that purpose.

Enclosure - the construction of an airtight, impermeable, semi-permanent barrier surrounding asbestos to prevent the release of asbestos fibers into the air.

Fiber - a particulate form of asbestos, 5 micrometers or longer, with a length-to diameter ratio of at least 3 to 1.

Friable Materials - any material that when dry can be crumbled, pulverized, or reduced to powder by hand pressure.

Homogeneous Area - an area of surfacing material or thermal system that is uniform in color and texture.

Intact - means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that it is no longer likely to be bound with its matrix.

Removal - all operations where ACM is taken out or stripped from structures or substrates, and includes demolition operations.

Renovation - the modifying of any existing structure, or portion thereof.

Repair - overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM attached to structures or substrates.

**TABLE 1 – SAMPLE MATERIAL SUMMARY**

**Putegnat Elementary School**  
**730 E 8th St**  
**Brownsville, TX**  
**2020 3 Yr. AHERA Re-Inspection**  
**Project # 15601**  
**Inspector: Richard Rowland #603875**  
**Date:5/18/2020**

**FLOORING MATERIALS**

HA #	RESULTS	MATERIAL NAME	MATERIAL DESCRIPTION	MATERIAL LOCATION	CONDITION ASSESSMENT	ASSESSMENT CLASSIFICATION	RESPONSE ACTION
001	Presumed ACM	12" x 12" Floor Tile with mastic	White & Tan floor tile	Main Office: Amendment Principal & Principal Secretary Office	Good	5, Non Friable	O&M
002	Presumed ACM	12" x 12" Floor Tile with mastic	White & Tan floor tile	Rm's 201,203,207,209,210	Good	5, Non Friable	O&M
003	Presumed ACM	12" x 12" Floor Tile with mastic	Wood Floor	Rm:200	Good	5, Non Friable	O&M
004	Presumed ACM	12" x 12" Floor Tile with mastic	White & Blue Specks	Techers Lounge	Good	5, Non Friable	O&M
005	Presumed ACM	12" x 12" Floor Tile with mastic	Wood Floor	102-108 Hallway	Good	5, Non-Friable	O&M
006	Presumed ACM	12" x 12" Floor Tile with mastic	White Tile	Rm:102-108	Good	5, Non-Friable	O&M
007	Presumed ACM	12" x 12" Floor Tile with mastic	White Tile	Library	Good	5, Non-Friable	O&M
008	Presumed ACM	12" x 12" Floor Tile with mastic	Tan & Brown Tile	Rm: 300-303	Good	5, Non-Friable	O&M
009	Presumed ACM	12" x 12" Floor Tile with mastic	Brown, White and Blue Tile	500 Building Hallway	Good	5, Non-Friable	O&M
010	Presumed ACM	12" x 12" Floor Tile with mastic	Light Blue Tile	Rm: 501-503	Good	5, Non Friable	O&M
011	Presumed ACM	12" x 12" Floor Tile with mastic	White Tile	Rm: 101-100	Good	5, Non Friable	O&M

**TABLE 1 – SAMPLE MATERIAL SUMMARY**

**Putegnat Elementary School  
 730 E 8th St  
 Brownsville, TX  
 2020 3 Yr. AHERA Re-Inspection  
 Project # 15601  
 Inspector: Richard Rowland #603875  
 Date:5/18/2020**

HA #	RESULTS	MATERIAL NAME	MATERIAL DESCRIPTION	MATERIAL LOCATION	CONDITION ASSESSMENT	ASSESSMENT CLASSIFICATION	RESPONSE ACTION
012	Presumed ACM	12" x 12" Floor Tile with mastic	White & Brown Sports	<b>Cafeteria</b>	Good	5, Non Friable	O&M
013	Presumed ACM	12" x 12" Floor Tile with mastic	Tan Tile	Rm: P-1-P-2	Good	5, Non Friable	O&M
014	Presumed ACM	12" x 12" Floor Tile with mastic	Gray Tile	Rm:504-605	Good	5, Non Friable	O&M
015	Non Suspect	12" x 12" Floor Tile with mastic	Wood Floor	400 Building Hallway	N/A	N/A	N/A
016	Non Suspect	12" x 12" Floor Tile with mastic	Wood Floor	Rm:400,401,403,405,406	N/A	N/A	N/A

**CEILING MATERIALS**

HA #	RESULTS	MATERIAL NAME	MATERIAL DESCRIPTION	MATERIAL LOCATION	CONDITION ASSESSMENT	ASSESSMENT CLASSIFICATION	RESPONSE ACTION
200	Presumed ACM	18" x 18" Ceiling Tile and Mastic	Large Holes – Peg Board White	Main Office: Amendment Principal & Principal Secretary Office	Good	5, Non-Friable	O&M
201	Presumed ACM	Ceiling Texture	Ceiling Texture	P-1 & P-2	Good	5, Friable	O&M
202	Presumed ACM	4' x 6' Ceiling Tile	White, and Brown Fiber board	Rm: 300 to 303	Good	5, Friable	O&M

**TABLE 1 – SAMPLE MATERIAL SUMMARY**

**Putegnat Elementary School  
730 E 8th St  
Brownsville, TX  
2020 3 Yr. AHERA Re-Inspection  
Project # 15601  
Inspector: Richard Rowland #603875  
Date:5/18/2020**

HA #	RESULTS	MATERIAL NAME	MATERIAL DESCRIPTION	MATERIAL LOCATION	CONDITION ASSESSMENT	ASSESSMENT CLASSIFICATION	RESPONSE ACTION
203	Presumed ACM	24" x 24" Ceiling Tile	Small Fissure, Small Hole	Rm:200-210, Rm:102-108, Rm:101-100, Rm:500 Building Rm: 504-605	Good	5, Friable	O&M

**TSI (THERMAL SYSTEM INSULATION) MATERIALS**

HA #	RESULTS	MATERIAL NAME	MATERIAL DESCRIPTION	MATERIAL LOCATION	CONDITION ASSESSMENT	ASSESSMENT CLASSIFICATION	RESPONSE ACTION
400	Presumed ACM	HVAC Mastic	White Mastic	500 Building Storage Closet	Good	5, Non Friable	O&M

**TABLE 1 – SAMPLE MATERIAL SUMMARY**

**Putegnat Elementary School  
730 E 8th St  
Brownsville, TX  
2020 3 Yr. AHERA Re-Inspection  
Project # 15601  
Inspector: Richard Rowland #603875  
Date:5/18/2020**

**WALL MATERIALS**

HA #	RESULTS	MATERIAL NAME	MATERIAL DESCRIPTION	MATERIAL LOCATION	CONDITION ASSESSMENT	ASSESSMENT CLASSIFICATION	RESPONSE ACTION
500	Presumed ACM	Sheet Rock and Joint Compound	Yellow Powdery Coating Over White Chalky Board	Main Office: Amendment Principal & Principal Secretary Office	Good	5, Friable	O&M
501	Presumed ACM	Sheet Rock and Joint Compound	Tan Powdery Coating Over White Chalky Board	Rm's 201,203,207,209,210	N/A	N/A	N/A
502	Presumed ACM	Sheet Rock and Joint Compound	Tan Powdery Coating Over White Chalky Board	Rm:200	Good	5, Non Friable	O&M
503	Presumed ACM	Sheet Rock and Joint Compound	Tan Powdery Coating Over White Chalky Board	Techers Lounge	Good	5, Non Friable	O&M
504	Presumed ACM	Sheet Rock and Joint Compound	White Powdery Coating Over White Chalky Board	102-108 Hallway	Good	5, Non Friable	O&M
505	Presumed ACM	Sheet Rock and Joint Compound	Tan Powdery Coating Over White Chalky Board	Rm: 300-303	Good	5, Non Friable	O&M
506	Non-Suspect	Cinder Block	Yellow Block	Rm:100-101, cafeteria, RM 504-605	N/A	N/A	N/A

## TABLE 1 – SAMPLE MATERIAL SUMMARY

Putegnat Elementary School  
730 E 8th St  
Brownsville, TX  
2020 3 Yr. AHERA Re-Inspection  
Project # 15601  
Inspector: Richard Rowland #603875  
Date:5/18/2020

### LEGEND FOR TABLE I:

#### Assessment Classifications:

- (1) damaged or significantly damaged thermal system insulation;
- (2) damaged friable surfacing acm;
- (3) significantly damaged friable surfacing acm;
- (4) Damaged or significantly damaged friable miscellaneous acm;
- (5) acbm with potential for damage;
- (6) acbm with potential for significant damage;
- (7) Any remaining friable acbm or friable suspected acbm.

#### Condition Assessments:

Good  
Damaged  
Significantly Damaged

#### Response Actions:

O&M (Operations & Maintenance Program)  
Repair  
Abatement  
Encapsulate  
Enclosure