



THERMAL INSULATION ocenergycomplete.com

SECTION 07 21 00 - THERMAL INSULATION

Owens Corning's EnergyComplete™ with Flexible Seal Technology Whole Home Insulation and Air Sealing System is a system designed for use with residential construction.

Other Owens Corning insulating products for below grade, under slab, or membrane roofing applications may also be required for a specific project. Those insulating products are addressed in other Owens Corning guide specification sections, since they are not directly a part of the EnergyComplete™ system. However, requirements for those insulating products - with the exception of insulation associated with roofing systems - may be placed in this section by the editor, if they are needed for the project. Insulation associated with the roofing system should be specified in the roofing system section.

This section is numbered and titled according to Construction Specifications Institute's (CSI) MasterFormat™ 2004 Edition © 2004. This section is formatted according to CSI's SectionFormat™/PageFormat™ © 2008.

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Insulation and Air Sealing system, including the following items:
 1. Loose fill insulation.
 2. Batt insulation-faced and unfaced.
 3. Air infiltration barrier with Flexible Seal Technology.

1.2 REFERENCE STANDARDS

Edit the Reference Standards Article after completing Parts 2 & 3 of this Section. Delete those standards that do not apply.

- A. American Architectural Manufacturers Association (AAMA)
 1. AAMA 812: Voluntary Practice for Assessment of Single Component Aerosol Expanding Polyurethane Foams for Sealing Rough Openings of Fenestration Installations.
- B. ASTM International:

1. ASTM C 665 Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
2. ASTM C 719 Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)
3. ASTM C 764 Standard Specification for Mineral Fiber Loose-Fill Thermal Insulation.
4. ASTM C 1015 Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation.
5. ASTM C 1087 Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems.
6. ASTM C 1320 Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction.
7. ASTM D 543 Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents.
8. ASTM D 2126 Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
9. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
10. ASTM E 90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
11. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials.
12. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Materials.
13. ASTM E 136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.
14. ASTM E 283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
15. ASTM E 413 Classification for Rating Sound Insulation.

- C. IECC: International Energy Conservation Code.
- D. OSHA: Occupational Safety and Health Administration.
- E. SWRI: Sealant, Waterproofing, & Restoration Institute

1.3 ACTION SUBMITTALS

- A. Product Data: Submit data on product characteristics, performance criteria, and limitations.

Owens Corning's products specified in this section are covered by our standard warranty. However, other

manufacturers may have to provide a special warranty to meet the requirements of this section.

- B. Warranty: Submit sample of manufacturer’s special warranty.

1.4 INFORMATIONAL SUBMITTALS

Verify Client intends to take no action on informational submittals.

A manufacturer’s certificate is a written promise given by the manufacturer that the product being provided meets the specific requirements of this section. If a manufacturer’s certificate is required, it is typically not necessary to require that other submissions be provided to prove that the product does, in fact, meet the requirements of this section. Requiring a Manufacturer’s Certificate instead of other submittals can expedite the review process and is appropriate to use when the Contractor is known to and trusted by the Design Professional or Owner.

- A. Manufacturer’s Certificate: For each product, provide written letter, signed by manufacturers, certifying that products provided meet or exceed specified requirements.
- B. Test Reports: Provide test report, produced by an independent laboratory, showing test results that indicate physical properties of the products provided meet or exceed the requirements of this section.
- C. Manufacturer’s Instructions: Submit the following:
 - 1. General installation/application instruction.
 - 2. Environmental conditions required for installation and installation techniques.
 - 3. Safety requirements for application of products.
- D. Qualification Statements:
 - 1. Installer’s/Applicator’s: Submit qualification statement including a copy of manufacturer’s certificate.

1.5 SUSTAINABLE DESIGN SUBMITTALS

Coordinate Sustainable Design Submittals with NAHB National Green Building Standard™, USGBC LEED®, or other Sustainable Design Standard requirements as suits the project.

- A. Manufacturer’s Certificate: Provide certificates prepared by an independent, third party certifying to the following:
 - 1. Recycled material content for products with recycled content.
 - 2. Volatile organic compound content for each interior adhesive and sealant and related primer.
- B. Product Cost Data: Submit cost of products to verify compliance with Project sustainable design requirements. Exclude cost of labor and equipment to install products.

- 1. Provide cost data for the following products:

Edit list of material cost data to Project sustainable design requirements. Specific cost data requirements should be specified in Section 01 81 13 “Sustainable Design Requirements.”

- a. Products with recycled material content.

1.6 CLOSEOUT SUBMITTALS

- A. Warranty: Submit Manufacturer’s Special Warranty.

1.7 QUALITY ASSURANCE

- A. Qualifications, Installer’s/Applicator’s : Company specializing in performing work of this section with the following minimum requirements:
 - 1. Successfully completed manufacturer’s training.
 - 2. Certified by manufacturer as an approved Installer/Applicator.
- B. Preconstruction Testing:

Preconstruction testing is typically not required for residential construction and should only be required where adhesion or chemical compatibility of air infiltration barrier with flexible seal technology to other construction materials may be in question.

If specifying preconstruction testing, mockups are typically not required.

- 1. Compatibility and Adhesion Testing: Provide samples of materials air infiltration barrier with flexible seal technology with contact to testing agency to determine whether priming or other joint preparation techniques are required to obtain proper adhesion.
 - a. Test: ASTM C 1087
 - b. Test: ASTM D 543
- 2. Submit materials for testing far enough in advance to avoid delays in construction. Coordinate timing with testing agency.

- C. Mock-up:

Mock-ups are typically not required for residential construction and should only be required where adhesion or chemical compatibility of air infiltration barrier with flexible seal technology to other construction materials may be in question.

If specifying mock-ups, preconstruction testing is typically not required.

- 1. Provide mock-up of joints with flexible seal technology in conjunction with window, wall, or other mock-ups specified in other sections.

2. Construct mock-up with specified air infiltration barrier with flexible seal technology and with other components noted.
 - a. Determine preparation and priming requirements based on manufacturers recommendations; take action necessary for correction of failure of sealant tests on mock-up.
 - b. Verify sealants, primers, and other components do not stain adjacent materials.
3. Locate where directed.
4. Accepted mock-up may not remain as part of the work.

1.8 SUSTAINABLE DESIGN QUALITY ASSURANCE

Coordinate Sustainable Design Quality Assurance requirements and sustainable product characteristics with NAHB National Green Building Standard™, USGBC LEED®, or other Sustainable Design Standard requirements as suits the project.

A. Certifications:

1. VOC Emissions: Complies with GREENGUARD Product Emission Standard For Children & Schools.

Verify recycled content of specific product being used before selecting. Currently, only Owens Corning offers fiberglass insulation with 50% recycled content.

2. Recycled Content: For fiberglass insulation, 50 percent minimum.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protection, General:

1. Store and protect products in accordance with manufacturers' instructions.
2. Store with seals and labels intact and legible.
3. Store inside and in a dry location.
 - a. Protect insulation materials from moisture and soiling.
 - b. Provide ventilation to prevent condensation and degradation of products.
4. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

Coordinate whether to require recyclable containers and packaging with NAHB National Green Building Standard™, USGBC LEED®, or other Sustainable Design Standard requirements as suits the project.

B. Deliver materials in recyclable containers and packaging.

1.10 WARRANTY

If changing Warranty terms below, confirm with Owens Corning that terms desired can be provided before specifying.

A. Manufacturer's Standard Warranty.

PART 2 PRODUCTS

2.1 PRODUCT

- A. Insulation and Air Sealing System: EnergyComplete™ with Flexible Seal Technology Whole Home Insulation and Air Sealing System by Owens Corning.

2.2 SYSTEM DESCRIPTION

- A. General: System consists of an air infiltration barrier applied to joints between materials of the exterior and interior wall framing to eliminate air infiltration into the building and the installation of insulation to reduce thermal transmission.

2.3 PERFORMANCE CRITERIA

R values indicated below are for the insulation material alone. The expected performance of the whole wall assemble needs to be calculated taking the R value of all wall components into account.

Building codes will dictate the R value performance requirements for the exterior walls. Depending on applicable building codes, climate zone where the project is located, and framing material used; additional continuous insulation on the exterior side of the framing may be required. This is particularly the case where metal studs are used for framing. Consult the applicable building codes for the project location, IECC, and ASHRAE 90.1 to determine the required thermal resistance for the exterior walls.

Delete cavity depths that do not apply to the specific project.

A. Minimum R-Value, Loose-Fill Insulation:

1. Cavity Depth, 3-1/2 inch: R-13
2. Cavity Depth, 3-1/2 inch: R-15
3. Cavity Depth, 5-1/2 inch: R-21
4. Cavity Depth, 5-1/2 inch: R-24
5. Cavity Depth, 7-1/4 inch: R-31
6. Cavity Depth, 9-1/4 inch: R-39
7. Cavity Depth, 11-1/4 inch: R-48

Delete thicknesses of batt insulation that do not apply to the specific project.

B. Minimum R-Value, Batt Insulation:

1. Thickness, 3-1/2 inch: R-11.
2. Thickness, 3-1/2 inch: R-13.
3. Thickness, 3-1/2 inch: R-15.
4. Thickness, 5-1/2 inch: R-21.

5. Thickness, 6-1/4 inch: R-19.
6. Thickness, 6-3/4 inch: R-22.
7. Thickness, 8 inch: R-25.
8. Thickness, 8-1/4 inch: R-30.
9. Thickness, 9-1/2 inch: R-30.
10. Thickness, 10-1/4 inch: R-38.
11. Thickness, 12 inch: R-38.

 The STC rating listed below is an example and only applies to the specific construction listed. If a higher STC rating is needed, consult an Owens Corning representative and acoustical consultant for assistance in determining wall construction needed to meet STC requirements.

- C. Minimum STC: 39, ASTM E 90 and E 413, for exterior wall of the following construction:
1. Interior surface: One layer of 1/2 inch thick gypsum board.
 2. Framing: 2-inch by 4-inch wood studs at 16 inches on center.
 3. Insulation System: EnergyComplete™ with Flexible Seal Technology utilizing Owens Corning PROPINK Complete™ Unbonded Loose-fill Insulation, R-15, 3.5" thick.
 4. Exterior Sheathing: 7/16 inch thick oriented strand board (OSB).
 5. Exterior Finish: Vinyl siding.

2.4 MATERIALS

- A. Glass-Fiber Loose-Fill Insulation: Maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84 and as follows:

Select one of the following types of applications. If both types will be used in a building, be sure to clearly indicate on the drawings where each is being used and the extents that they are being used.

1. ASTM C 764, Type I for pneumatic application.
 2. ASTM C 764, Type II for poured application.
- B. Batt Insulation (Type 1): ASTM C 665, Type I, preformed glass fiber batt type, unfaced.
 ***** [OR] *****
- C. Batt Insulation (Type 2): ASTM C 665, Type II, Class C preformed glass fiber batt type, Kraft paper faced one side.
 ***** [OR] *****
- D. Batt Insulation (Type 2): ASTM C 665, Type II, Class B preformed glass fiber batt type, foil faced one side with maximum flame/smoke properties of 75/450 in accordance with ASTM E84.

Be sure that the desired R-values are indicated on the drawings and that insulation is NOT indicated by thickness (except in constrained spaces).

1. Thermal Resistance: As indicated on drawings.
 2. Batt Size: Friction fit of sizes to fit stud spacing.
- E. Air Infiltration Barrier Sealant.
1. Tack-Free: Dry to the touch within 20 minutes.
 2. Pressure Build: AAMA 812, less than 0.1 psi.
 3. Water Vapor Permeance:
 - a. ASTM E 96 (dry cup): 40 perm.
 - b. ASTM E 96 (wet cup): 110 perm.
 4. Dimensional Stability: ASTM D 2126, maximum 1.0% linear change at -40°F, ambient RH after 2 weeks max 2.0% linear change at 100°F, 97% RH after 2 weeks.
 5. Durability: ASTM C 719, more than 10 cycles; no cohesive failure or cracking.
 6. Flame Spread: ASTM E 84, 10.
 7. Smoke Developed: ASTM E 84, 20.
 8. Leakage Rate: ASTM E 283, less than 0.01 cfm/ft.2 at 1.57 psf (75 Pa) and 6.24 psf (300 Pa) pressure

2.5 ACCESSORIES

- A. Provide accessories per insulating system manufacturer's recommendations.
- B. Tape: Polyethylene self-adhering type for Kraft faced insulation.
 ***** [OR] *****
- C. Tape: Bright aluminum self-adhering type for foil faced insulation.
- D. Vapor Retarders: Comply with requirements of Section 07 26 00 "Vapor Retarders."
- E. Air Barriers: Comply with requirements of Section 07 27 00 "Air Barriers."

Insulation fasteners can be adhered or mechanically fastened to surfaces which are to receive insulation.

- F. Insulation Fasteners: Impale clip of galvanized steel; type recommended by insulation manufacturer for particular use intended.
- G. Wire Mesh: Galvanized steel, hexagonal wire mesh.
- H. Spindle Fasteners: [_____].
- I. Ventilation Baffles: Formed plastic, metal, or cardboard sized to fit full width of rafter spaces.
- J. Mechanical Insulation Fasteners: FM approved, corrosion resistant, size required to suit application.

PART 3 EXECUTION

3.1 GENERAL

- A. Comply with Manufacturer's Instructions for safety, preparation, and application of products.

3.2 EXAMINATION

- A. Verify that fire stopping is in place before beginning to apply the air infiltration barrier with flexible seal technology.
- B. Examine substrates, flashing conditions, penetrations, adjoining construction and the conditions under which work is to be installed.
 - 1. Verify that surfaces are dry and free of oil, grease, dust, rust, or other contaminant.
- C. Report unacceptable conditions.
- D. Do not proceed with the Work until unsatisfactory conditions have been corrected and surfaces are acceptable.
- E. Verify the following conditions have been sealed with the air infiltration barrier before installing insulation and before closing in framing cavities:
 - 1. Gaps between window units and framing.
 - 2. Gaps between door heads, jambs, and sills and wall framing.
 - 3. Interface of foundation or slab and sill plate.

Band joists and rim joists are the same thing; however, terminology varies in different regions of the country. Keep one that applies where the project will be built.

 - 4. Interface of band joists or rim joists and plates and subfloor.
 - 5. Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space.
- F. Verify the following work is complete before installing insulation and before closing in framing cavities:
 - 1. Vapor retarder or air barrier is installed at fireplace walls.
 - 2. Air sealing is provided between the garage and conditioned spaces.
 - 3. Vapor retarder or air barrier is installed in common walls between dwelling units.
 - 4. Recessed light fixtures are air tight, IC rated, and sealed to gypsum board.
 - a. Exception: Light fixtures in locations with conditioned spaces on both sides do not need to be air tight and do not need to be sealed unless required by another Section of the Project Manual.

3.3 PREPARATION

- A. Before beginning work, protect windows, plumbing fixtures, finish materials, and finish surfaces within work area from overspray by covering them with a plastic film. Secure edges of film to assure air leakage sealant with flexible seal technology does not get behind the film.
- B. Sweep area to receive air leakage sealant application to remove dust and other contaminants that will interfere with providing a thorough seal.

EnergyComplete™ air leakage sealant with Flexible Seal Technology will stain clothing and can stick to skin. Eyes, hands, and clothing should be protected from overspray.

- C. Wear chemical gloves, goggles or a face shield, a long sleeved shirt, and, if the installation site is dusty, a dust mask when applying EnergyComplete™ Air leakage sealant with Flexible Seal Technology.

EnergyComplete™ Air leakage sealant with Flexible Seal Technology is safe to install and DOES NOT require a chemical mask or fresh air ventilation suit, and other trades can work in the house while the flexible seal is being applied. However, products made by other manufacturers may require special safety procedures. Be sure to verify if safety measures are required before specifying other products.

- D. If using products other than EnergyComplete™ Air leakage sealant with Flexible Seal Technology that contain isocyanate, comply fully with OSHA regulations regarding protective clothing, breathing apparatus, ventilation, and restricting access to areas of application.

Select one or more of the material options in the paragraph below according to project requirements. If selecting only one of material options delete the “rigid, nonporous material such as...” option.

- 1. Fill, with fiberglass insulation, medium-sized gaps (gaps between 3/8 inch and 3 inches) between surfaces to be sprayed. Cover gaps greater than 3 inches with rigid, nonporous material such as gypsum board, expanded polystyrene insulation, extruded polystyrene insulation, sheathing, OSB, particle board, agrifiber particle board, or plywood secured to framing and apply sealant at the perimeter.

3.4 AIR LEAKAGE SEALANT WITH FLEXIBLE SEAL APPLICATION

- A. Apply in accordance with manufacturers instructions.
- B. Apply continuously and evenly to joints in the following conditions:
 - 1. At penetrations between conditioned and unconditioned spaces.
 - 2. At interface between the sheathing and stud where a sheathing seam is known to exist.
 - 3. At the interface between windows/doors and the framed opening.
 - 4. On the face of all top plates of exterior walls.
 - 5. On the face of all top plates of interior walls adjacent to the unconditioned attic space.
 - 6. At interface between the sill plate and foundation.
 - 7. At interface between the bottom plate and the sheathing.

- 8. At interface between the top plate and the sheathing.
- 9. At interface between the bottom plate and the subfloor or slab for first floor of slab-on-grade construction.
- 10. At any horizontal, mid-cavity sheathing seams.
- 11. At garage-to-house common wall, around the perimeter inside and out, as well as all penetrations.
- 12. At wall behind fireplace (block and seal).
- 13. At joist bays connecting exterior to conditioned space, such as at garage, porch, or overhang (block and seal).
- 14. At attic knee-walls (block and seal).
- 15. At insulated floor of room above unconditioned space, around perimeter and at penetrations.

The two items below refer to cases where a band joist(s) is a part of the building assembly.

- 16. At interface between the band joist and the plate below it.
 - 17. At interface between the band joist and the subfloor above it.
 - 18. At joist bays beneath cantilevered floors, such as for bay windows.
- C. Spray those gaps and penetrations filled with loose fill insulation during preparation and thoroughly cover them with spray foam.
 - D. Do not install air leakage sealant with flexible seal technology within 3" of a heat source.
 - E. Do not allow there to be excessive overspray.

3.5 INSTALLATION OF INSULATION, GENERAL

- A. Comply with 2009 IECC requirements indicated on Table 402.4.2 Air Barrier and Insulation Inspection Component Criteria.
- B. Install insulation system according to manufacturer's instructions.
- C. Do not install insulation on top of or within 3" of recessed light fixtures unless the fixtures are approved for such use.
- D. Install exterior thermal envelope insulation for framed walls in substantial contact and in continuous alignment with building envelope vapor retarder or air barrier.
- E. Install vapor retarder air barrier in dropped ceilings and soffits in substantial alignment with insulation.

Band joists and rim joists are the same thing; however, terminology varies in different regions of the country. Keep one that applies where the project will be built.

- F. Install insulation at band joists rim joists.
- G. In crawl spaces and where the underside of floors are exposed to unconditioned space, install insulation in permanent contact with underside of decking. Install vapor retarder or air barrier at exposed edges of insulation.

- H. Within exterior wall framing, install insulation between pipes and backside of sheathing. Cut insulation material as required to fit around wiring and plumbing.
- I. Where showers and bath tubs are located on exterior walls, install insulation and vapor retarder air barrier between units and exterior.

3.6 INSTALLATION OF LOOSE FILL INSULATION

- A. Install loose fill insulation in accordance with ASTM C 1015
- B. Install per manufacturer's label instructions to achieve desired R-value

3.7 INSTALLATION - BATT INSULATION

Delete paragraph below if no eave ventilation baffles will be used.

- A. Install batt insulation in accordance with ASTM C 1320.
- B. Install ventilation baffles at eaves to hold insulation down from roof sheathing and provide positive ventilation from eave to attic space.
- C. Install in exterior walls, roof and ceiling spaces without gaps or voids.
 - 1. Fluff insulation to full thickness for specified R-value before installation.
 - 2. Do not compress insulation.
- D. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- E. Fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within the plane of insulation.

Three paragraphs following refer to installation of insulation with factory applied membrane. Delete if inapplicable.

- F. Install with factory applied vapor retarder membrane facing warm side of building spaces. Lap ends and side flanges of membrane over or between framing members.
- G. Securing Insulation: Secure insulation in place using [the following method:] [the following methods where indicated on the drawings:] [one of the following methods:]

Select one or more of the appropriate option statements in the following paragraph. If selecting more than one, either indicate on the drawings where each type of attachment occurs or allow the contractor to make the choice.

- 1. Friction fit.
- 2. Staple or nail facing flanges in place at maximum 6 inches (150 mm) oc.
- 3. Tape in place.
- 4. Retain in place with spindle fasteners at [] inches ([] mm) oc.

- 5. Retain in place with wire mesh secured to framing members.
- H. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.

The 4 following paragraphs refer to installation of a separate sheet vapor retarder or air barrier within the building envelope.

Placement of vapor retarders or air barriers within the building envelope is critical and varies greatly depending on the climatic conditions and building code requirements where the project will be located. Consult local building code requirements and an Owens Corning representative for assistance in determining the proper placement of the vapor retarders or air barriers within the building envelope before beginning detailed drawings or editing this section.

Keep the following paragraph if the drawings clearly indicate the placement of the vapor retarders or air barriers within the building envelope.

- I. Place vapor retarder or air barrier where indicated on drawings.

***** [OR] *****

Keep the following paragraph if the installation requirements for the vapor retarder indicated in this section.

- J. Vapor Retarder Installation: Comply with requirements of Section 07 26 00 "Vapor Retarders."

***** [OR] *****

Keep the following paragraph if the installation requirements for the air barrier indicated in this section.

- K. Air Barrier Installation: Comply with requirements of Section 07 27 00 "Air Barriers."

***** [OR] *****

Keep the following paragraph and edit its associated subparagraphs to suit the project if the installation of the vapor retarder or air barrier is to be specified within this section.

- L. Vapor Retarder or Air Barrier Installation:
 - 1. Wood Framing: Place vapor retarder air barrier on warm side of insulation by stapling nailing 6 inches (150 mm) oc. Lap and seal sheet retarder joints over member face.
 - 2. Metal Framing: Place vapor retarder air barrier on warm side of insulation; lap and seal sheet retarder joints over member face.

- 3. Place insulation fasteners at [] inches ([] mm) oc.] Retain insulation in place with wire mesh secured to framing members. Tape seal tears or cuts in vapor retarder or air barrier.
- 4. Extend vapor retarder or air barrier tight to full perimeter of adjacent window and door frames and other items interrupting the plane of membrane. Tape seal in place.

3.8 CLEANING

- A. Remove plastic film coverings.
- B. Clean overspray from materials, equipment, and fixtures that were not to receive flexible seal technology.
- C. Remove damaged materials, equipment, and fixtures if overspray can not be cleaned without blemish and install new materials, equipment, and fixtures identical to item before damage occurred.

3.9 WASTE MANAGEMENT

Coordinate waste management requirements with NAHB National Green Building Standard™, USGBC LEED®, or other Sustainable Design Standard requirements as suits the project.

- A. Recycle empty containers and packaging according to requirements of Division 01 Section "Construction Waste Management and Disposal."