

**City of Portland, Maine - Building or Use Permit Application**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 06-1276	Issue Date:	CBL: 027 F002001
-----------------------	-------------	---------------------

Location of Construction: 27 MONUMENT SQ	Owner Name: <del>COHEN JOHN B</del> ALAN Mooney	Owner Address: 27 MONUMENT SQ	Phone:
Business Name:	Contractor Name: Air Temp	Contractor Address: 11 Wallace Ave South Portland	Phone: 2077742300
Lessee/Buyer's Name	Phone:	Permit Type: Hood Systems, Commerical	Zone: B-3

Past Use: Commercial	Proposed Use: Commercial/ install hood system	Permit Fee: \$120.00	Cost of Work: \$9,800.00	CEO District: 1
Proposed Project Description: Install hood system		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied NFPA 96	INSPECTION: Use Group: M/S2 Type: I Commercial FMC 1700 SYSTEM 2003	

Signature: *[Handwritten Signature]* Date: 09/10/06

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)  
Action:  Approved  Approved w/Conditions  Denied  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Permit Taken By: Idobson	Date Applied For: 08/30/2006	<b>Zoning Approval</b>	
-----------------------------	---------------------------------	------------------------	--

- This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
- Building permits do not include plumbing, septic or electrical work.
- Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

<b>Special Zone or Reviews</b> <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan	<b>Zoning Appeal</b> <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied	<b>Historic Preservation</b> <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Require? Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied
Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>OK with conditions</i> <i>9/21/06</i>	Date: _____	Date: _____

**PERMIT ISSUED**  
 SEP 18 2006  
 CITY OF PORTLAND

**CERTIFICATION**

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

# DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

## BUILDING INSPECTION

### PERMIT

Permit Number: 061276

Please Read Application And Notes, If Any, Attached

*ALAN MOONEY*

This is to certify that COHEN JOHN B / Air Tem

has permission to Install hood system

AT 37 MONUMENT SQ

027 F002001

PERMIT ISSUED  
SEP 18 2006

provided that the person or persons who accept this permit shall comply with all of the provisions of the Statutes of the State and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

ification of inspection must be given and when permission is procured before this building or part thereof is occupied or services closed-in. FOUR NOTICES REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

#### OTHER REQUIRED APPROVALS

Fire Dept. Craig Cass PFD

Health Dept. \_\_\_\_\_

Appeal Board \_\_\_\_\_

Other \_\_\_\_\_  
DepartmentName

*Michael Collins*  
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

*09/07/06*

**City of Portland, Maine - Building or Use Permit**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

<b>Permit No:</b> 06-1276	<b>Date Applied For:</b> 08/30/2006	<b>CBL:</b> 027 F002001
------------------------------	--	----------------------------

<b>Location of Construction:</b> 27 MONUMENT SQ	<b>Owner Name:</b> COHEN JOHN B	<b>Owner Address:</b> 27 MONUMENT SQ	<b>Phone:</b>
--	------------------------------------	---	---------------

<b>Business Name:</b>	<b>Contractor Name:</b> Air Temp	<b>Contractor Address:</b> 11 Wallace Ave South Portland	<b>Phone:</b> (207) 774-2300
-----------------------	-------------------------------------	---	---------------------------------

<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Hood Systems, Commerical
----------------------------	---------------	---

<b>Proposed Use:</b> Commercial/ install hood system	<b>Proposed Project Description:</b> Install hood system
---	---

**Dept:** Fire      **Status:** Approved with Conditions      **Reviewer:** Cptn Greg Cass      **Approval Date:** 09/01/2006**Note:**      **Ok to Issue:** 

1) Install shall comply with NFPA 96



# PORTLAND MAINE

*Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov*

Lee Urban- Director of Planning and Development  
Michael J. Nugent- Inspections Division Director

## Kitchen Exhaust System Checklist and Code Provisions

Dear Applicant,

The following is a checklist to assist you in filing for a permit for a Kitchen Exhaust system. The applicable Mechanical Code provisions have also been attached. Please complete this and submit job specific construction documents that demonstrate compliance with the attached information.

### Type of System:

Type I  X  Type II \_\_\_\_\_

(Type I systems are systems that vent fryers, grills, broilers, ovens or woks. Type II systems are systems that vent steamers and other non grease producing appliances)

### Type of Materials:

Is the hood Stainless steel or other type of steel?  YES  If Other, what Type? \_\_\_\_\_

Is the duct work Stainless steel or other type of steel?  OTHER  If Other, what type?  16 Ga. WELDED

Thickness of the steel for the hood  18 Ga. 304 SS

Thickness of the duct for the hood  16 Ga.

Type of Hood and Duct supports

4- 3/8" THREADED ROD TO UNISTRUT SPANNING A JOIST

Type of seams and Joints  WELDED

Grease Gutters provided? YES

Hood Clearance from Combustibles materials 18" REDUCED TO 0" PER 507.9

Duct Clearance from Combustibles materials ZERO CLEARANCE

Vibration Isolation System:

INTEGRAL TO UL LISTED FAN

Air Velocity within the duct system 1800 FPM

Grease accumulation prevention system

GREASE TROUGH FULL LENGTH OF HOOD AND GREASE TROUGH ON EXHAUST FAN

Cleanouts YES

Grease Duct enclosure FIREMASTER EASTWRAP + 1 1/2" INSULATION

Exhaust Termination ROOF 1.4 11.2" ROOF DRAIN

Fire Suppression

system ANSUL FIRE SUPPRESSION SYSTEM

✓ Exhaust fan mounting and clearance from the roof or wall VERTICAL, UPBLAST 12'-6" FROM WALL LIFE AHEAD

Exhaust fan distance from other vents or openings 15+

Exhaust fan height above adjoining grade 25+

### Hood Specs

Style of hood WALL HUNG BACKSHELF HOOD

Type of Filter: 2" BAFFLE TYPE STAINLESS STEEL

Height of filter above nearest cooking surface: 18" to 24"

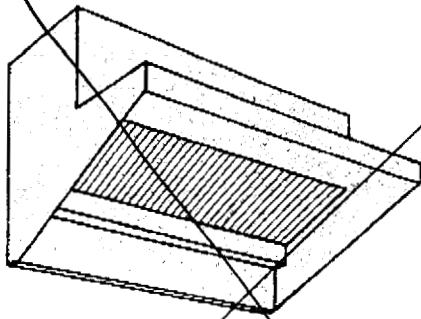
Capacity of hood in CFM 2700 CFM

Make up Air system description and capacity

TRANE MODEL TWE180 2700 CFM

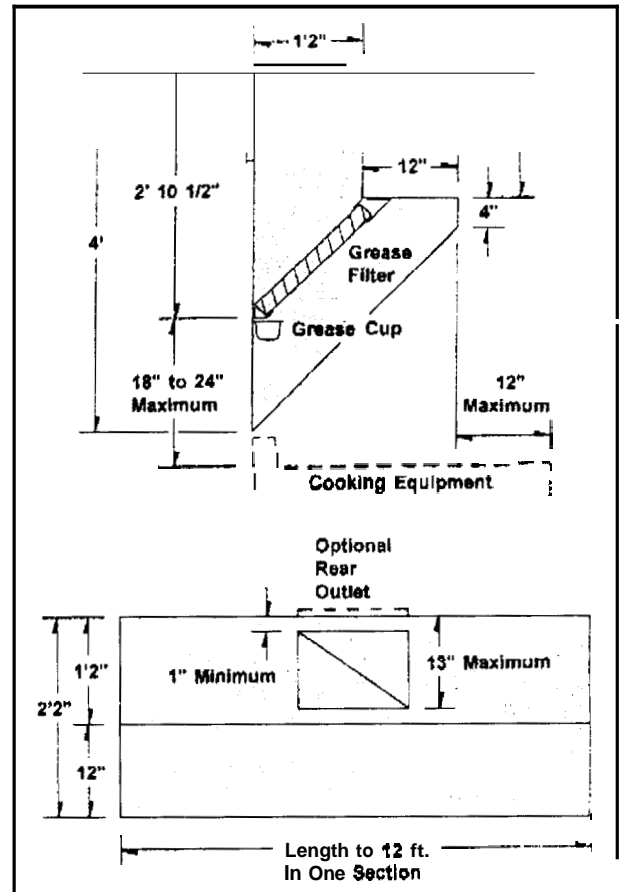
# MODEL KC

## Wall Hung Backshelf Hood



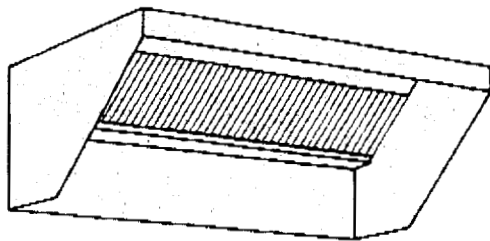
KEES Model KC commercial backshelf kitchen hood is an exhaust only unit designed for removal of heat and grease laden air from above kitchen equipment cooking surfaces. Front ledge allows for storage.

Typical applications include wall hung over ranges, fryers, griddles, or countertop equipment,



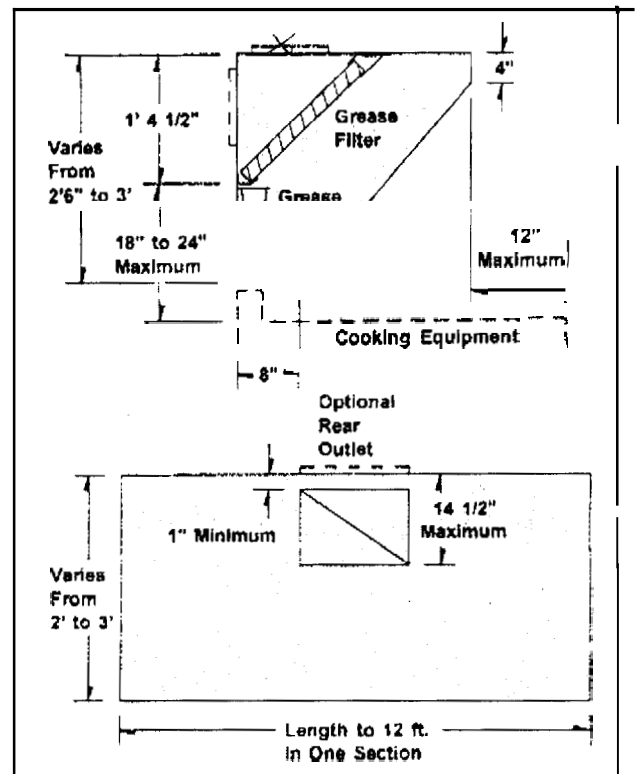
# MODEL KD

## Wall Hung Backshelf Or Counter Type Hood



KEES Model KD commercial backshelf or counter type kitchen hood is an exhaust only unit designed for removal of heat and grease laden air from above kitchen equipment cooking surfaces. Low profile height allows for storage and/or pass-over shelf.

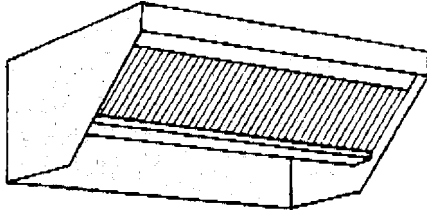
Typical applications include wall hung or countertop installation over ranges, fryers, griddles, or countertop equipment.



## MODEL KE

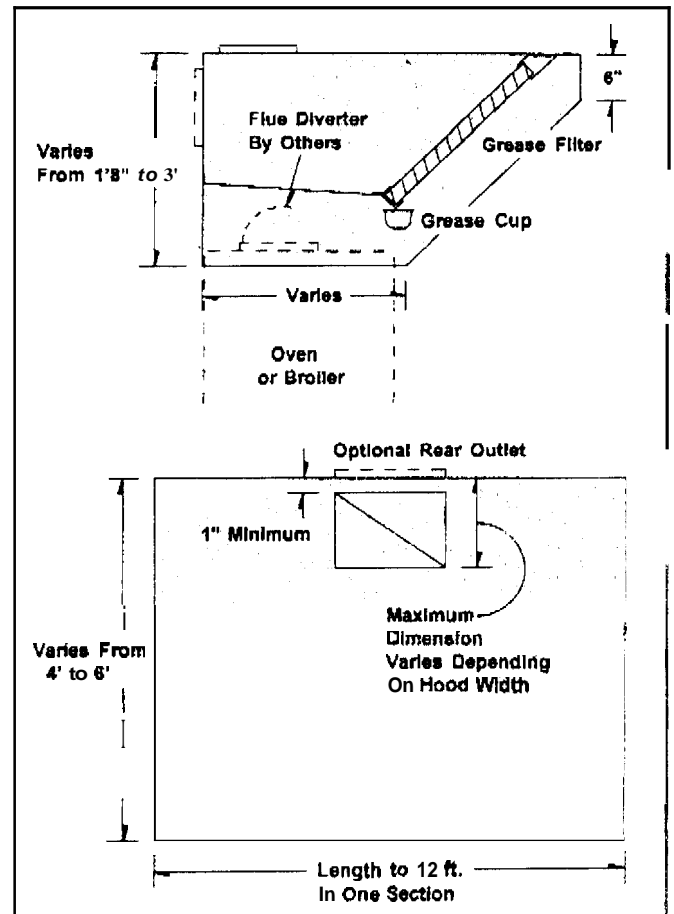
### Ceiling Or Equipment Mounted

- Broiler
- Oven Type Hood
- Pizza Hood



KEES Model KE commercial oven or broiler kitchen hood is an exhaust only unit designed to remove heat and grease laden air from above ovens or broilers.

Typical applications include ceiling hung or equipment mounted installation over ovens & broilers



## MODELS KC, KD & KE

### Construction Features

Hood construction meets National Fire Protection Association (NFPA) Bulletin #96 standards and is National Sanitation Foundation (NSF) listed.

Type 304 stainless steel, #3 polish

- 18 gauge standard material thickness

Exterior seams continuously welded, liquid tight, ground and polished

UL Classified aluminum baffle filters standard

### Options

- Factory welded exhaust collar
- Other Material gauges
- Stainless steel baffle filters
- Enclosure panels to ceiling
- Side skirts
- Floor supports
- Back splash

# PERFORMANCE OF MODELS KC, KD AND KE

MODELS KC AND KD				MODEL KE	
LENGTH	HEAVY COOKING CFM (350/FT)	MEDIUM COOKING CFM (300/FT)	LIGHT COOKING CFM (200/FT)	OVENS SINGLE DECK CFM (150/FT)	OVENS 2 OR MORE DECKS CFM (200/FT)
3'-0" 3'-6"	1050 1225	900 1050	600 700	450 525	600 700
4'-0" 4'-6"	1400 1575	1200 1350	800 900	600 675	800 900
5'-0" 5'-6"	1750 1925	1500 1650	1000 1100	750 825	1000 1100
6'-0" 6'-6"	2100 2275	1800 1950	1200 1300	900 975	
7'-0" 7'-6"	2450 2625	2100 2250	1400 1500	1050 1125	1400 1500
8'-0" 8'-6"	2800 2975	2400 2550	1600 1700	1200 1275	1600 1700
9'-0" 9'-6"	3150 3325	2700 2850	1800 1900	1350 1425	1800 1900
10'-0" 10'-6"	3500 3675	3000 3150	2000 2100	1500 1575	2000 2100
11'-0" 11'-6"	3850 4025	3300 3450	2200 2300	1650 1725	2200 2300
12'-0"	4200	3600	2400	1800	2400

**Heavy cooking:** heavy-duty equipment, ranges, fryers and broilers.

**Medium cooking:** ranges, ovens, and cafe line equipment.

**Light cooking:** steam equipment, steamers, and kettles.

**NOTE:** IN ALL CASES, STATE AND LOCAL CODES SUPERCEDE THESE GUIDELINES.

## Typical Specifications

Provide KEES Model (KC, KD, KE) exhaust only (backshelf, backshelf/counter, broiler/oven or pizza) type hood(s) constructed of 18 gauge type 304 stainless steel with #3 polish of sizes as indicated.

All exterior seams shall be continuously welded, liquid tight, and ground and polished to match the original finish of the material.

The filter housing and full length pitched grease trough shall be of 18 gauge type 304 #3 polish stainless steel with removable stainless steel grease container. Filters shall be U.L. Classified, 2" thick baffle type constructed of aluminum (stainless steel) and shall be of full hood length and of height to assure optimal performance as specified by the filter manufacturer.

Hood(s) shall be fabricated in accordance with National Fire Protection Association (NFPA) Bulletin #96, and shall be National Sanitation Foundation (NSF) listed and bear the NSF seal.

### KEES INCORPORATED

400 S Industrial Drive ■ P O Box L  
Elkhart Lake, WI 53020  
920-876-3391 ■ Fax 920-876-3065  
www kees.com

To maintain KEES' policy of continuous product improvement, we reserve the right to change prices, specifications, ratings or dimensions without prior notice or obligation.





# COOK

**MARK: EF1**  
**PROJECT: 28 MONUMENT SQ**  
**DATE: 08-28-2006**

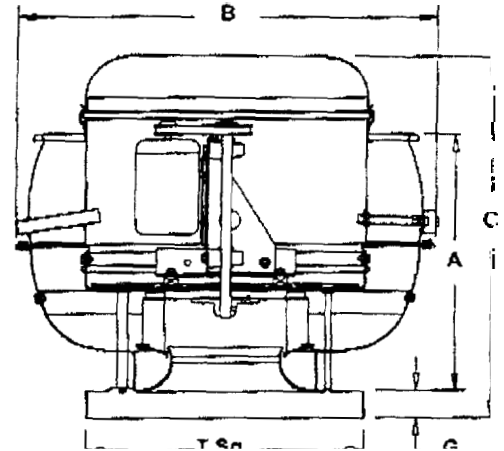


## VCR

**Upblast Centrifugal  
 Exhaust Ventilator  
 Roof Mounted/Belt Drive**

### STANDARD CONSTRUCTION FEATURES:

All aluminum housing - Backward inclined all aluminum wheel - Two piece top cap with stainless steel quick release latches - One piece bottom spinning - Welded curb cap corners - Lifting Lugs - Permanently lubricated ball bearing motors - Static resistant belts - Adjustable pitch drives through 5 hp motor - Corrosion resistant fasteners - Regreasable bearings in cast iron pillow block housing, rated at 200,000 hours average life - All fans factory adjusted to specified fan RPM - Transit tested packaging.



### Performance

Qty	Catalog Number	Flow (CFM)	SP (inwc)	Fan RPM	Bhp (HP)
1	180V6B	2700	1	1077	.749

Altitude (ft): 1270 Temperature (F): 70

### Motor Information

HP	RPM	Volts/Ph/Hz	Enclosure	Mounted
3/4	1725	200/3/60	ODP	Yes

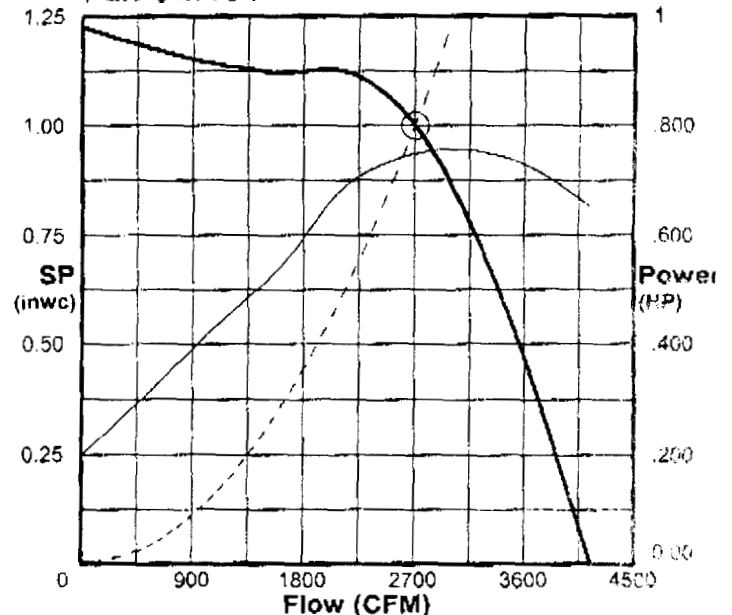
A	24-13116
B	39-7/16
C	35-7/8
G	3
T Sq.	30
Roof Open. Sq.*	25-1 1/2
Unit Wt(lbs)***	131

1	2	3	4	5	6	7	8	LwA	dBA	Sones
73	79	82	70	63	62	58	55	76	64	13.1

### Accessories:

PRE-WIRED STD DISCONNECT NEMA 3  
 UL762 (327Y-300DEG)  
 KEYWAY GREASE TROUGH

**Fan Curve** (MaxRPM Non-Reinforced Wheel = 1610)



### Fan Curve Legend

CFM vs SP	—
CFM vs HP	—
System Curve	.....
Point of Operation	○

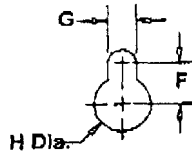
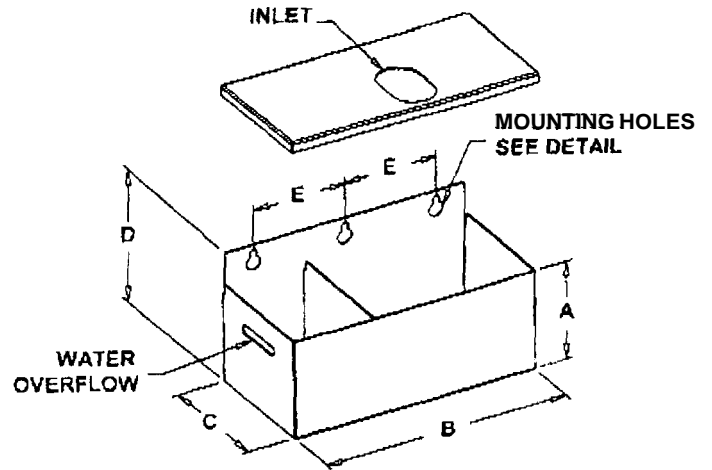


# COOK

## Grease Trough Keyway Mount

### STANDARD CONSTRUCTION FEATURES:

All aluminum ,063 construction - Continuously welded trough housing corners - Removable lid for servicing - Slotted mounting holes for easy removal - Baffled design for extended capacity.



MOUNTING HOLE DETAIL

Mark	Qty	Description	A	B	C	D	E	F	G	H Dia.
EF1	1	KEYWAY GREASE TROUGH	5	12	6-1/16	6-1/2	4-1/2	1/2	3/8	11/16

## Limited Warranty

Loren Cook Company warrants that your Loren Cook fan was manufactured free of defects in materials and workmanship, to the extent stated herein. For a period of one (1) year after date of shipment, we will replace any parts found to be defective without charge, except for shipping costs which will be paid by you.

This warranty is granted only to the original purchaser placing the fan in service.

This warranty is void if the fan or any part thereof has been altered or modified from its original design or has been abused, misused, damaged or is in worn condition or if the fan has been used other than for the uses described in the company manual. This warranty does not cover defects resulting from normal wear and tear.

To make a warranty claim, notify Loren Cook Company, General Offices, 2015 East Dale Street, Springfield, Missouri 65803-4637, explaining in writing, in detail, your complaint and referring to the specific model and serial numbers of your fan. Upon receipt by Loren Cook Company of your written complaint, you will be notified, within thirty (30) days of our receipt of your complaint, in writing, as to the manner in which your claim will be handled. If you are entitled to warranty relief, a warranty adjustment will be completed within sixty (60) business days of the receipt of your written complaint by Loren Cook Company.

This warranty gives only the original purchaser placing the fan in service specifically the right. You may have other legal rights which vary from state to state.

The motor manufacturer warrants motors for a designated period stated in the manufacturers warranty. Warranty periods vary from manufacturer to manufacturer. Should motors furnished by Loren Cook Company prove defective during the designated period, they should be returned to the nearest authorized motor service station. Loren Cook Company will not be responsible for any removal or installation costs.

### Product Data and Installation Guide



NFPA 96 IMC

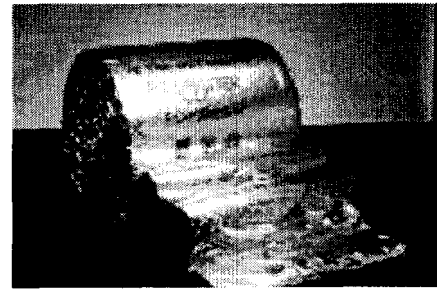
**1. Product Description** - New and Improved **FastWrap+** Thermal Ceramics new and improved **FastWrap+** is a one-layer, totally foil-encapsulated, non-combustible 2000°F (7093°C) rated, low biopersistence, flexible fireproofing wrap specifically tested to provide a 1 or 2 hour fire rated enclosure for horizontal and vertical commercial kitchen grease and air ventilation ducts. The core blanket chemistry is alkaline-earth silicate wool free of binders and lubricants. **FastWrap+** is classified by Omega Point Laboratories and Underwriter's Laboratories Listing and Follow-up Service Program to ensure uniform thickness and density specifications, thus providing consistency in end physical properties for required fire ratings. **FastWrap+** is a proven performance alternative through extensive testing to 1 or 2 hour fire-resistance rated shaft enclosures. With its excellent insulating capability of withstanding fire condition temperatures up to 2000°F (1093°C), it protects combustible constructions at zero clearance throughout the entire enclosure system. When the duct penetrates fire rated walls and floors, an approved silicone firestop sealant used in combination with **FastWrap+** provides an alternate means of protection to rigid shafts by maintaining the integrity of the 1 or 2 hour fire rated wall and floor assembly. **FastWrap+** is resistant to mold growth in test conditions of 75-95% relative humidity (ASTM D6329).

#### Product Features

- One-layer system with 3 optional installation techniques
- Low biopersistent insulation blanket
- Does not contain low temperature fiberglass or mineral wool
- Shaft alternative to rigid board systems
- Zero clearance to combustibles protection throughout the entire enclosure system
- Lightweight, flexible wrap saves labor
- Passive fire proof material does not shrink, become brittle, or lose fire fighting capabilities with age
- Totally foil encapsulated system protects against material degradation, and potential fire hazards
- Product markings on foil ensure proper material identification for easy inspections
- Wide variety of through-penetration systems
- Resistant to mold growth

#### 2. Applications

- 1 or 2 Hour Commercial Kitchen Grease Duct Enclosure
- 1 or 2 Hour Air Ventilation Duct Enclosure



#### 3. Physical Characteristics

Duct FireMaster Fire Protection Product	Unit	Size	Units/Ctn.	Wt./Ctn.
FastWrap+	Roll	1 1/2" x 24" x 25' (38.1mm x 610mm x 7.6m)	1	37.5 lbs. (17 kg)
FastWrap+	Roll	1 1/2" x 48" x 25' (38.1mm x 1.2m x 7.6m)	1	75 lbs. (34 kg)
FastWrap+ Collar	Roll	1 1/2" x 6" x 25' (38.1mm x 152mm x 7.6m)	4	53 lbs. (24 kg)
Color	White	blanket with silver foil encapsulation		

Application	Fire Resistive Rating	Enclosure System	Through Penetration System
Grease Ducts	1 or 2 hours	1 layer, 1 1/2" FastWrap+, perimeter and longitudinal overlap 3" (75 mm), GD 544 F, GD 562 F, UL G-14	OPL FS 587F ULC-AJ-7098
Air Ducts	2 hours	1 layer, 1 1/2" FastWrap+, perimeter and longitudinal overlap 3" (75mm), UL V-19	C-AJ-7095, UL-w-L-7121 UL-F-C-7036 UL-F-C-7037

#### 5. Performance

##### A. Thermal Ceramics **FastWrap+** Duct **FireMaster** Fire Protection Product

Foil:	Flamespread	5
	Smoke developed	10
Blanket:	Flame spread	0
	Smoke developed	0
Thermal Resistance	R value per ASTM C 518 4.15 per inch at 70°F (21°C)	

Tremco Inc.	Fyre Sil sealant or Fyre-Sil S/L Sealant (for floor assemblies only)
Specified Technologies Inc.	Pensil 300
Rectoseal	835+ Sealant
HILTI Construction Chemicals, Division of HILTI Inc.	FS One Sealant

Agency	Reference Standard/File No.
Omega Point Laboratories, Inc.	Listing# 11660-3
Underwriters Laboratory	Grease Duct Enclosures (HNKT): G-14; Fire Resistive Ventilation Duct Assemblies (HNLJ): V-19; Through-Penetration FireStop System (XHEZ): C-AJ-7095, C-AJ-7098
NFPA 96	Section 4.3.1, 2004 Edition (TIA-04-02)
International Mechanical Code	Section 506.10.3 Commercial Kitchen Grease Ducts and Exhaust Equipment, Section 507 Commercial Kitchen Hoods, 2006 Edition
New York MEA	412-02-M, 413-02-M
International Code Council	SBCCI Legacy Report No. 9424E BOCA Legacy Report No. 22.25
City of Los Angeles	RR8425
California State Fire Marshal	2440-1361:103 2440-1361:105

alternate their directions and appear on every other blanket.

- **Butt Joint & Collar System** - Adjacent blankets are butted tightly together and a 6" (152mm) wide collar of FastWrap+ is centered over the joint, overlapping each blanket by 3" (75mm) as shown in Figures 1 and 3.
- **2 & 3 Sided Enclosure System** - When space does not allow for full wrap enclosure on all four sides of the duct, the FastWrap+ may be installed on 2 or 3 sides of the duct and mechanically attached to a concrete or CMU assembly on the unexposed side of the duct.

#### General:

To minimize waste, material should be rolled out tautly before measuring. Cut edges of the blanket shall be taped with aluminum foil tape to prevent exposed edges of the insulation from wicking moisture from condensation or grease from a compromised leaking duct joint into the material and causing degradation of the fire barrier. The FastWrap+ material may be installed with either a mechanical banding system or insulation pins and clips (see Mechanical Attachment Methods below and Figures 1 and 3). When using the banding technique, caution shall be taken to ensure that the bands are not fitted too snug as which could result in cutting into the blanket. To prevent blanket sag on ducts with dimensions greater than or equal to 24" (600 mm), insulation pins, long enough to extend through the layers of blanket insulation, are welded to the duct in columns spaced 12" (305mm) apart, between 6" and 12" (152 and 305 mm) from each edge and 10½" (267mm) on center along the bottom horizontal and outside vertical duct runs. Insulation pins that extend beyond the blanket wrap shall be tuned down to eliminate sharp points. Support hanger systems do not need to be wrapped provided that the steel hanger rods are at least a minimum of ⅜" (9.5 mm) diameter and the steel angle is a minimum of 1½" x 1½" x ⅛" (38 mm x 38 mm x 3.2 mm), or SMACNA equivalent support system (SMACNA band strap support systems do not apply). Horizontal trapeze support systems may be incorporated into the wrap enclosure.

#### A. Overlap Wrap Telescope Installation

FastWrap+ commercial kitchen grease or air ventilation duct 1 or 2 hour enclosure includes a one-layer wrap construction applied directly to all surfaces of the duct (Figures 1 and 3). The FastWrap+ blanket is wrapped one layer 1½" (38.1 mm) or 2" (50 mm) thick around the perimeter of the duct with a length cut to provide enough excess to overlap itself not less than 3" (75 mm). Adjacent blankets are placed to overlap the previous blanket not less than 3" (75 mm). The overlap made by adjacent blankets forms the "longitudinal" overlap. The overlap a blanket makes with itself is called the "perimeter" overlap. The wrap layer may be held temporarily in place with filament tape 1½" (38mm) from each blanket edge and in the center of the blanket until the mechanical banding or pinning and clip attachment method is secured.

#### B. Checkerboard Wrap Installation

FastWrap+ is cut to completely wrap around the perimeter of the duct with enough excess to provide an overlap of not less than 3" (75mm) (Figures 1 and 3). The blankets with both edges exposed alternate with blankets with covered edges as shown in Figures 1 and 3. The visible edges of the longitudinal overlaps alternate their directions and appear on every other blanket. A 3" (75mm) longitudinal overlap is installed onto the previous adjacent wrap forming a "checkerboard" construction. The wrap layer may be held temporarily in place with filament tape 1½" (38mm) from each blanket edge and in the center of the blanket until the mechanical banding or pinning and clip attachment method is secured.

### C. Butt Joint / Collar Installation

FastWrap+ is installed in a single layer directly to the duct with a tight butt joint construction (Figures 1 and 3). The FastWrap+ material may be held in place with filament glass tape 1½" (38 mm) from each blanket edge and in the center of the blanket temporarily until the mechanical banding or pinning and clip attachment method is secured. A 6" (152 mm) wide FastWrap+ Collar is centered over the joints overlapping on each side of the blanket joint 3" (75 mm).

### D. 2 & 3 Sided Wrap System

When space does not allow for a complete wrap applied to the duct on all four sides, the FastWrap+ can be installed in a single layer on the 2 or 3 sides of the unexposed duct and mechanically attached to a concrete or CMU assembly. The FastWrap+ is installed on the duct as described in one of the three installation methods described above with the starting edge of the blanket attached to the concrete or CMU assembly and then wrapped around the duct until the other end can be affixed to the other concrete or CMU assembly, thus encapsulating the duct with insulation around all accessible sides. The blanket is to flange out onto the concrete or CMU assembly. It should be secured to the adjoining assembly with minimum ¾" (4.7 mm) diameter, 4" (100 mm) long concrete anchors, footed to a minimum 1½" (38 mm) wide x ¾" (4.7 mm) thick steel strip/strap with pre-drilled holes spaced a maximum 10" (254 mm) on center. The FastWrap+ insulation wrap is secured to the duct with banding (see Mechanical Attachment Methods for Insulation Wrap section below or Figures 1 and 3). The ends of the banding are to loop into the steel strips/straps that foot the blanket to the concrete floor or wall, and are tightened down. The trapezoid support system may be incorporated within the wrap system.

#### Mechanical Attachment Methods for Insulation Wrap

**1. Banding** - ½" (12.7 mm) wide carbon steel or stainless steel banding, 0.015" (0.376 mm) thick, is placed around the entire perimeter of the insulated duct with maximum 10½" (267 mm) spacing centers and 1" (38 mm) from each blanket edge or 1" (25 mm) from each collar edge when using the butt joint and collar method. When banding, filament tape can be used to temporarily hold the blanket in place until the banding is applied. The banding is placed around the material and tightened so as to firmly hold the FastWrap+ in place against the duct, but not cause any cutting or damage to the blanket.

**2. Pinning** - Min. 12 gage, 5" long (125 mm) steel insulation pins are welded to the duct at all blanket overlap locations (see Figures 1 and 3) spaced in rows max. 10½" (267 mm) on center and maximum 8" (200 mm) apart. An insulation pin is located in the middle of the perimeter overlap and center spaced between the pins. Pins are locked into place with 1" (38 mm) diameter square or round, galvanized steel, speed clips or cup head pins. Pins that extend beyond outer blanket wrap layer shall be turned down to eliminate sharp edges or the excess length cut off.

NOTE: Pinning is required for grease ducts larger than 24" x 48".

#### Through-Penetration Firestop System

When the duct penetrates a concrete or drywall fire rated wall, ceiling, or floor, an approved fire stop system must be employed. (Figures 2 and 4). FastWrap+ approved through penetration fire stop systems are listed in Section 4, Specifications.

To fire stop the through penetration void area, cut strips of FastWrap+ 4" (106 mm) wide and as long as the opening and install at a minimum 50% compression. Install the strips so that they are recessed ¼" (6.35 mm) from the top surface of the wall or floor. Install a minimum ¼" (6.35 mm) depth of an approved silicone firestop sealant into the opening to the recess around the top surface of the floor or wall through-penetration opening.

### Grease Duct Access Door Installation

Four galvanized steel threaded rods, ¼" diameter (6.35 mm) by 4" to 5" long (114 to 125 mm) are welded to the duct at the corners of the door opening. Four 5" (125 mm) long 12 gage insulation pins are welded to the door panel for installation of the blanket. Two layers of FastWrap+ are installed on the door. The first layer is cut and placed on the pins and over the access opening with a ½" (13 mm) overlap. When the door is installed, this first layer is compressed and fitted against the wrap surrounding the door opening to form a tight butt joint. The second layer is centered over the first piece so that a minimum 1" (25 mm) overlap exists around the perimeter. It is essential that this layer fit tightly against the wrap surrounding the access door opening with no through openings. The second layer is impaled over the pins and both layers are locked in place with speed clips. Pins that extend beyond the outer layer of FastWrap+ shall be turned down to avoid sharp points on the door.

The insulated door panel and the steel tubes are placed over the threaded rods and held in place with washers and wing nuts. The steel tubes hold the door to the duct and protect the wrap from damage as the door is removed. Alternatively, insulated pre-fabricated access doors are available from dealers. See the Thermal Ceramics FastWrap+ Design and Installation Manual for complete installation and drawing details.

### 8. Maintenance

No maintenance is required when installed in accordance with Thermal Ceramics installation instructions. Once installed, if any section that is greater than 8" x 8" is damaged or if the overlap area is damaged, the following procedures will apply:

- The damaged section should be removed by cutting the steel banding or removing the clips holding it in place
  - A new section of the same dimension should be cut from a roll of FastWrap+, either 24" (670 mm) or 48" (1220 mm) wide. Cut edges of the blanket shall be taped to prevent exposed edges of the insulation from wicking moisture or grease into the material and degradation of the fire barrier
  - The new section should be placed per Thermal Ceramics manufacturer's Installation Instructions ensuring the same overlap that existed previously
  - The steel banding should be placed around the material and tensioned so as to sufficiently hold the FastWrap+ in place without cutting the blanket
  - If the blanket has not been damaged but the foil has ripped, seal the opening with aluminum foil tape
- For damaged areas less than or equal to 8" X 8" the following procedure may be used.
- The damaged section should be removed by cutting out a square or rectangular that includes the damaged area and does not exceed 8" in width or length.
  - A repair section should be cut from a section of FastWrap+ that is 1" wider and 1" longer than the damaged area that has been removed. Cut edges of the blanket shall be taped to prevent the exposed edges of the insulation from wicking moisture or grease into the material.
  - A single min. 12 Gauge insulation pin min. 3" long should be welded to the grease duct in the center of the repair area. (Note: Cup head pins may also be used.)
  - The repair section is to be centered on the opening and impaled upon the insulation pins. All overlaps should be tucked into the repair opening to provide a tight fitting joint. Insulation is held in place with a 1½" square or round galvanized or stainless steel speed clip or a minimum 1" diameter cup head pin. The excess portion of the pin shall be cut off and/or turned down to eliminate sharp edges.
  - The joint should be sealed using aluminum foil tape.

**9. Limitations**

- FastWrap+ shall be installed in accordance with Thermal Ceramics - Installation Instructions
- Multiple steel ducts in a single FastWrap+ enclosure system are not permitted for commercial kitchen grease ducts. Multiple steel ducts in a single enclosure are permitted for air ventilation ducts
- Grease Duct Sizes > 24"x48" (600 mm x 1200 mm) insulation is attached using steel pins
- Air Ducts: when maximum duct size dimensions are greater than 8 4 x 21" (2100 mm x 525 mm) in cross section, reinforce the duct with steel angles sufficient to support the total weight of the duct assembly and the FastWrap+ enclosure
- Minimum 3/8" (9 mm) diameter all thread steel rods do not have to be insulated
- Horizontal support members may be incorporated into the enclosure wrap
- The integrity of FastWrap+ system is limited to the quality of the installation

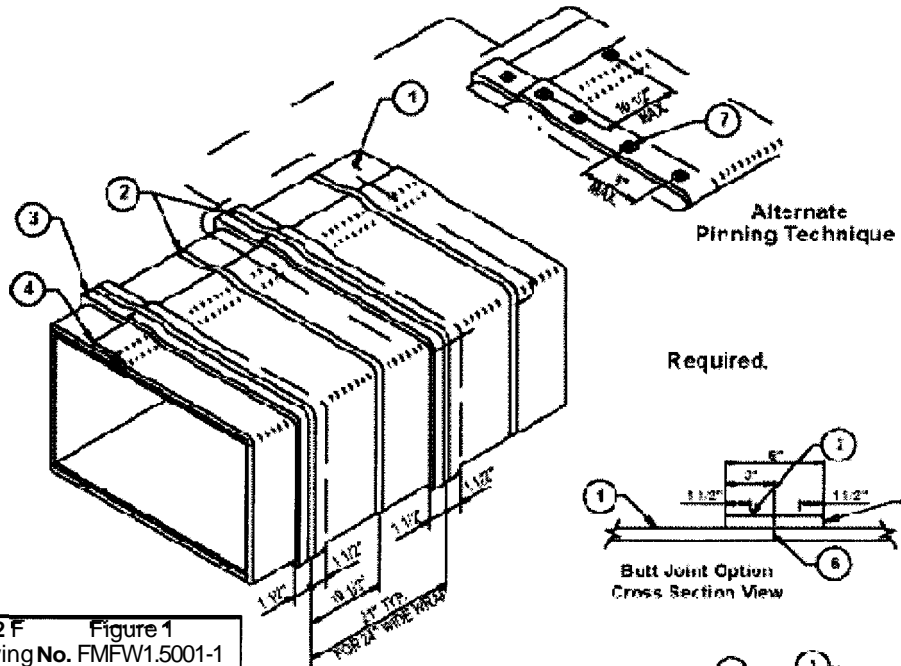
*For personal protective equipment recommendations see the MSDS.*

*Thermal Ceramics is a trademark of Morgan Crucible Company plc. and FastWrap are trademarks of Thermal Ceramics Inc. FastWrap products are manufactured by Thermal Ceramics Inc. Duct Systems are distributed by authorized distributors and no longer by 3M.*

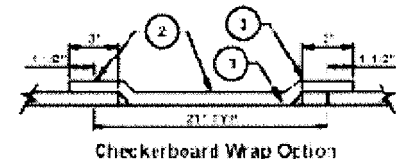
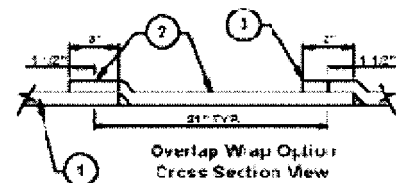
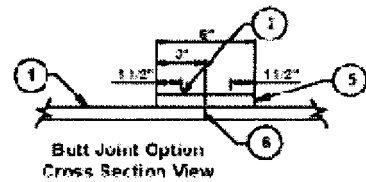
*Tremco and Fyre-Sil are tradenames of Tremco Inc.  
 Pensil is a tradename of Specified Technologies Inc.  
 835+ is a tradename of Rectorseal.  
 FS One is a tradename of HILTI Inc.*

**Special Note:**

The original **FastWrap+ 2"** technical data and installation sheet is still available electronically at [www.thermalceramics.com](http://www.thermalceramics.com) in the data sheets section.

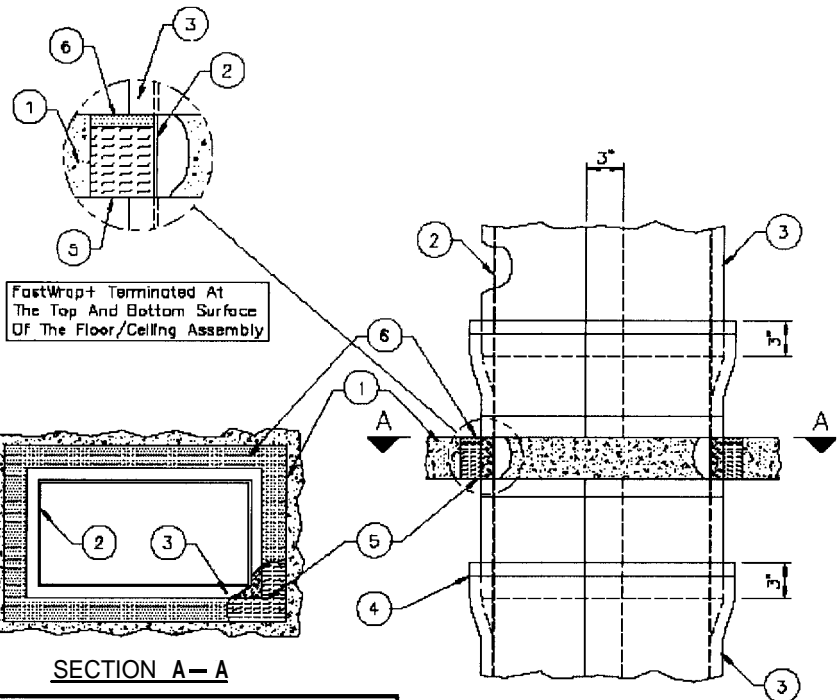


**Required.**



OPL Design No. GD 544 F and GD 562 F      Figure 1	
UL Design No. G-14 and V-19      Drawing No. FMFW1.5001-1	
1	One layer FastWrap+ 1 1/2" thick
2	Steel banding 3/8" wide minimum
3	3" minimum longitudinal overlap
4	3" minimum perimeter overlap
5	6" wide FastWrap+ collar (for Butt Joint option)
6	Firmly butted joint (for Butt Joint option)
7	10 or 12 gauge steel insulation pin with 1 1/2" x 1 1/2" or 1 1/2" diameter galvanized steel dips (for alternate pinning)

**New and Improved 1 1/2" FastWrap+ Through Penetration System  
1 or 2 Hour  
Grease or Air Duct**



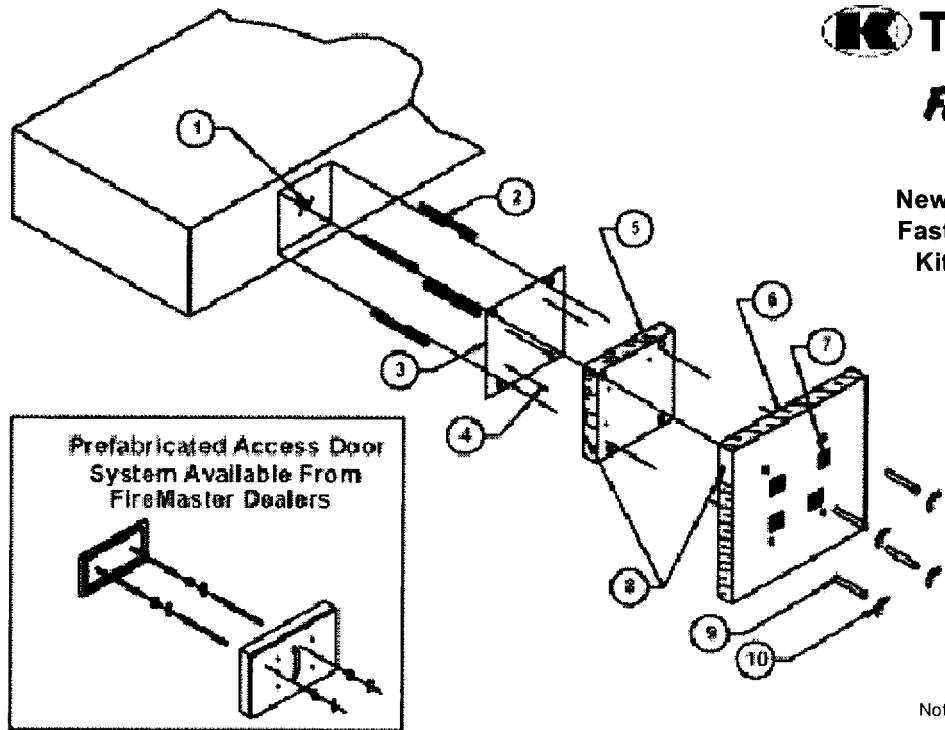
FastWrap+ Terminated At The Top And Bottom Surface Of The Floor/Ceiling Assembly

FastWrap+ Continuous Through The Floor/Ceiling Assembly

OPL Design No. FS 587 F		Figure 2	
UL Design Nos. C-AJ-7095, C-AJ-7098, W-L-7121, and F-C-7036			
Drawing# FMFW1.5003-1			
1	Floor/ceiling or wall assembly	6	Approved Through Penetration FireStop System
2	Duct		
3	One layer FastWrap+ 1" thick		
4	Steel banding 1/2" wide minimum or pinning		
5	FastWrap+ (packing material)		

Note: The integrity of Duct Firemaster Product is limited to the quality of the installation.

**New and Improved 1 1/2" FastWrap+ Commercial Kitchen Grease Duct Access Door**



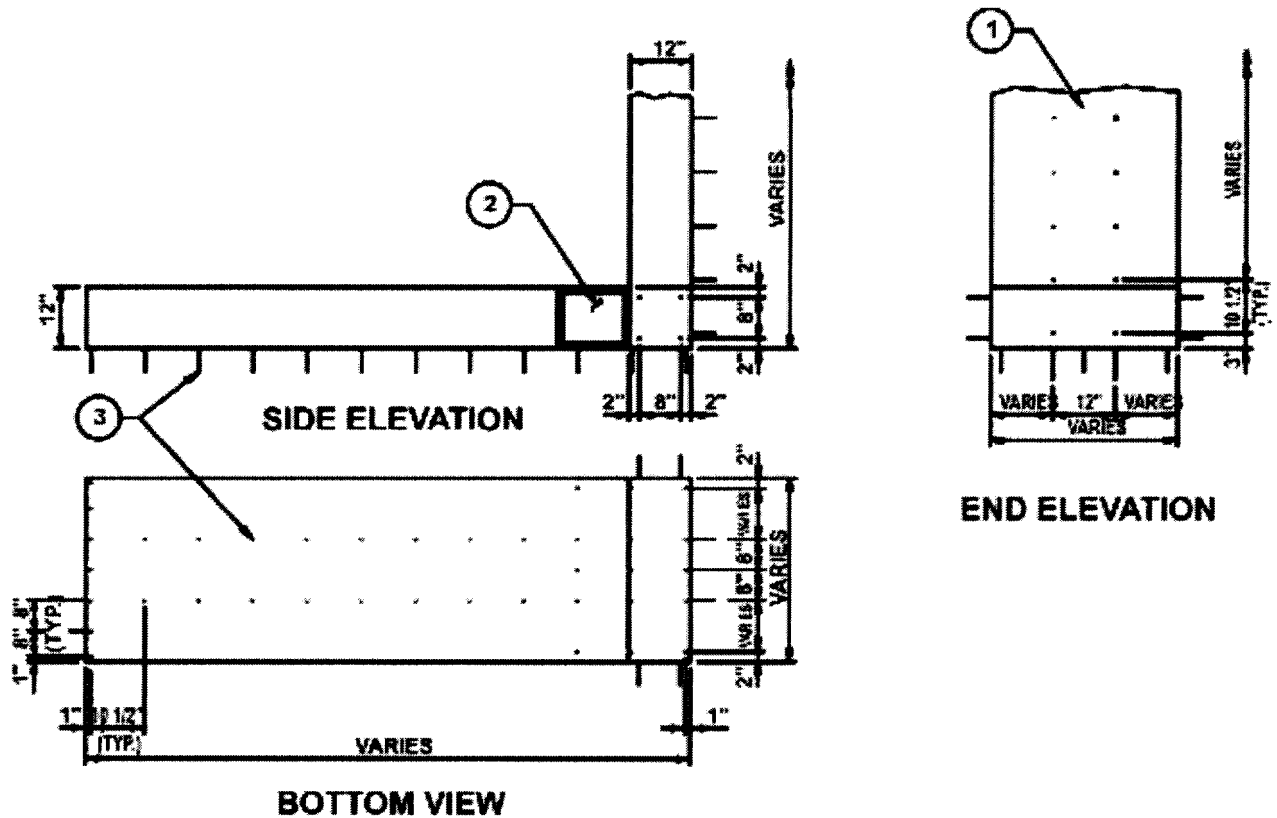
Prefabricated Access Door System Available From FireMaster Dealers

OPL Design No. GD 544 F and GD 562 F		Figure 3	
UL Design No. G-14 and V-19			
Drawing No. FMFW1.5001-1			
1	Door hole	6	One layer FastWrap+ 1" overlap
2	1/4" diameter all threaded rods	7	Speed clips
3	Access cover 16 gauge	8	Aluminum tape at edges
4	Insulation pins welded	9	Spool pieces for threaded rods
5	One layer FastWrap+ 1 1/2" thick	10	1/2" diameter wing nuts

Note: The integrity of Duct Firemaster Product is limited to the quality of the installation.



**New and Improved I'M' FastWrap+ Commercial Kitchen Grease Duct  
Typical Insulation Pin Layout for Duct Spans  $\geq 24"$  Wide to Prevent Blanket Sag**



Installation Pin Layout		Figure 4
		Drawing No. FMFW1.5004
1	Vertical section	
2	Access door	
3	10 or 12 gauge steel insulation pin	

Note: The integrity of Duct Firemaster Product is limited to the quality of the installation.

**Marketing Communications Offices**  
**Thermal Ceramics Americas**  
 T (706) 796 4200  
 F (706) 756 4398  
**Thermal Ceramics Asia Pacific**  
 T +65 6733 6068  
 F +65 6733 3498  
**Thermal Ceramics Europe**  
 T +44 (0) 151 334 4030  
 F +44 (0) 151 334 1684

**North America -Sales Offices**  
**Canada**  
 T +1 (905)335 3414  
 F +1 (905) 335 5145  
**Mexico**  
 T +52 (555)576 6622  
 F +52 (555)576 3060  
**United States of America**  
 Eastern T (800) 338 9284 F (706)796 4324  
 Western T (866) 785 2738 F (866)785 2760

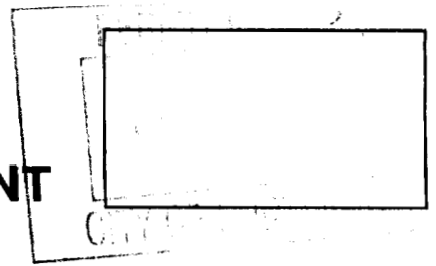
**South America - Sales Offices**  
**Argentina**  
 T +54 (11)4373 4439  
 F +54 (11) 4372 3331  
**Brazil**  
 T +55 (21)2418 1366  
 F +55(21) 2418 1205  
**Chile**  
 T +56(2)854 1064  
 F +56(2)854 1552

**Colombia**  
 T +57 (2)2282935/2282803/2282799  
 F +57 (2) 228253512282803123722085  
**Guatemala**  
 T +50 (2) 4733 295/6  
 F +50(2)4730 601  
**Venezuela**  
 T +58(241)878 3164  
 F +58(241) 878 6712



FILL IN AND SIGN WITH INK

# APPLICATION FOR PERMIT HEATING OR POWER EQUIPMENT



To the INSPECTOR OF BUILDINGS, PORTLAND, ME.

The undersigned hereby applies for a permit to install the following heating, cooking or power equipment in accordance with the Laws of Maine, the Building Code of the City of Portland, and the following specifications:

Location 27 Monument Sq Use of Building Market Date 8/29/06  
Name and address of owner of appliance Alan Mounier 27 Monument Sq Portland

Installer's name and address Antone, 11 Wallace Ave S. Portland ME 04106  
Telephone 207 774-2300

### Location of appliance:

- Basement
- Floor
- Attic
- Roof

### Type of Fuel:

- Gas
- Oil
- Solid

Appliance Name: Kees Kitchen Hood

U.L. Approved  Yes  No

Will appliance be installed in accordance with the manufacture's installation instructions?  Yes  No

IF NO Explain: \_\_\_\_\_

### The Type of License of Installer:

- Master Plumber # \_\_\_\_\_
- Solid Fuel # \_\_\_\_\_
- Oil# \_\_\_\_\_
- Gas# PNT 1194
- Other \_\_\_\_\_

### Type of Chimney:

- Masonry Lined  
Factory built \_\_\_\_\_
- Metal welded 16ga w/Insulation  
Factory Built U.L. Listing # \_\_\_\_\_

Direct Vent  
Type \_\_\_\_\_ UL# \_\_\_\_\_

### Type of Fuel Tank

- Oil
- Gas

Size of Tank \_\_\_\_\_

Number of Tanks \_\_\_\_\_

Distance from Tank to Center of Flame \_\_\_\_\_ feet.

Cost of work \$9,800  
Permit fee \$111.

Approved

Approved with Conditions

Fire: \_\_\_\_\_  
Ele.: \_\_\_\_\_  
Bldg.: [Signature]

See attached letter or requirement

Signature of Installer \_\_\_\_\_

**AIRTEMP**  
 a Comfort Systems USA company  
 11 Wallace Avenue  
 SOUTH PORTLAND, MAINE 04106-6143

LETTER OF TRANSMITTAL

TEL (207) 774-2300  
 FAX (207) 871-1345

TO City of Portland

DATE	<u>8/29/06</u>	JOB NO.	<u>626</u>
ATTENTION	<u>Mike Nugent</u>		
RE:	<u>27 Man Sq hood</u>		

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items:

- Shop drawings   
  Prints   
  Plans   
  Samples   
  Specifications  
 Copy of letter   
  Change order   
  \_\_\_\_\_

COPIES	DATE	NO.	DESCRIPTION
<u>1</u>			<u>M-1, M-2 8'x11 Plan</u>
<u>1</u>			<u>CD w/ hood Plans, Pdf.</u>
<u>1</u>			<u>Permit application</u>
<u>1</u>			<u>hood Check list.</u>
<u>1</u>			<u>Check for Bill.</u>
<u>1</u>			<u>Hood &amp; Fan Submittals</u>

THESE ARE TRANSMITTED as checked below:

- For approval   
  Approved as submitted   
  Resubmit \_\_\_\_\_ copies for approval  
 For your use   
  Approved as noted   
  Submit \_\_\_\_\_ copies for distribution  
 As requested   
  Returned for corrections   
  Return \_\_\_\_\_ corrected prints  
 For review and comment   
  \_\_\_\_\_  
 FOR BIDS DUE \_\_\_\_\_   
 ▲ PRINTS RETURNED AFTER LOAN TO US

REMARKS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

COPY TO F.I.R.

SIGNED: Geoff Gogler

If enclosures are not as noted, kindly notify us at once.