

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING INSPECTION

PERMIT

Please Read Application And Notes, If Any, Attached

PERMIT ISSUED
Permit Number: 070266
MAY 23 2007
CITY OF PORTLAND

This is to certify that GALVEZ BENJAMIN & SA... H GALVEZ ITS/Lebels She... Meta

has permission to Install Hood system Exhaust Fire suppression

AT 906 BRIGHTON AVE ... 260 B014001

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine 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.

Notification of inspection must be given and work on permit on procedure before this building or part thereof is closed or closed-in. HOUR NOTICE IS REQUIRED.

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

OTHER REQUIRED APPROVALS

Fire Dept.
Health Dept.
Appeal Board
Other
Department Name

Signature: Jamie Bonke 5/22/07
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

Please call 874-8703 or 874-8693 to schedule your inspections as agreed upon

Permits expire in 6 months, if the project is not started or ceases for 6 months.

The Owner or their designee is required to notify the inspections office for the following inspections and provide adequate notice. Notice must be called in 48-72 hours in advance in order to schedule an inspection:

By initializing at each inspection time, you are agreeing that you understand the inspection procedure and additional fees from a "Stop Work Order" and "Stop Work Order Release" will be incurred if the procedure is not followed as stated below.

A Pre-construction Meeting will take place upon receipt of your building permit.

- | | | |
|-------------------------------------|--|---|
| <input type="checkbox"/> | Footing/Building Location Inspection: | Prior to pouring concrete |
| <input checked="" type="checkbox"/> | Re-Bar Schedule Inspection: | Prior to pouring concrete |
| <input checked="" type="checkbox"/> | Foundation Inspection: | Prior to placing ANY backfill |
| <input checked="" type="checkbox"/> | Framing/Rough Plumbing/Electrical: | Prior to any insulating or drywalling |
| <input checked="" type="checkbox"/> | Final Certificate of Occupancy: | Prior to any occupancy of the structure or use. NOTE: There is a \$75.00 fee per inspection at this point. |

Certificate of Occupancy is not required for certain projects. Your inspector can advise you if your project requires a Certificate of Occupancy. All projects DO require a final inspection

If any of the inspections do not occur, the project cannot go on to the next phase, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

CERTIFICATE OF OCCUPANCIES MUST BE ISSUED AND PAID FOR, BEFORE THE SPACE MAY BE OCCUPIED

<u>P. Kelly Leibel</u>	_____
Signature of Applicant/Designee	Date
<u>Dennis Martin Adams</u>	<u>5-23-07</u>
Signature of Inspections Official	Date

CBL 260 B 014 Building Permit #: 07-0266

City of Portland, Maine - Building or Use Permit Application

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

Permit No: 07-0266	Issue Date:	CBL: 260 B014001
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Location of Construction: 906 BRIGHTON AVE	Owner Name: GALVEZ BENJAMIN & SARAH	Owner Address: 906 BRIGHTON AVE	Phone:
Business Name:	Contractor Name: Lebels Sheet Metal	Contractor Address: 221 Lincoln Street Lewiston	Phone: 2072124019
Lessee/Buyer's Name	Phone:	Permit Type: Hood Systems, Commerical	Zone: B-1

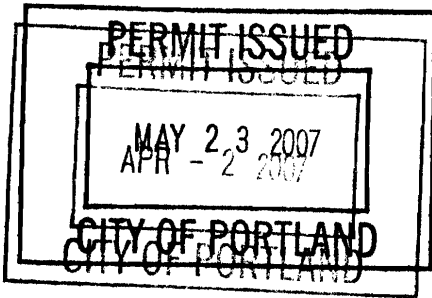
Past Use: Commercial - Restaurant <i>2 Res units + Restaurant</i> <i>See permit # 06-1739</i>	Proposed Use: Commercial - Restaurant - Install Hood system exhaust & Fires suppression	Permit Fee: \$70.00	Cost of Work: \$4,800.00	CEO District: 3
		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied <i>See Conditions</i>	INSPECTION: <i>A2/R3</i> Use Group: <i>Commercial</i> Type: <i>5B</i> <i>INC 2003</i> <i>IBC 2003</i> <i>IMP 5/22/07</i>	

Proposed Project Description: Install Hood system Exhaust & Fire suppression	Signature: <i>Greg Cross</i>	Signature: <i>[Signature]</i>
PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)		
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied		
Signature: _____ Date: _____		

Permit Taken By: Idobson	Date Applied For: 03/16/2007	Zoning Approval
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- 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..

Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>03/16/07</i>	Zoning Appeal <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 Date: _____	Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: _____
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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

City of Portland, Maine - Building or Use Permit

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

Permit No: 07-0266	Date Applied For: 03/16/2007	CBL: 260 B014001
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Location of Construction: 906 BRIGHTON AVE	Owner Name: GALVEZ BENJAMIN & SARAH	Owner Address: 906 BRIGHTON AVE	Phone:
Business Name:	Contractor Name: Lebels Sheet Metal	Contractor Address: 221 Lincoln Street Lewiston	Phone (207) 212-4019
Lessee/Buyer's Name	Phone:	Permit Type: Hood Systems, Commerical	

Proposed Use: Commercial - Restaurant - Install Hood system exhaust & Fires suppression	Proposed Project Description: Install Hood system Exhaust & Fire suppression
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Dept: Zoning	Status: Approved	Reviewer: Marge Schmuckal	Approval Date: 03/16/2007	Note: with permit # 06-1739	Ok to Issue: <input checked="" type="checkbox"/>
Dept: Building	Status: Approved with Conditions	Reviewer: Tom Markley	Approval Date: 04/02/2007	Note:	Ok to Issue: <input checked="" type="checkbox"/>
1) Installation shall comply with 2003 International Mechanical Code and State of Maine Oil and Solid Fuel Board Laws and Rules					
2) Signage Installation to comply with Chapter 31 of the IBC 2003 building code.					
Dept: Fire	Status: Approved with Conditions	Reviewer: Cptn Greg Cass	Approval Date: 03/19/2007	Note:	Ok to Issue: <input checked="" type="checkbox"/>
1) All clearances shall comply with NFPA 96					
2) No information provided on extinguishing system. To be field verified.					
3) Install shall comply with NFPA 96					



General Building Permit Application

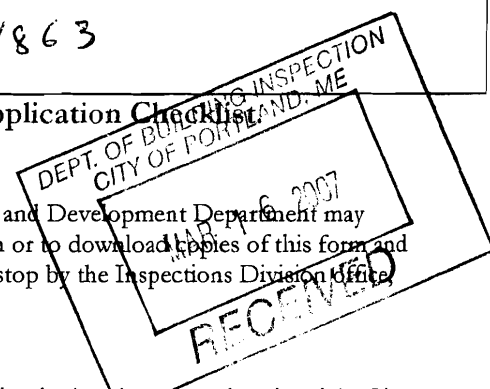
If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: <u>906 BRIGHTON AVE</u>		
Total Square Footage of Proposed Structure <u>29x36' 110050' 1st Floor</u> <u>3 UNIT</u>		Square Footage of Lot <u>17,120 SQ'</u>
Tax Assessor's Chart, Block & Lot Chart# <u>200</u> Block# <u>B014</u> Lot# <u>001</u>	Owner: <u>SARAH GALVEZ</u>	Telephone: <u>207-450-4926</u>
Lessee/Buyer's Name (If Applicable) <u>LaFAMILIE REST</u> <u>906 BRIGHTON AVE</u> <u>Portland, Me 04101</u>	Applicant name, address & telephone: <u>Lebel's Sheet Metal</u> <u>221 LINCOLN ST</u> <u>LEWISTON, ME 04240</u> <u>207-782-2235</u>	Cost Of Work: \$ <u>4500.00</u> Fee: \$ _____ C of O Fee: \$ _____
Current legal use (i.e. single family) <u>not known - 2 Family / REST.</u> If vacant, what was the previous use? <u>not known - 3 Family</u> Proposed Specific use: <u>RESTAURANT</u> Is property part of a subdivision? <u>NO</u> If yes, please name _____ Project description: <u>Install Hood System exhaust/Fire Suppression</u>		
Contractor's name, address & telephone: <u>Lebel's Sheet Metal (207) 782-2235</u> <u>221 LINCOLN ST - LEWISTON, ME 04240</u> Who should we contact when the permit is ready: <u>Paul Roy</u> Mailing address: <u>Jennifer</u> Phone: <u>207 782 2235</u> <u>775-1984 Start Smart</u> <u>207-576-1863</u>		

Please submit all of the information outlined in the Commercial Application Checklist. Failure to do so will result in the automatic denial of your permit.

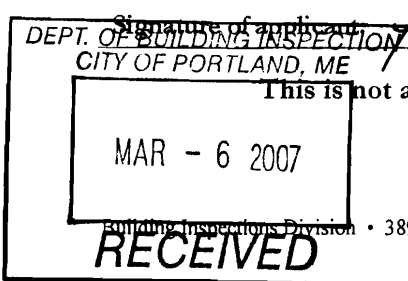
In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

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



Signature of applicant: <u>Paul Roy</u>	Date: <u>3/6/07</u>
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This is not a permit; you may not commence ANY work until the permit is issued.



Lebel's Sheet Metal

221 Lincoln St.
Lewiston, ME 04240
(207) 782-2235
Fax (207) 782-2235
FAX TRANSMISSION

To: Jeanie Bourke
Fax: 874-8716

From: PAUL ROY

Pages: 2

Date: 4/16/06

Company: _____

Re: LA FAMILIA REST

Phone: 874 8715

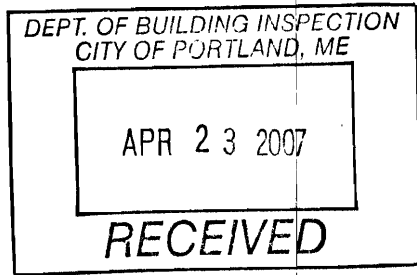
CC: _____

Message:

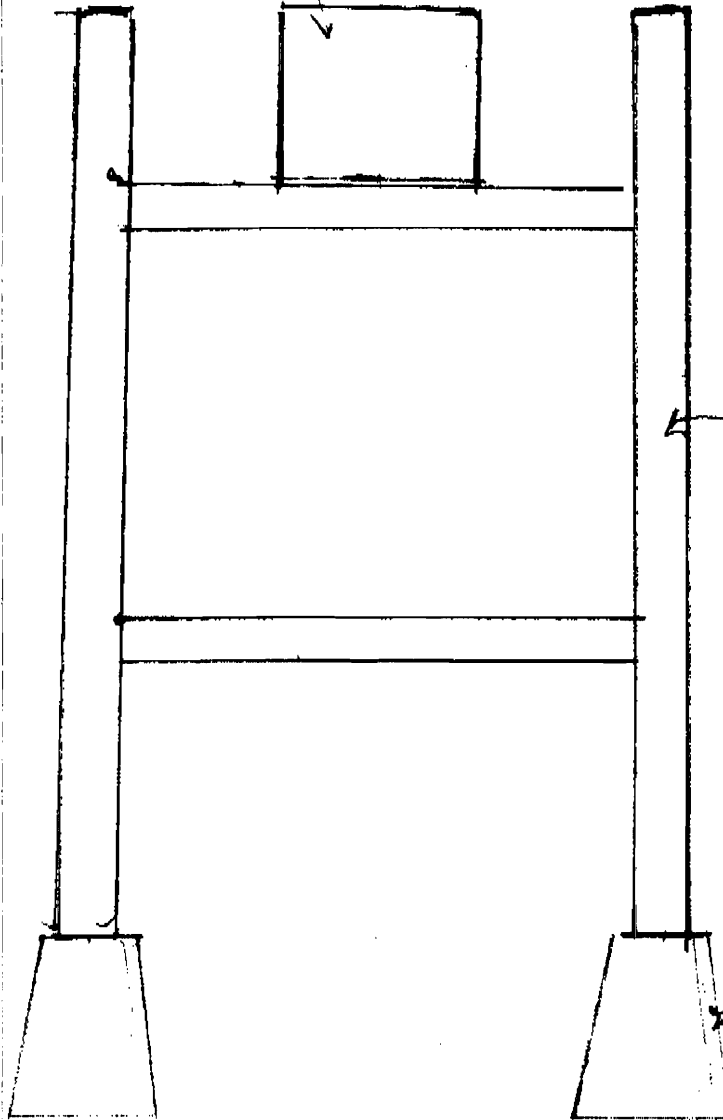
Jeanie, Please review sketch for hanging of exhaust duct at La Familia rest. on BRISTOL Ave. in Portland Me
Please let me know as soon as the permit has been received.

If transmission difficulties arise, please call us at (207) 782-2235.

From: Paul Roy



14x14 Exhaust
Duct



2x2x1/4"
TUBING
ALL welded

24" CONCRETE
PIERS

GROUND

24"

From: Lebel's Sheet Metal
221 Lincoln St
Lewiston, Me 04240
NOTE: HANGING DETAIL
FOR EXHAUST DUCT @
LA FAMILIA Rest.

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 (1093°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	1½" x 24" x 25' (38.1 mm x 610 mm x 7.6 m)	1	37.5 lbs. (17 kg)
FastWrap+	Roll	1½" x 48" x 25' (38.1 mm x 1.2 m x 7.6 m)	1	75 lbs. (34 kg)
FastWrap+ Collar	Roll	1½" x 6" x 25' (38.1 mm x 152 mm x 7.6 m)	4	53 lbs. (24 kg)
Color	White blanket with silver foil encapsulation			

4. Specifications

This specification guide covers the application of Thermal Ceramics FastWrap+ Duct FireMaster Fire Protection Product and an approved silicone firestop sealant.

Application	Fire Resistive Rating	Enclosure System	Through Penetration System
Grease Ducts	1 or 2 hours	1 layer, 1½" FastWrap+, perimeter and longitudinal overlap 3" (75 mm), GD 544 F, GD 562 F, UL G-14	OPL FS 587F UL C-AJ-7098
Air Ducts	2 hours	1 layer, 1½" FastWrap+, perimeter and longitudinal overlap 3" (75 mm), 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

Flammability (ASTM # 84/UL 723)		
Foil:	Flame spread	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)	

B. Fire Stop Sealants

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

6. Listings

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
International Mechanical Code	Section 506.3.10 Commercial Kitchen Grease Ducts and Exhaust Equipment, Section 507 Commercial Kitchen Hoods, 2003 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

7. Installation

A qualified contractor in accordance with manufacturer's instructions and referenced standards shall install the new or original FastWrap+ system using the installation methods as described in sections A-D. See Figures 1 - 4 complete drawing details.

Materials and Equipment:

FastWrap+ blanket, 1½" (38.1 mm) thick, 6 pcf (96 kg/m³), 24" (600 mm), or 48" (1.2 m) wide, and 25' (7.6 m) long rolls; optional 6" wide x 20' long (150 mm x 6 m) rolls

- FastWrap+: 25' (7.6 m) standard length, 48" (1220 mm) wide blanket helps to minimize waste
- Aluminum foil tape
- Minimum ¾" (19.0 mm) wide filament tape (optional)
- Carbon steel or stainless steel banding material, minimum ½" (12.5 mm) wide, minimum 0.015" (0.38 mm) thick, with steel banding clips
- Hand banding tensioner and crimping tool
- Minimum 12 gage steel insulation pins; galvanized steel speed clips, minimum 1½" (38 mm) x 1½" (38 mm) square or 1½" dia. (38 mm), or equivalent sized cup-head pins; capacitor discharge stud gun
- Access door hardware: four galvanized steel threaded rods, ¼" diameter (6.35 mm) by 4½" to 5" long (114 to 127 mm) with ¼" (6.35 mm) wing nuts and ¼" (6.35 mm) washers; 4" (102 mm) long steel tubing to fit threaded rods
- An approved silicone firestop sealant

Storage:

The FastWrap+ and an approved silicone firestop sealant must be stored in a dry warehouse environment on pallets. Pallets should not be stacked.

Preparatory Work:

FastWrap+ is installed with common tools, such as knives, banders and capacitor discharge guns for applying insulation pins. In order to install the duct fire stop system, the surfaces of all openings and penetrating items need to be clean, dry, frost free, and free of dust.

Installation techniques for Thermal Ceramics FastWrap+ (Figures 1 and 3):

- **3" (75 mm) Overlap Wrap Telescope** - Each blanket overlaps one adjacent blanket, and each blanket has one edge exposed and one edge covered by the next blanket as shown in Figures 1 and 3. The visible edges of the longitudinal overlaps all point in the same direction.
- **Overlap Checkerboard Pattern** - 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.

- **Butt Joint & Collar System** - Adjacent blankets are butted tightly together and a 6" (152 mm) wide collar of FastWrap+ is centered over the joint, overlapping each blanket by 3" (75 mm) 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" (305 mm) apart, between 6" and 12" (152 and 305 mm) from each edge and 10½" (267 mm) 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" (38 mm) 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" (75 mm) (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" (75 mm) 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" (38 mm) 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 trapeze 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 1½" (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 1½" (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+ 4½" (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 4½" 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" (610 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 84" 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.

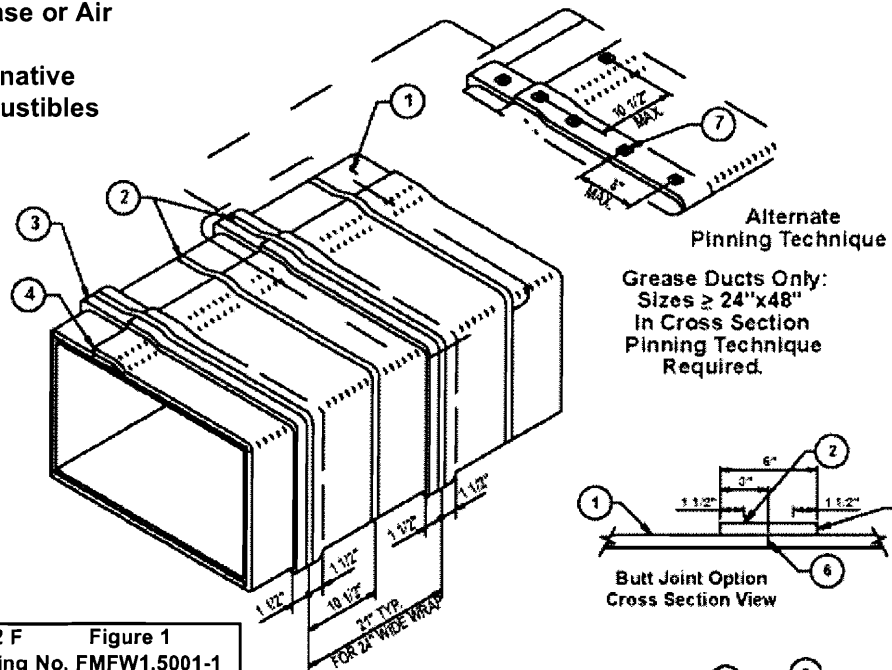
Tremco and Fyre-Sil are tradenames of Tremco Inc.
Pensil is a tradename of Specified Technologies Inc.
835+ is a tradename of Rectorseal.
FS One is a tradename of HILTI Inc.

Special Note:

The original FastWrap+ 2" technical data and installation sheet is still available electronically at www.thermalceramics.com in the data sheets section.

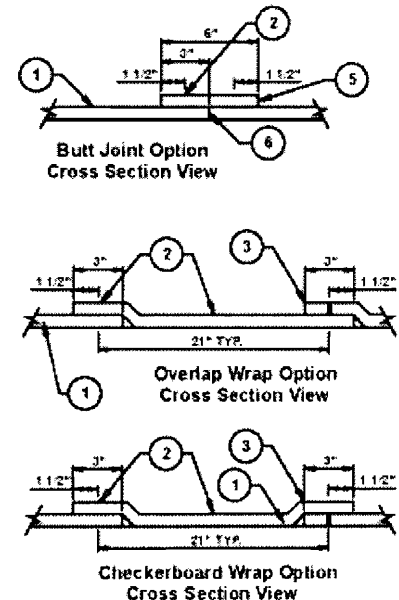


New and Improved 1 1/2" FastWrap+ Commercial Kitchen Grease or Air Ventilation Duct 1 or 2 Hour Shaft Alternative Zero Clearance to Combustibles

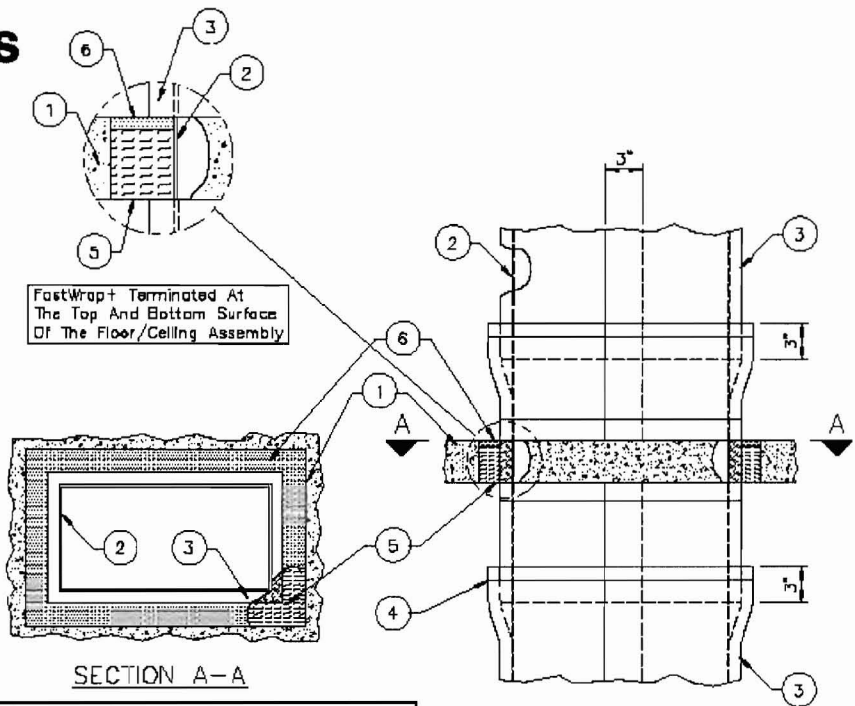


OPL Design No. GD 544 F and GD 562 F Figure 1 UL Design No. G-14 and V-19 Drawing No. FMFW1.5001-1	
1	One layer FastWrap+ 1 1/2" thick
2	Steel banding 1/2" wide minimum
3	3" minimum longitudinal overlap
4	3" minimum perimeter overlap
5	6" wide FastWrap+ collar (for Butt Joint option)
6	Firmly butted 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 speed clips (for alternate pinning)

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



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



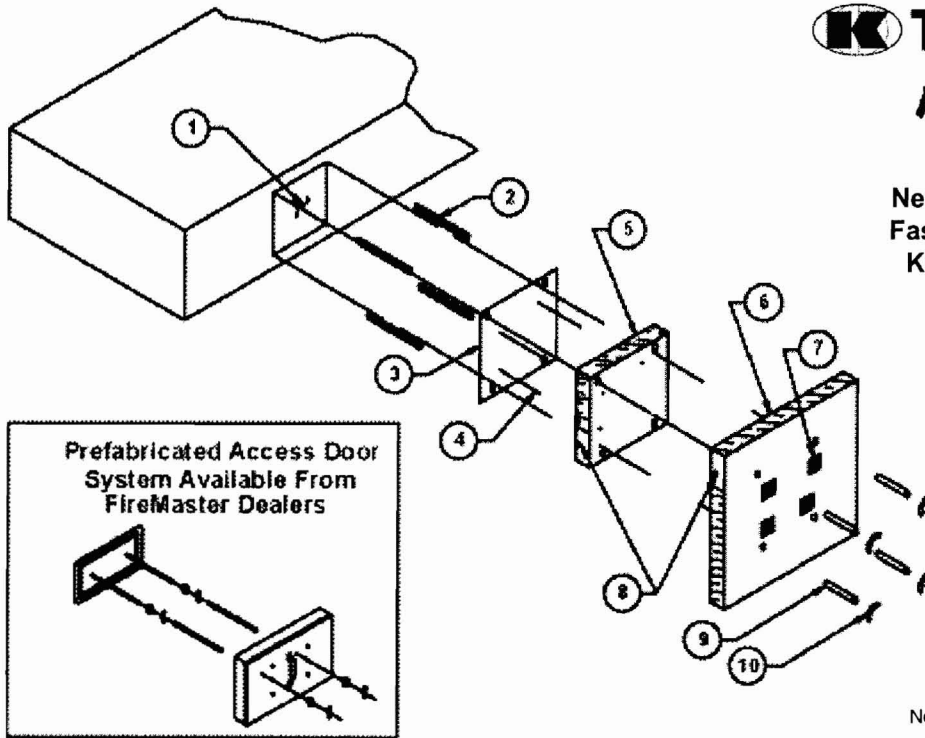
SECTION A-A

FastWrap+ Continuous Through The Floor/Ceiling Assembly

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

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		
2	Duct		
3	One layer FastWrap+ 1 1/2" thick		
4	Steel banding 1/2" wide minimum or pinning		
5	FastWrap+ (packing material)		
6	Approved Through Penetration FireStop System		

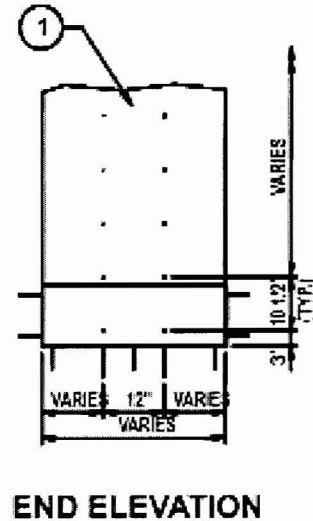
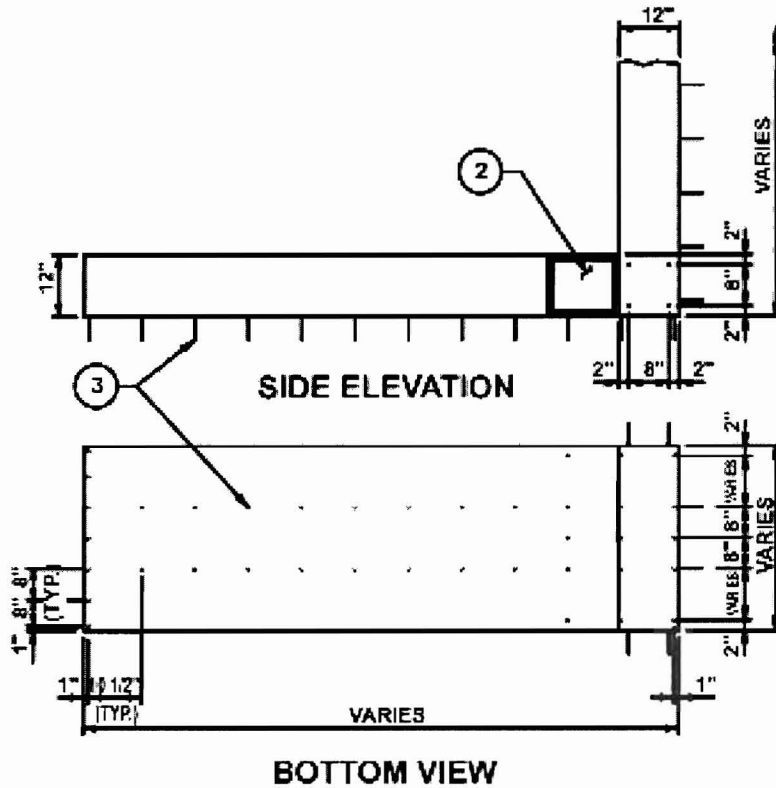
**New and Improved 1 1/2" FastWrap+ Commercial
Kitchen Grease Duct
Access Door**



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

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

**New and Improved 1 1/2" 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.

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 F: (706) 796 4398
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United States of America
 Eastern T: (800) 338 9284 F: (706) 796 4324
 Western T: (866) 785 2738 F: (866) 785 2760

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 F: +55 (21) 2418 1205
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 F: +56 (2) 854 1952

Colombia
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 F: +57 (2) 2282935/2282803/23722085
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 F: +50 (2) 4730 601
Venezuela
 T: +58 (241) 878 3164
 F: +58 (241) 878 6712



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

775-1984

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 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? Stainless Steel If Other, what Type? _____

Is the duct work Stainless steel or other type of steel? Steel If Other, what type? _____

Thickness of the steel for the hood 18ga

Thickness of the duct for the hood 16ga galv.

Type of Hood and Duct supports

Wall mounted -
Lag To wall with 3/8" Threaded Rods on front

Type of seams and Joints welded

Grease Gutters provided? yes

Hood Clearance from Combustibles materials 8'-10"

Duct Clearance from Combustibles materials zero clearance insulation

Vibration Isolation System:

Air Velocity within the duct system 2000 R P M

Grease accumulation prevention system grease pan

Cleanouts NO

Grease Duct enclosure zero clearance duct wrap

Exhaust Termination wall Extends 10' beyond BLDG -

Fire Suppression system yes

Exhaust fan mounting and clearance from the roof or wall 10' wall clearance

Exhaust fan distance from other vents or openings 10' min

Exhaust fan height above adjoining grade 12'

Hood Specs

Style of hood WALL

Type of Filter: UL 1st Baffle

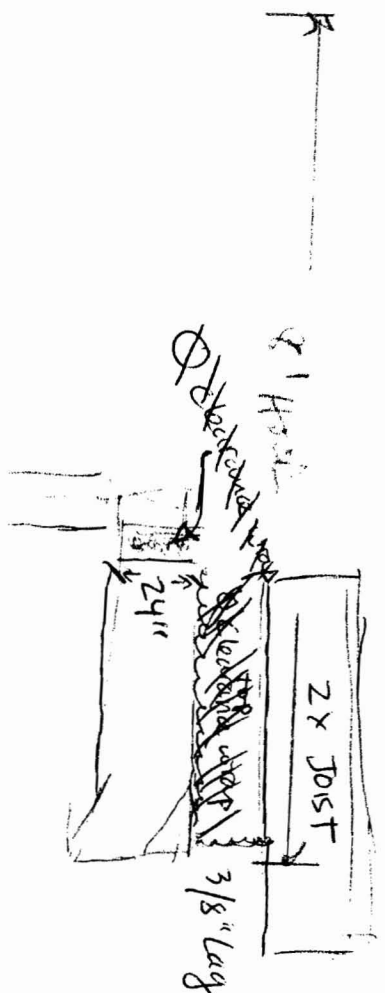
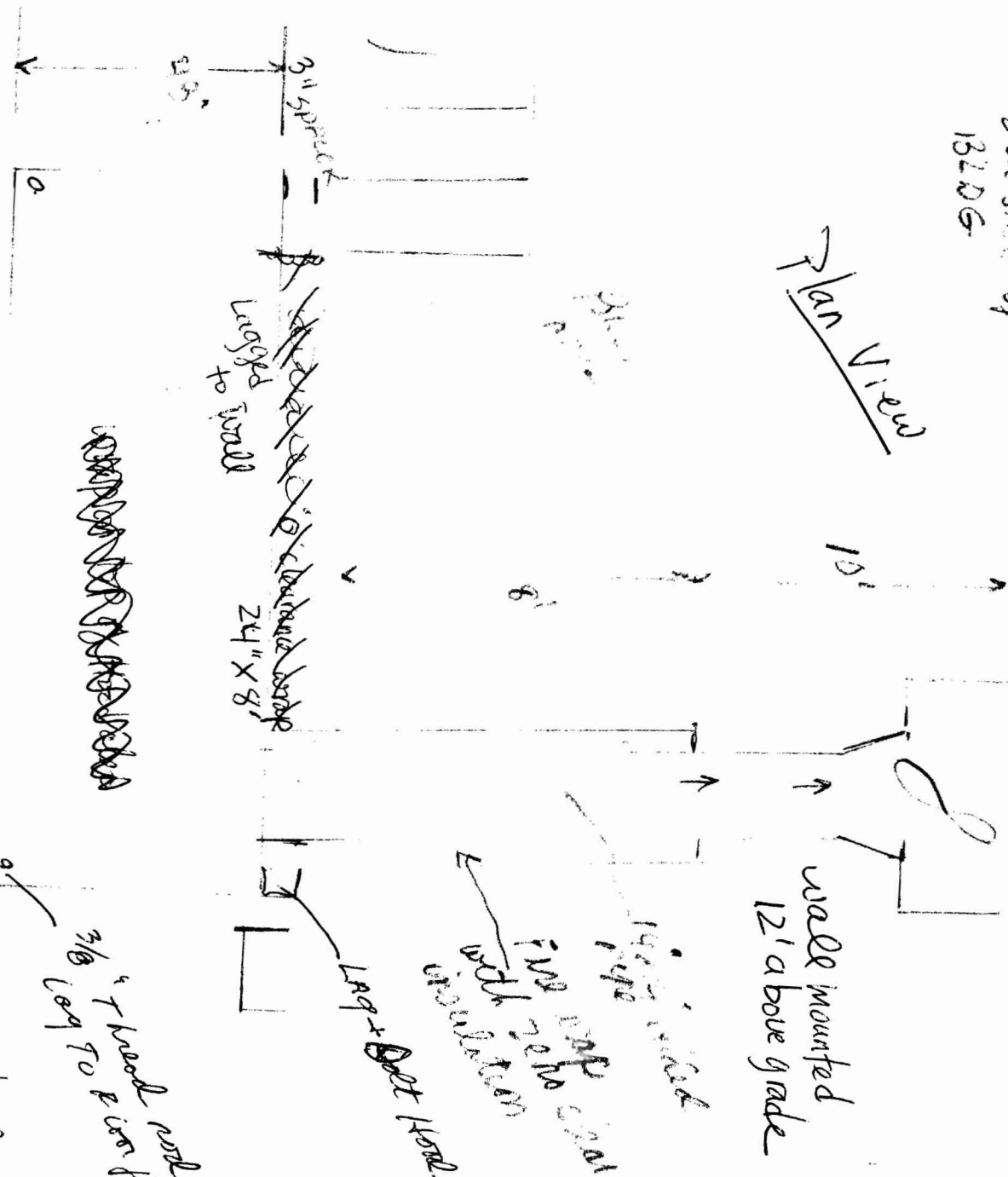
Height of filter above nearest cooking surface: 6'6"

Capacity of hood in CFM 2500 cfm

Make up Air system description and capacity NONE

over site of
1820G

Plan View



~~2x4" x 8'~~
 2x4" x 8'
 3/8" T wood post
 3/8" lag to post joint

Propose wood system
 906 FIRE STOP AIR
 PORTLAND HE
 LEAD & SHEET METAL

clearance
 Hood to
 wall. ✓
 Per Telephone
 3-19-07 G.E.

2011-08-22

Lebel's Sheet Metal

221 Lincoln St.
Lewiston, ME 04240
(207) 782-2235
Fax (207) 782-2235
FAX TRANSMISSION

To: JEANIE BOURKE
Fax: 874-8716

From: PAUL ROY
Pages: 2

Company: _____
Phone: 874 8715

Date: 4/16/06
Re: LA FAMILIA REST
CC: _____

Message:

Jeanie, Please review sketch for hanging of exhaust duct at La Familia rest. on BRISTOL Ave. in Portland Me. Please let me know as soon as the permit has been received.

* Jeanie please review for clearance to combustibles and call: 207 782 2235

If transmission difficulties arise, please call us at (207) 782-2235.

From: Paul Roy

dick

From: "Lake, Jim" <jlake@NFPA.org>
To: "dick" <metelman1971@ctel.net>
Cc: "Caron, Maureen" <mcaron@NFPA.org>
Sent: Tuesday, April 01, 2003 2:39 PM
Subject: RE: requirements for back splash

Dear Sir,

You are correct, there are no requirements for the construction of the wall underneath the stainless steel backing behind the appliance. This is typically a health department requirement and not a fire protection issue.

Best Regards

James D. Lake

Senior Fire Protection Specialist

NFPA

Important Notice: This correspondence is not a Formal Interpretation issued pursuant to NFPA Regulations. Any opinion expressed is the personal opinion of the author, and does not necessarily represent the official position of the NFPA or its Technical Committees. In addition, this correspondence is neither intended, nor should be relied upon, to provide consultation or services.

-----Original Message-----

From: dick [mailto:metelman1971@ctel.net]
Sent: Monday, March 31, 2003 9:03 AM
To: jlake@nfpa.org
Subject: requirements for back splash

I have a question, I purchased a nfpa96 catalog and i cant see anything in there as to the requirements for the backsplash wall behind the equipment in a rest. I want to know if a wall is wood studded do i have to put some kind of fire protection up first then apply stainless steel. I do understand that there are requirements for the area behind the hood. Thank you Dick

4/6/2003

dick

From: "Lake, Jim" <jlake@NFPA.org>
To: "dick" <metalsman1971@ctel.net>
Cc: "Caron, Maureen" <mcaron@NFPA.org>
Sent: Tuesday, April 01, 2003 2:39 PM
Subject: RE: requirements for back splash

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James D. Lake
Senior Fire Protection Specialist
NFPA

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To: jlake@nfpa.org
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dick

From: "Lake, Jim" <jlake@NFPA.org>
To: "dick" <metelman1971@ctel.net>
Sent: Monday, April 14, 2003 11:08 AM
Subject: RE: requirements for back splash

Sir,

1. There are no size requirements in NFPA 96 other than that the hood be sized and configured to provide for the capture and removal of grease-laden vapors.

The 6 inch extension of the hood beyond the perimeter of the equipment has typically been found in the model mechanical codes but is not a requirement of NFPA 96.

2. You are correct, clearance to combustible or limited combustible construction can be reduced by any of the methods detailed in 4.2.3.

3. Section 4.2.4.3 is intended to require that the protection provided for the reduction of clearance (specifically for hoods in this case) be continued down beyond the bottom of the hood all the way to the floor or to the top of any noncombustible construction. This is meant to require the same clearances and clearance reduction behind the equipment as is required of the hood.

Best Regards

James D. Lake

Senior Fire Protection Specialist

NFPA

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-----Original Message-----

From: dick [mailto:metelman1971@ctel.net]
Sent: Sunday, April 06, 2003 11:25 PM
To: Lake, Jim
Subject: Re: requirements for back splash

I appreciate the time youve taken to answer my questions. If i could i like to ask a couple more. Then i think i will be all set. First is there any requirements on the size of the hood in relation to the size of the equipment? I have been under the understanding that if you have 9 ft of equipment you need 10 ft of hood. And that the hood has to extend over the front of the equipment by 6 inches. Second is my understanding of 4.2.3.2. clearance reduction sys. my understanding of this is if i want to reduce my clearance of the exhaust duct to a combustable object, to 3 inches i have to wrap the duct with 1 inch mineral wool, 1 inch air space, then 22 ga duct around all of that. So if the exhaust duct is 12 inches square that total size of the 22 ga. would be 16 inches square. And last is my understanding of 4.2.4.3. What are you specifically requiring there. As a side note are there any requirements placed on the equipment, such as they being so many inches away from a wooded wall. I thank you for your time and hope you can respond to my questions. seeing that i am getting alot of work coming in and i want to make sure that it is properly done, and it seems that my state fire marshal has a difficult time to give me proper instructions

----- Original Message -----

From: Lake, Jim
To: 'dick'
Cc: Caron, Maureen
Sent: Tuesday, April 01, 2003 2:39 PM
Subject: RE: requirements for back splash

4/15/2003

GENERAL REQUIREMENTS

96-7

ing a thickness of 3.2 mm ($\frac{1}{8}$ in.) that has a flame spread rating not greater than 50, when tested in accordance with NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*. (b) Materials, in the form and thickness used and not described by (a) above, having neither a flame spread rating greater than 25 nor evidence of continued progressive combustion and having such composition that surfaces that would be exposed by cutting through the material in any plane have neither a flame spread rating greater than 25 nor evidence of continued progressive combustion, when tested in accordance with NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*.

3.3.34.3* Noncombustible Material. A material not capable of supporting combustion.

3.3.35 Pitched. To be fixed or set at a desired angle or inclination.

3.3.36 Recirculating Systems. Systems for control of smoke or grease-laden vapors from commercial cooking equipment that do not exhaust to the outside.

3.3.37 Removable. Capable of being transferred to another location with a limited application of effort and tools.

3.3.38 Replacement Air. Air deliberately brought into the structure, then specifically to the vicinity of either a combustion process or a mechanically or thermally forced exhausting device, to compensate for the vapor and/or gases being consumed or expelled.

3.3.39 Single Hazard Area. Where two or more hazards can be simultaneously involved in fire by reason of their proximity, as determined by the authority having jurisdiction.

3.3.40 Solid Cooking Fuel. Any solid, organic, consumable fuel such as briquettes, mesquite, hardwood, or charcoal.

3.3.41 Solvent. A substance (usually liquid) capable of dissolving or dispersing another substance; a chemical compound designed and used to convert solidified grease into a liquid or semi-liquid state in order to facilitate a cleaning operation.

3.3.42 Space.

3.3.42.1 Concealed Spaces. That portion(s) of a building behind walls, over suspended ceilings, in pipe chases, attics, and in whose size might normally range from 44.45 mm ($\frac{1}{4}$ in.) stud spaces to 2.44 m (8 ft) interstitial truss spaces and that might contain combustible materials such as building structural members, thermal and/or electrical insulation, and ducting.

3.3.42.2 Confined Space. A space whose volume is less than 1.42 m³/293 W (50 ft³/1000 Btu/hr) of the aggregate input rating of all appliances installed in that space. [211:1.5]

3.3.43 Spark Arrester. A device or method that minimizes the passage of airborne sparks and embers into a plenum, duct, and flue.

3.3.44 Thermal Recovery Unit. A device or series of devices whose purpose is to reclaim only the heat content of air, vapors, gases, or fluids that are being expelled through the exhaust system and to transfer the thermal energy so reclaimed to a location whereby a useful purpose can be served.

3.3.45 Trap. A cuplike or U-shaped configuration located on the inside of a duct system component where liquids can accumulate.

Chapter 4 General Requirements

4.1 General.

4.1.1 Cooking equipment used in processes producing smoke or grease-laden vapors shall be equipped with an exhaust system that complies with all the equipment and performance requirements of this standard.

4.1.2 All such equipment and its performance shall be maintained in accordance with the requirements of this standard during all periods of operation of the cooking equipment.

4.1.3 The following equipment shall be kept in good working condition:

- (1) Cooking equipment
- (2) Hoods
- (3) Ducts (if applicable)
- (4) Fans
- (5) Fire-extinguishing systems
- (6) Special effluent or energy control equipment

4.1.4 All airflows shall be maintained.

4.1.5 Maintenance and repairs shall be performed on all components at intervals necessary to maintain these conditions.

4.1.6* All solid fuel cooking equipment shall comply with the requirements of Chapter 14.

4.1.7 Multiple tenancy applications shall require the concerted cooperation of design, installation, operation, and maintenance responsibilities by tenants and by the building owner.

4.1.8 All interior surfaces of the exhaust system shall be accessible for cleaning and inspection purposes.

4.1.9* Cooking equipment used in fixed, mobile, or temporary concessions, such as trucks, buses, trailers, pavilions, tents, or any form of roofed enclosure, shall comply with this standard unless all or part of the installation is exempted by the authority having jurisdiction.

4.2* Clearance.

4.2.1 Where enclosures are not required, hoods, grease removal devices, exhaust fans, and ducts shall have a clearance of at least 457 mm (18 in.) to combustible material, 76 mm (3 in.) to limited-combustible material, and 0 mm (0 in.) to noncombustible material.

4.2.2 Where a hood, duct, or grease removal device is listed for clearances less than those required in 4.2.1 the listing requirements shall be permitted.

4.2.3 Clearance Reduction.

4.2.3.1 Where a clearance reduction system consisting of 0.83 mm (0.013 in.) (28-gauge) sheet metal spaced out 25 mm (1 in.) on noncombustible spacers is provided, there shall be a minimum of 229 mm (9 in.) clearance to combustible material.

4.2.3.2 Where a clearance reduction system consisting of 0.69 mm (0.027 in.) (22-gauge) sheet metal on 25 mm (1 in.) mineral wool bats or ceramic fiber blanket reinforced with wire mesh or equivalent spaced out 25 mm (1 in.) on noncombustible spacers is provided, there shall be a minimum of 76 mm (3 in.) clearance to combustible material.

4.2.3.3 Zero clearance to limited-combustible materials shall be permitted where protected by metal lath and plaster, ceramic

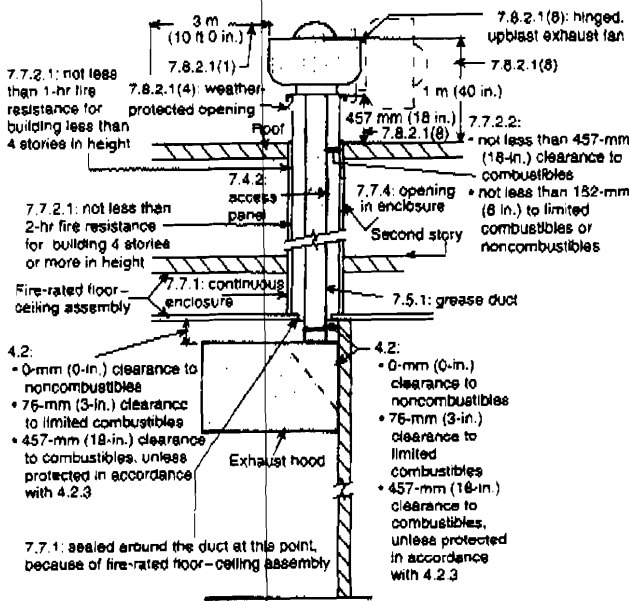
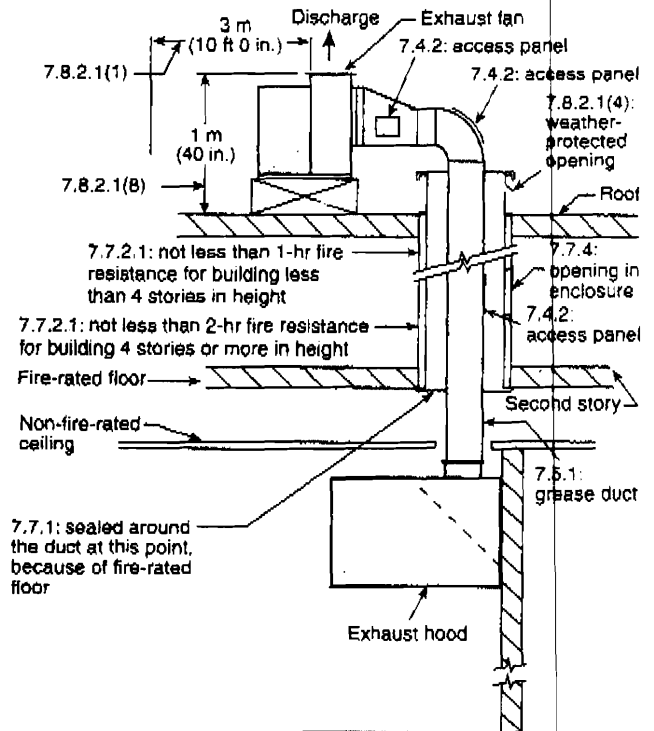
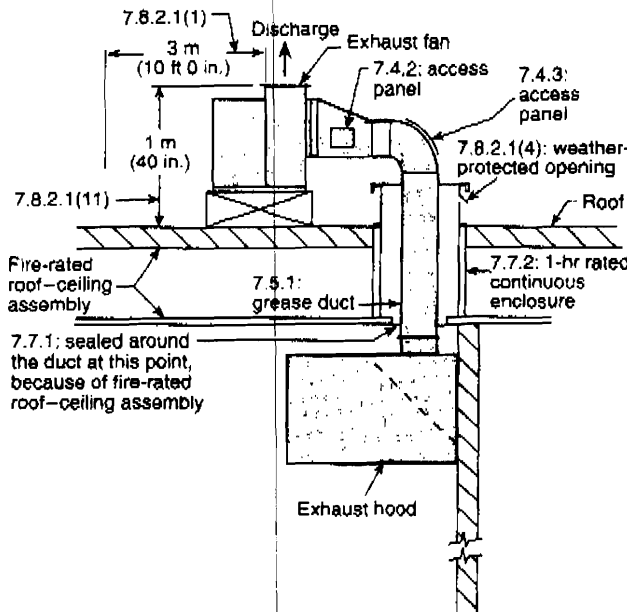


FIGURE A.4.2(a) Typical section view for building with two stories or more with fire-rated floor-ceiling assembly.



Note: Clearance notes in Figure A.4.2(a) apply also to this drawing.

FIGURE A.4.2(c) Typical section view for building with two stories or more with non-fire-rated ceiling and fire-rated floor.



Note: Clearance notes in Figure A.4.2(a) apply also to this drawing.

FIGURE A.4.2(b) Typical section view for one-story building with fire-rated roof-ceiling assembly.

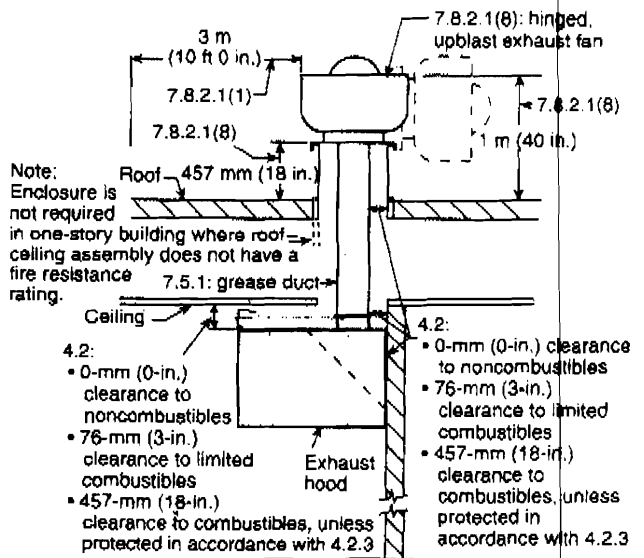


FIGURE A.4.2(d) Typical section view for one-story building without fire-rated roof-ceiling assembly.

3M
Fire Protection Products
[Handwritten Signature]

ENGINEERING JUDGMENT FOR
04/12/07
Don Parker
General Insulation
35 Willow St.
Lewiston, ME
Fax: (207) 786-0963

Project: Sokodu Teriyaki	Contractor: TBD
Fire Stopping Category: Discussion	

Topic: Reduction of clearance to combustible materials around a grease duct hood

Discussion: At this time, to the knowledge of 3M Fire Protection Products there are no requirements for the wrapping of the top of a grease duct hood and there is no test standard to comply with, nor hourly rating to achieve. However, when local jurisdiction requires hoods to be wrapped, follow the suggested installation procedure:

To reduce the clearance to combustible materials around the grease duct hood, the Fire Barrier Duct Wrap material shall be installed in accordance with the requirements of the Fire Barrier Duct Wrap installation instructions, any applicable design listing from Intertek or applicable code evaluation report with the following additions:

1. Due to the proximity of the hood to possible combustibles, the hood can be wrapped with one layer of Duct Wrap 15A with the proper overlaps for protection of up to 2 hr. The Duct Wrap 15A can be mechanically fastened to the hood by pinning or with 3/4 in. steel banding using screws and 2 in. diameter washers to one side of the hood. Tighten the banding across the top of the hood and secure the opposite side in the same manner as the first side.
2. The required overlaps in the Duct Wrap material must be maintained on the grease duct hood, as well as onto the transition into the grease duct itself.

Supplemental Documents to this Engineering Judgment: Fire Barrier Duct Wrap 15A Commercial Kitchen Grease Fire Protection system Installation Instructions.

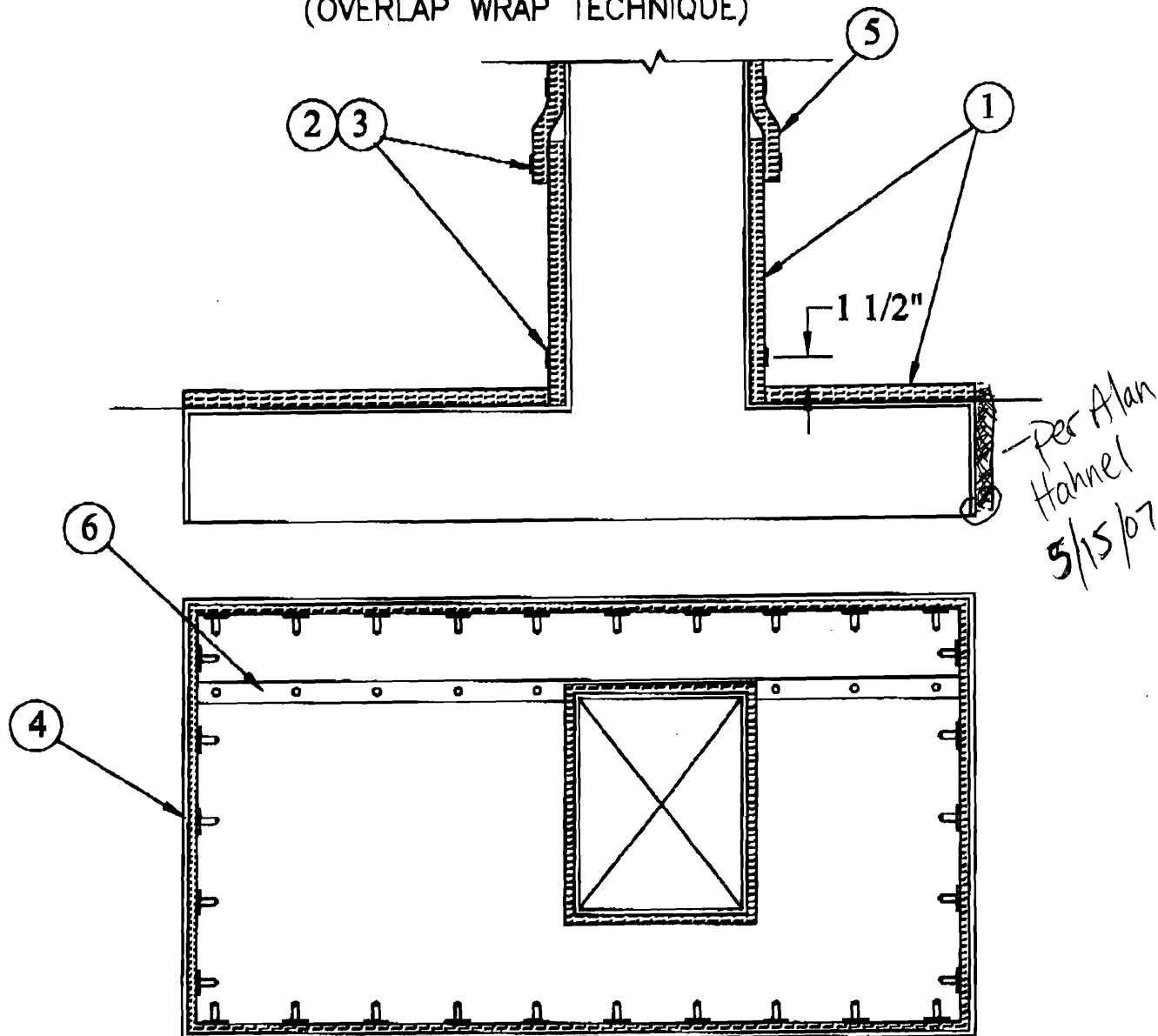
3M Fire Barrier Material: Fire Barrier Duct Wrap 15A

Engineering Discussion Letter Prepared By: <i>[Signature: Kate Baker]</i> Kate Baker Technical Service Representative	Reviewed By: <i>[Signature: Ryan Fenstermaker]</i> 518386 cc: Ryan Fenstermaker
--	--



3M Building Safety Solutions Department
 3M Center, Building 207-1S-02
 St. Paul, MN 55144-1000

**3M FIRE BARRIER DUCT WRAP 15 A
SUGGESTED INSTALLATION FOR GREASE HOOD DETAIL
1 OR 2 HOUR SYSTEM
(OVERLAP WRAP TECHNIQUE)**



1. ONE LAYER OF DUCT WRAP 15A
2. FILAMENT TAPE
3. BANDING
4. 10 GAUGE 6" LONG, COPPER COATED INSULATION PINS OR PRE-INSULATED "CUP HEAD" PINS OR SPEED CLIPS SPACING @ 10 1/2"
5. 3" MIN. PERIMETER OVERLAP
6. 3" MIN. SEAM OVERLAP

CONSULT CURRENT INDEPENDENT TESTING LABORATORIES (UL, OPL) FOR SYSTEMS OR DESIGN DETAILS

PROJECT:	PAGE 1 OF 1	SIGNATURE	DATE
SYSTEM / DESIGN NO. GREASE-HOOD-DETAIL.DWG	DATE 03-02-04	<p><small>All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, however, since the conditions of use and application are beyond our control, 3M shall not be liable for any damage, direct or consequential, resulting from the use of this material or design. 3M's only warranty shall be to replace any of our products proved to be defective.</small></p>	
3M Fire Protection Products			