



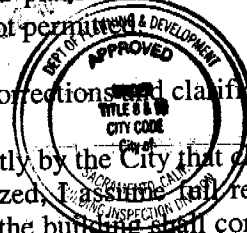
AUTHORIZATION TO START WORK

City of Sacramento, Building Inspections Division
2101 Arena Blvd., Suite 200, Sacramento, CA 95834

Company: Zyng Noodlery PC# #0314979
Address: 4000 Truxel Rd #A5 CA 95834 BID App. _____
Job Phone: (801) 309-1494 Office Ph. 916-257-4850 Fee: \$350.00
SUBJECT: Project Address: 4000 Truxel Road Suite # A-5

I request permission to start the following work Rough frame, Rough Electrical, Rough Mechanical, Saw Cut Concrete Slab. Applicant aware doing @ own risk, also aware No inspections

I realize that all work will be at the owner's and contractor's risk without assurance that the permit for the project will be granted. Any code conflicts will be corrected. I agree not to cover or conceal any work or portion thereof. I realize that inspections will not be made on this project until a building permit is issued. All changes required to conform to the approved plans will be completed without delay and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the Building Inspection Division.



I will expedite necessary revisions, corrections and clarifications. The approval of this plan and specification is necessary after commencement of the work authorized. I assume full responsibility for the work of loss which may result by reason of such changes. I agree that the building shall conform to the approved final plans as amended, without regard to the stage of completion.

This authorization is valid for 30 days while the plans are being processed for permit. These state required declarations must be properly executed before this authorization is valid. This authorization is valid when initialed by authorized Building Department personnel and stamped approved. Keep posted on job site at all times.

CONSTRUCTION LENDING AGENCY

I hereby affirm under penalty of perjury that there is a construction-lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ.C.)

Lender's Name _____
Lender's Address _____

LICENSED CONTRACTORS DECLARATION

I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of the Business and Professions Code and my license is in full force and effect.

Lic. Class: B HIC Lic. Number 654119 Newland Enterprises
COMPANY NAME
Luell Newland 11/18/03
SIGNATURE DATE

Installation Instructions

Part 1 - General

1.01 Description of System

- A. This fireproofing system shall be a complete system of Fireproofing materials supplied as specified by Johns Manville.
- B. This system is designed for application on grease ducts as shown on the drawings.

1.02 Quality Assurance

- A. **Supplier Qualifications:** The Firetemp® Wrap SL system as supplied by Johns Manville is approved for use on this project.
- B. **Applicator Qualifications:** Applicators bidding on this work represent that they are fully apprised of Firetemp® Wrap SL products and application procedures.

1.03 Submittals

- A. **Product Data:** Submit copies of Firetemp® Wrap SL data and these application instructions and drawings.
- B. **Samples:** Submit samples of Firetemp® Wrap SL and other materials as requested.

1.04 Product Delivery, Storage and Handling

- A. Materials shall be delivered in packaged lots, clearly marked with Johns Manville's name, brand and type of material and other labels as required.
- B. Materials shall be stored in a clean, dry warehouse with careful handling to avoid damage.

1.05 Job Conditions

- A. **Environmental conditions:** while a warm environment is desirable, Firetemp® Wrap SL may be applied in subfreezing or wet weather, if necessary. In colder situations, heat may be required to make the aluminum tape adhere.
- B. **Ventilation:** When Johns Manville Firetemp® Wrap SL is cut in the field, workers must follow personal protection as indicated in the product warning label or Material Safety Data Sheet (MSDS).
- C. **Coordination:** Fireproofing must be coordinated with other construction to avoid retrofits that would interfere with the integrity of the finished fireproofing job. At the same time, the fireproofing should

be applied last to minimize the possibility of incidental damage to the finished system.

1.06 Codes

- A. Install all Firetemp® Wrap SL in strict accordance with all published, applicable regulations by local, state or Federal agencies that may have jurisdiction.
- B. The Grease Duct Enclosure is listed under OPL Classification 16053-1 in the OPL Fire Protection Equipment Directory.
- C. The Grease Duct Insulation and Fireproofing System complies with SBCCI and NFPA 96 standards.
- D. For 1 & 2 hour rated assemblies, use one layer of 2 inch (51mm) thick Firetemp® Wrap SL.

Part 2 - Product Information

2.01 Firetemp® Wrap SL

- A. **Description:** Firetemp® Wrap SL is a soluble amorphous wool blanket possessing such strength and resiliency that it can be installed without damage.
- B. **Density:** pcf (kg/m³)
8 (128)
- C. **Easy Application**
 - (a) May be field-installed using ordinary tools.
 - (b) May be field-cut using a sharp knife. Precut in a shop for minimum on-site effort. Field cuts should be made using a straightedge for the knife to follow.
 - (c) Miscellaneous materials such as aluminum tape, banding, strapping tape as approved by Johns Manville.
 - (d) Available in 2 widths (24" & 48") to facilitate easy installation.
- D. **Hazardous Warning**
For the latest health and safety information for this product, please refer to the Johns Manville Material Safety Data Sheet (MSDS) or contact the Johns Manville Product Information Center at 1-800-654-3103.

ATTN: Shuman

SECTION 07800
Fire and Smoke Protection
Zero Clearance Grease Duct Insulation

PART 1 GENERAL

1.01 SUMMARY

- A. Work of this Section includes labor, material, and equipment to provide 2-hour fire-resistive rated duct enclosures and a method for providing zero-inch clearances around commercial kitchen grease duct exhaust systems to combustible materials.
- B. Related Sections:
1. Section 04200 - UNIT MASONRY
 2. Section 07270 - FIRESTOPPING
 3. Section 09260 - GYPSUM WALLBOARD SYSTEMS

1.02 REFERENCES

- A. Test standards and procedures for evaluating and rating performance of fire resistive and zero inch clearance duct wrap systems.
1. Underwriters Laboratories Inc., (UL):
 - a. UL 723, Surface Burning Characteristics per ASTM E 84.
 - b. UL 1978, First Edition of the Standard for Grease Ducts.
 - c. UL 1479, Through-Penetration Firestop Test.
 2. American Society for Testing and Materials (ASTM)
 - a. E119, Standard Method of Fire Test of Building Construction and Materials; 2 hour External Total Engulfment Test.
 - b. E814, Standard Method of Fire Tests of Through-Penetration Fire Stops.
 3. NFPA 96, 1994 Edition, Ventilation Control and Fire Protection of Commercial Cooking Operations.
 4. California State Fire Marshall, Listing No. 24401500:100.
 5. State of Wisconsin Material Approval, # 970093-I
 6. City of Los Angeles General Approval, RR 8370

1.03 System Description

- A. A lightweight, non-asbestos, high-temperature inorganic foil encapsulated insulation blanket. Duct wrap system is used on commercial grease hood duct systems allowing a zero inch clearance to combustible construction and as a 2 hour fire resistive rated enclosure system (shaft enclosure) when used with a listed or approved through-penetration system.
- B. Performance Requirements:
1. Two-hour rated fire resistive enclosure assembly, ASTM E119; Total Engulfment Test.
 2. Class 1 interior finish materials, ASTM E84
 3. Zero inch clearance to combustibles, maximum allowable surface temperatures on unexposed side, UL 1978.
 4. Three-hour through-penetration protection systems for grease duct, ASTM E814 and UL 1479.

CertainTeed

Specification Sheet

FlameChek™ Plus2 Duct Insulation (Single Layer System)

1. PRODUCT NAME

FlameChek™ Plus2 Duct Insulation

2. MANUFACTURER

CertainTeed Corporation
P.O. Box 860
Valley Forge, PA 19482-0105
Phone: (610) 341-7000
(800) 233-8990
Fax: (610) 341-7571
Fax-On-Demand: (800) 947-0057
Website: www.certainteed.com

3. PRODUCT DESCRIPTION

Basic Use: FlameChek Plus2 Duct Insulation is a 2" thick non-ceramic, glass fiber, high-temperature insulation blanket. It is designed to be an easily installed single layer system for grease duct applications requiring a one-hour or two-hour rating.

FlameChek can be used in many commercial and industrial passive fire protection applications such as kitchen exhaust grease ducts in restaurants, stadiums, hospitals, prisons and other facilities with commercial cooking operations. FlameChek Plus2 Duct Insulation provides a tested, alternate fire protective enclosure in lieu of constructing a traditional shaft wall enclosure.

Benefits: This product is non-ceramic, flexible, simple to wrap around ducts and encapsulated with a flame resistant scrim specifically designed to survive the rigors of installation. FlameChek Plus2 saves critical building space in commercial and industrial applications, allowing for zero clearance to combustibles at the overlap or collar. The product also provides superior thermal and mechanical properties and simplifies field installation.

Composition and Materials: High-temperature glass-fibers created from

a calcium, magnesium and silica chemistry, combined with a proprietary fiber spinning technology, produce a specially high-temperature, completely inorganic glass fiber blanket. FlameChek Plus2 Duct Insulation is fully encapsulated in a glass scrim reinforced poly-aluminum foil facing. **Sizes:** FlameChek Plus2 Duct Insulation is 2" thick and available as 2' or 4' wide, 20' long rolls.

4. TECHNICAL DATA

Applicable Standards: Underwriters Laboratories (UL) 1978 zero clearance at overlap or collar two-hour fire-rated grease duct enclosure system. Meets National Fire Protection Association (NFPA) 96 Requirements.

Fire Resistance: Single layer with overlap or collar joint treatment.

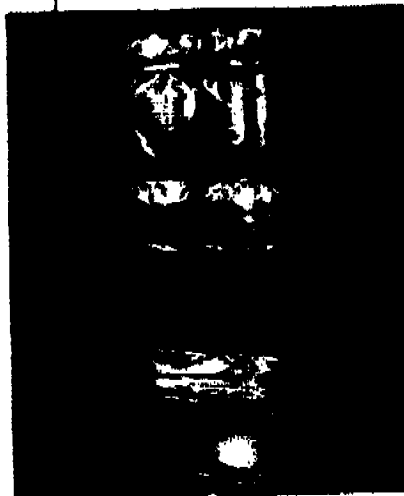
- UL 1978 Internal Grease Duct Test, Zero clearance at overlap or collar
- Grease Duct Through Penetration ASTM E 814 Fire Stop Test, F Rating = 2 Hours, T Rating = 2 Hours.
- ASTM E 119 Full Scale Engulfment Test, 2-hour fire ratings
- Fire Hazard Classification:
 - (UL 723, ASTM E 84)
 - Max. Flame Spread Index; 25
 - Max. Smoke Developed Index; 50
- ASTM E 136, meets requirements as non-combustible

5. INSTALLATION

FlameChek Plus2 Duct Insulation consists of a single layer system applied directly on to the duct surface. Three installation techniques are permitted based upon independent fire test lab results. See Figure 1 for details.

Telescoping Overlap Wrap

This wrap technique is the most common method of installing FlameChek Plus2 where each adjacent blanket has



one edge exposed and one edge covered by the next blanket. Cut the insulation to a length sufficient to wrap around the duct and provide a minimum 3" perimeter overlap. Cut the adjacent piece of FlameChek Plus2 long enough to wrap around the duct circumference plus a 3" perimeter overlap. It shall also be installed with a minimum 3" longitudinal overlap on to the previously installed piece. Seal all cut edges and joints with aluminum foil tape. To temporarily secure the insulation, optional use of 1" wide filament tape is permitted. Install the tape 1 1/2" from the blanket edge and approximately 8" on center. Utilize stainless steel banding to permanently attach the material to the duct, placing the banding in the same locations as the tape. Tighten banding to firmly hold the wrap system in place, but not so tight as to cut or damage the blanket. For ducts with spans greater than 24" wide, steel insulation pins shall be welded on the bottom of horizontal duct surfaces. Insulation pins are also required on the outside of vertical duct risers. Space insulation pins in columns 10 1/2" on center, 1 1/2" from each duct edge and spaced 9 1/2" apart down the duct length. FlameChek Plus2 Duct Insulation is impaled over the pins and held in place with speed clips (washers) to keep the system from sag-

ging. Exposed ends of pins shall be bent over to eliminate safety hazards. Space Steel banding 1½" from blanket edge and maximum 10½" on center.

Alternate Installation: Checkerboard Overlap Wrap - This alternate wrap installation uses a 3" overlap pattern with both edges of each alternating blanket covered by each adjacent blanket whose edges are exposed. The overlap joints in alternate layers of blanket resemble a checkerboard pattern in the completed installation. This technique is often utilized when a small section of the duct wrap must be repaired. Note that the installation guidelines for taping edges and joints, banding procedures, pin spacing, etc. remain the same as described in the Telescoping Overlap Wrap technique.

Alternate Installation: Butt Joint With Collar Wrap - This alternate wrap installation method permits installation with the blanket edges butted together. To complete the installation, a 6" wide collar of blanket is centered over the butt splice, overlapping each adjacent blanket by 3". The 6" wide collar can be field fabricated from the FlameChek Plus2 Duct Insulation or purchased separately. Note that the installation guidelines for taping edges and joints, banding procedures, pin spacing, etc. remain the same as described in the Telescoping Overlap Wrap technique.

Alternate Attachment: Pins Only, No Banding - Stainless steel insulation pins may be used as an alternate attachment to stainless steel banding with all three installation techniques described above. When only pins and no bands are used, pins must be attached to the duct surface on all four sides. Pin rows are spaced 9½" down the duct length. Pin spacing across the width of the duct top and bottom surface shall be 1½" from the duct edge and 10½" on center. Vertical pin spacing on the duct sides shall be 12" on center.

Access Door: For field fabricated access doors, weld threaded rod to duct at each corner of the access door opening. Cover with steel sleeves (optional) for easy removal of blanket. Weld at least four steel insulation pins to the outside of the door cover panel, 1" from each corner and on maximum

12" centers if appropriate. Cut through the one layer of FlameChek Plus2 Duct Insulation already wrapping the duct and covering the duct. The cut should match the dimensions of the access door cover panel. Leave the cut FlameChek Plus2 piece in place. Cut an additional piece of insulation with dimensions 1" wider than the existing piece covering the opening. Seal all cut edges with aluminum foil tape. Install over the insulation pins to form a 1" step joint with the first layer. Secure with washers and bend over excess pin lengths to eliminate sharp ends. Place washers on threaded rod and secure with nuts. Do not install banding over this area. See Figure 2 for details.

Firestop System: Where ducts insulated with FlameChek Plus2 Duct Insulation pass through fire-rated walls and floors, the penetration opening shall be firestopped to maintain the fire rating of the assembly. Firmly pack unfaced FlameChek Plus2 blanket to a depth of 4-1/4" in the opening to fill the annular space between the wrap insulation and the periphery of the opening. Recess the blanket 1/4" from the floor or both surfaces of the wall. Apply firestop on top of the FlameChek Plus2 unfaced blanket within the annular space to a depth of 1/4". Install firestop symmetrically within the firestop annular space on both sides of the wall. See Figure 3 for details. Contact CertainTeed for information on Tested and Listed Firestop Systems acceptable for use with the FlameChek Plus2 Duct Insulation.

6. AVAILABILITY AND COST

Distributed and sold throughout the United States and Canada. For availability and cost, contact your local distributor, or call CertainTeed Sales Support Group in Valley Forge, PA, at (800) 233-8990.

7. WARRANTY

Inasmuch as CertainTeed has no control over the installation design, installation workmanship, accessory materials, or conditions of application, CertainTeed does not warrant the performance or results of any installation containing its products.

8. MAINTENANCE

No maintenance required. Visit us on our website at www.certainteed.com for the most up-to-date product information.

9. TECHNICAL SERVICES

Technical assistance can be obtained either from the local CertainTeed sales representative, or by calling CertainTeed Sales Support group in Valley Forge, PA, (800) 233-8990.

10. FILING SYSTEMS

- Sweet's Engineering & Retrofit Files, 15080/CER
- CertainTeed Pub. No. 30-35-010
- Additional product information is available upon request.

Visit us on our website at www.certainteed.com for the most up-to-date product information.

30'x12"

1.04 SUBMITTALS

- A. Submit product data sheet or UL classification documentation showing system performance and Code compliance.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original unopened packages, clearly marked with manufacturer's name, product designation, manufacturer's lot numbers, and appropriate UL Classification Label.
- B. Handle materials carefully and store in a sheltered area to avoid damage.

PART 2 PRODUCT**2.01 MANUFACTURER**

- A. Certaineed Corporation, Valley Forge Pa.

2.02 MATERIALS

- A. FlameChek™ Duct Insulation.
- B. Tapes:
 - 1. High Performance Filament Tape: one-inch wide.
 - 2. Aluminum Foil Tape: to seal cut edges of blankets.
- C. Banding Material:
 - 1. Minimum $\frac{1}{2}$ " wide, .015" thick, type 304 stainless steel.
- D. Insulation Pins: 12 gage, minimum 4-1/2" long. Type 300 series stainless steel, with 1-1/2" square or round speed clips.
- E. Firestopping materials:
 - 1. Mesh: 304 stainless steel, .011" thick, 12" wide
 - 2. FlameChek™ Fiber Blanket
 - 3. Unifrax FryePutty
- F. Grease Duct Access Door, by duct fabricator:
 - 1. Door Enclosure:
 - a. Steel angle opening frame.
 - b. Access door cover, no less than 16 gauge.
 - c. Insulation Pins.
 - d. Speed Clips.
 - 2. Hardware:
 - a. Threaded rods: Minimum 4-1/2" long, $\frac{1}{2}$ " diameter galvanized steel with wing nuts and metal washers.
 - b. Steel tubing to fit over threaded rods, optional.
 - c. Wing nuts.

PART 3 EXECUTION**3.01 PREPARATION**

- A. Remove dirt and dust, and clean surfaces of openings and items penetrating rated floors and rated walls.
- B. Inspect and verify that work covered by other sections has been completed sufficiently to permit product installation.
- C. Remove dirt and dust, and clean surfaces of openings and items penetrating rated floors and rated walls.

Figure 1: FlameChek™ Plus 2 System Installation

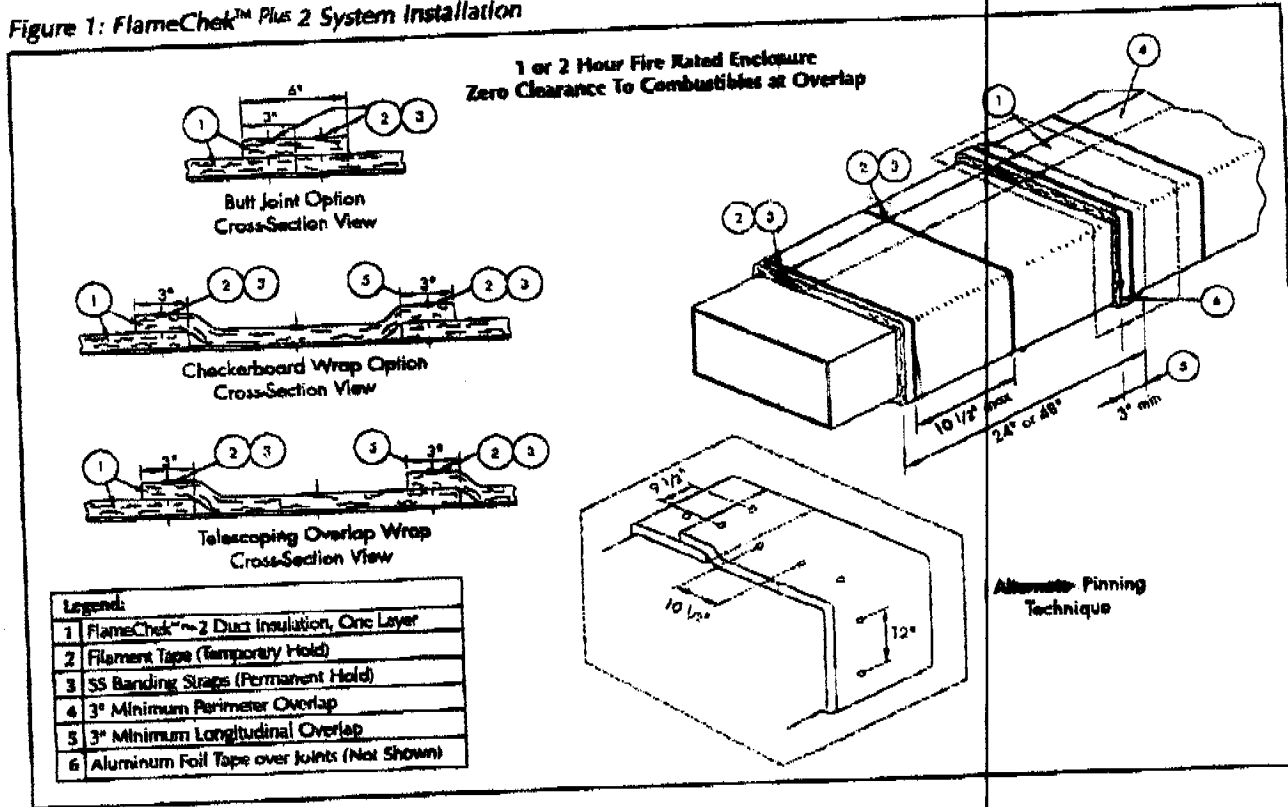


Figure 2: Field Fabricated Access Door

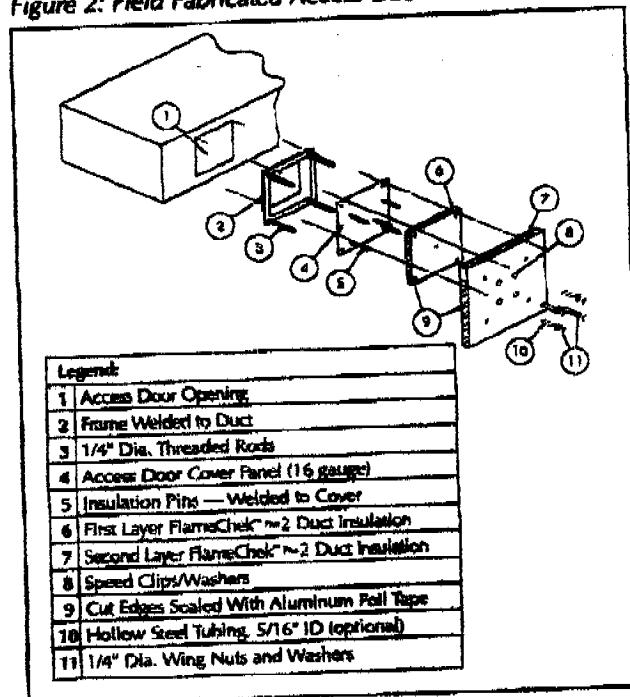
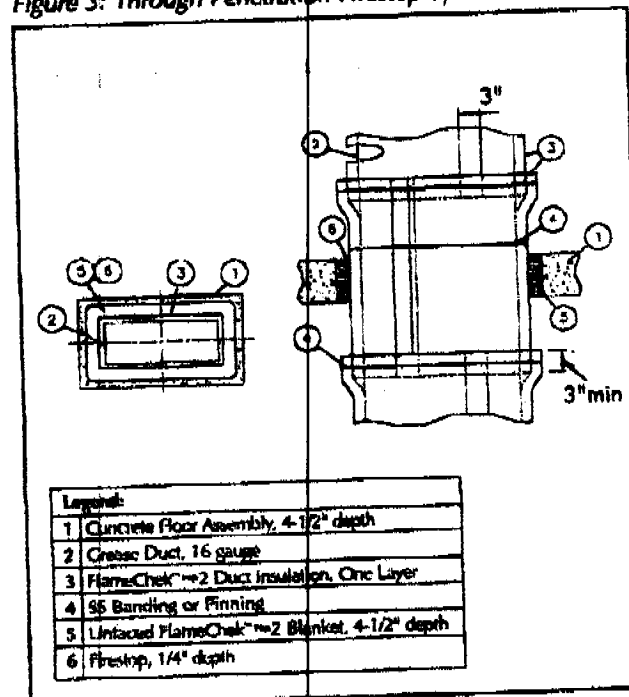


Figure 3: Through Penetration Firestop System



Part 3 - Installation

3.01 Inspection

- A. Verify that the ducts to be fireproofed are as represented in the design criteria.

3.02 Job Preparation

- A. The metal duct must comply with the code. The enclosure is constructed of minimum one layer of 2" (51 mm) thick Firetemp® Wrap SL for a 1-hour or 2-hour enclosure. The exterior of the enclosure is permitted to be in direct contact with combustibles.
- B. The installation of Firetemp® Wrap SL must be coordinated with other construction work to avoid retrofits or damage to the enclosure. Plan the work such that the enclosure will not have to be opened or taken apart after it has been installed.
- C. The enclosure must be located so that the installer does not have to cut into the Firetemp® Wrap SL to make room for adjacent equipment, pipe fittings, electrical fittings, etc. Verify there is sufficient room for the access doors to be removed so the duct can be inspected and cleaned.
- D. The Firetemp® Wrap SL enclosure is designed to be free of penetrations from the point of entry until the duct exits the enclosure. If water sprays or fire detectors are to be planned in the duct, run the piping or conduit alongside the duct toward the entrance of the enclosure.
- E. Firetemp® Wrap SL can be installed in any weather condition. In subfreezing temperatures, provide enough heat to allow the aluminum tape to adhere to the facing.
- F. Firetemp® Wrap SL can be cut with an ordinary knife.

3.03 Installation

<u>Duct Wrap System Materials</u>	
Firetemp® Wrap SL 2" supplied 24" wide, 20' long. Fully or partially encapsulated in a poly-aluminum scrim facing. One layer required.	
Aluminum foil tape - 3 or 4" wide pressure sensitive tape	
Filament tape 3/4" minimum width	
Banding strap and clips - 1/2" wide by 0.15 stainless steel and appropriate sized clips.	
Banding tools - hand tensioning tool and tin snips or -	
Insulation pins and speed clips - 12 gauge and 1" clips (steel)	
Pin welder - capable of welding pins in place	

- A. Support the duct enclosure using a conventional trapeze arrangement or simply rest it on the ceiling support structures (Figure 1). The structures must be capable of supporting the weight of the Firetemp® Wrap SL and the weight of the duct assembly. Supports must be no further apart than 8' (2.4 m) O.C.
- B. Completely cover the duct with Firetemp® Wrap SL. Use 1 layer of 2" (51mm) Firetemp® Wrap SL for 1-hour and 2-hour rated assemblies.
- C. When fully encapsulated seal all the cut edges of Firetemp® Wrap SL with Aluminum tape. Firetemp® Wrap SL is installed by overlapping the joints at least 3 inches. Seal the joints on the outer layer with 3 or 4 inch wide aluminum tape. Secure the outer layer with two (2) stainless steel straps as shown in the drawings (Figure 1 & 2) or as an alternative use pins as shown in figure 3.
- D. Filament tape may be used to temporarily hold Firetemp® Wrap SL in place. Stainless steel banding straps and/or pins are used to permanently secure the Firetemp® Wrap SL to the duct. Insulation pins are required on the bottom of horizontal ducts to prevent sagging.

NON-FLAMMABLE

Remarks Concernin Balancin Procedures

All fans are balanced between 0-10% of design specifications, and all outlets are proportioned between $\pm 10\%$ of design specifications; As specified by AABC standards.



CIRCO System Balance, Inc.

SB JOB# 9073
 SECTION PAGE
 DATE 3-3-04

FAN & OUTLET TEST SHEET

AREA SERVED KITCHEN HOOD UNIT EF-1

MOTOR NAMEPLATE DATA

MFG A.O SMITH FR 56HZ
 HP 2.0 V 208 FLA 6.8
 PH 3 SF 1.15 RPM 1725

SHEAVE DATA:

DIA 2VP42 SHAFT 7/8"
 ADJ % MIN FIXED

FAN NAMEPLATE DATA

MFG CAPTIVE AIR
 MODEL # NCA18FA
 TYPE GREASE HOOD
 SIZE

SHEAVE DATA:

DIA 2BK60H SHAFT 3/4
 BELTS (2) AX25

FAN DESIGN DATA

DATA	TEST 1	TEST 2	TEST 3
VOLTS	<u>206/206/206</u>	<u>206/206/206</u>	
AMPS	<u>4.7/4.5/4.7</u>	<u>3.9/4.0/4.1</u>	
B.H.P.	<u>1.36</u>	<u>1.2</u>	
R.P.M.	<u>1100</u>	<u>965</u>	
S.P. -	<u>/</u>	<u>/</u>	
S.P. +	<u>/</u>	<u>/</u>	
T.S.P.	<u>/</u>	<u>/</u>	
FILTER S.P.	<u>/</u>	<u>/</u>	
CFM TOTAL	<u>5767</u>	<u>4240</u>	
CFM R.A.	<u>/</u>	<u>/</u>	
CFM O.A.	<u>/</u>	<u>/</u>	

CFM 3840 SP 1.65 RPM 1132 ~~X~~HP 2.0
 MIN. O.A. NA

ROOM	OPENING			FACTOR	DESIGN		TEST 1		TEST 2		TEST 3		
	NO.	TYPE	SIZE		FPM	CFM	FPM	CFM	FPM	CFM	FPM	CFM	
					EXHAUST								
<u>KITCHEN</u>	<u>E1</u>	<u>SLOT</u>	<u>15 1/2 x 3 1/4</u>	<u>0.95</u>	<u>DNL</u>	<u>354</u>	<u>336</u>	<u>245</u>	<u>257</u>				
	<u>E2</u>		<u>19 1/2 x 3 1/4</u>			<u>380</u>	<u>361</u>	<u>280</u>	<u>266</u>				
	<u>E3</u>					<u>472</u>	<u>467</u>	<u>280</u>	<u>266</u>				
	<u>E4</u>					<u>572</u>	<u>543</u>	<u>430</u>	<u>408</u>				
	<u>E5</u>					<u>746</u>	<u>709</u>	<u>520</u>	<u>494</u>				
	<u>E6</u>					<u>886</u>	<u>842</u>	<u>642</u>	<u>610</u>				
	<u>E7</u>					<u>881</u>	<u>837</u>	<u>638</u>	<u>606</u>				
	<u>E8</u>					<u>657</u>	<u>624</u>	<u>530</u>	<u>530</u>				
	<u>E9</u>					<u>606</u>	<u>576</u>	<u>480</u>	<u>456</u>				
	<u>E10</u>		<u>15 1/2 x 3 1/4</u>			<u>497</u>	<u>472</u>	<u>365</u>	<u>347</u>				
						<u>3840</u>	<u>5767</u>	<u>110%</u>	<u>4240</u>				

REMARKS: READING LEFT TO RIGHT FACING HOOD.



MEMBER OF ASSOCIATED AIR BALANCE COUNCIL

CIRCO System Balance, Inc.

SB JOB# 9073
 SECTION _____ PAGE _____
 DATE 3-3-04

FAN & OUTLET TEST SHEET

AREA SERVED KITCHEN UNIT SF-1

MOTOR NAMEPLATE DATA

MFG A. O. SMITH FR 5642
 HP 3/4 V 115 FLA 10.2
 PH 1 SF 1.0 RPM 1725

SHEAVE DATA:

DIA VP 350 SHAFT 1/2
 ADJ % MID FIXED _____

FAN NAMEPLATE DATA

MFG CHAMPION COOLER
 MODEL # 1500DD
 TYPE MAKEUP AIR
 SIZE _____

SHEAVE DATA:

DIA 12" O.D. SHAFT 1"
 BELTS (1) 4L696

FAN DESIGN DATA

DATA	TEST 1	TEST 2	TEST 3
VOLTS	<u>121</u>		
AMPS	<u>8.1</u>		
B.H.P.	<u>0.16</u>		
R.P.M.	<u>DNA</u>		
S.P. -			
S.P. +			
T.S.P.			
FILTER S.P.			
CFM TOTAL	<u>3448</u>		
CFM R.A.	<u>0</u>		
CFM O.A.	<u>100%</u>		

CFM 3330 SP 0.5 RPM 510 XHP 3/4
 MIN. O.A. 100%

ROOM	OPENING			FACTOR	DESIGN		TEST 1		TEST 2		TEST 3	
	NO.	TYPE	SIZE		FPM	CFM	FPM	CFM	FPM	CFM	FPM	CFM
					<u>SUPPLY</u>							
<u>KITCHEN</u>	<u>1</u>	<u>LD</u>	<u>16x49 1/4</u>	<u>2.74</u>	<u>DNL</u>	<u>258</u>	<u>707</u>					
	<u>2</u>	<u>↓</u>	<u>16x49</u>	<u>2.72</u>	<u>↓</u>	<u>270</u>	<u>734</u>					
	<u>3</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>368</u>	<u>1021</u>					
	<u>4</u>	<u>↓</u>	<u>16x49 1/4</u>	<u>2.74</u>	<u>↓</u>	<u>367</u>	<u>1006</u>					
						<u>3330</u>	<u>104%</u>	<u>3448</u>				

REMARKS: _____



MEMBER OF ASSOCIATED AIR BALANCE COUNCIL

CIRCO System Balance, Inc.

SB JOB# 9073
 SECTION _____ PAGE _____
 DATE 3/5/04

FAN & OUTLET TEST SHEET

AREA SERVED Kitchen

UNIT AC-1

MOTOR NAMEPLATE DATA

MFG GE FR DNL
 HP 1 V 208 FLA 6.2
 PH 1 SF TP RPM 1100

SHEAVE DATA:

DIA Direct Drive SHAFT -
 ADJ % - FIXED -

FAN NAMEPLATE DATA

MFG BRYANT
 MODEL # 582APWGL60010NAA6
 TYPE Package
 SIZE _____

SHEAVE DATA:

DIA Direct Drive SHAFT -
 BELTS -

FAN DESIGN DATA

CFM 1995 SP DNL RPM DNL BHP DNL
 MIN. O.A. 300

DATA	TEST 1	TEST 2	TEST 3
VOLTS	<u>207</u>	<u>207</u>	
AMPS	<u>4.2</u>	<u>5.1</u>	
B.H.P.	<u>0.68</u>	<u>0.82</u>	
<u>3 speed</u>	<u>Low</u>	<u>High</u>	
R.P.M.	<u>Direct Drive</u>	<u>Direct Drive</u>	
S.P. -	<u>-</u>	<u>0.76</u>	
S.P. +	<u>-</u>	<u>0.35</u>	
T.S.P.	<u>-</u>	<u>1.11</u>	
FILTER S.P.	<u>-</u>	<u>0.08</u>	
CFM TOTAL	<u>1780</u>	<u>1950</u>	
CFM R.A.	<u>1650</u>	<u>1650</u>	
CFM O.A.	<u>130</u>	<u>300</u>	

ROOM	OPENING			FACTOR	DESIGN		TEST 1		TEST 2		TEST 3	
	NO.	TYPE	SIZE		FPM	CFM	FPM	CFM	FPM	CFM	FPM	CFM
Kitchen	1	CD	100	1		300	340		300			
	2		↓	1		300	280		315			
	3		↓	1		300	260		295			
	4		70	1		150	170		160			
	5		40	1		50	30		45			
	6		↓	1		50	40		50			
	7		100	1		300	290		295			
	8		↓	1		200	120		180			
	9		↓	1		300	250		310			
			Supply	total		1950	91%	1780	100%	1950		
(2) Kitchen	R1	CR	220	1		1950	1650		1650			
			Return	total		1950	1650		1650			

REMARKS: note(1) Design quantity was not listed on Mech print. 200 cfm was confirmed by John Chardoul. 3/5/04.

Note(2) O.S.A. Damper on unit open 100%

CIRCO System Balance, Inc.

SB JOB# 9073
 SECTION _____ PAGE _____
 DATE 3/5/04

FAN & OUTLET TEST SHEET

AREA SERVED Dining UNIT AC-2

MOTOR NAMEPLATE DATA

MFG GE FR 56H7
 HP DNL V 208 FLA 10.2
 PH 3 SF 1.15 RPM 1725

SHEAVE DATA:

DIA 1 1/2 SHAFT 7/8
 ADJ % MIN FIXED NO

FAN NAMEPLATE DATA

MFG BRYANT
 MODEL # 581BPV120180AJ
 TYPE Package
 SIZE _____

SHEAVE DATA:

DIA MAUREY 0.0.8 1/4 SHAFT 1"
 BELTS (1) A-53

DATA	TEST 1	TEST 2	TEST 3
VOLTS	<u>208, 208, 208</u>	<u>208, 208, 208</u>	
AMPS	<u>7.3, 7.3, 7.2</u>	<u>6.2, 6.3, 6.3</u>	
B.H.P.			
R.P.M.	<u>892</u>	<u>794</u>	
S.P. -	<u>-</u>	<u>0.58</u>	
S.P. +	<u>-</u>	<u>0.69</u>	
T.S.P.	<u>-</u>	<u>1.27</u>	
FILTER S.P.	<u>-</u>	<u>0.09</u>	
CFM TOTAL	<u>3885</u>	<u>3440</u>	
CFM R.A.	<u>840</u>	<u>2310</u>	
CFM O.A.	<u>3045</u>	<u>1130</u>	

FAN DESIGN DATA

CFM 3200 SP DNL RPM DNL BHP DNL
 MIN. O.A. 1050

ROOM	OPENING			FACTOR	DESIGN		TEST 1		TEST 2		TEST 3	
	NO.	TYPE	SIZE		FPM	CFM	FPM	CFM	FPM	CFM	FPM	CFM
Dining	10	CD	80	1	200	200	250	250	220	220		
	11				200	200	250	250	210	210		
	12				200	200	240	240	220	220		
	13				200	200	200	200	210	210		
	14				200	200	215	215	220	220		
	15				200	200	250	250	220	220		
	16				200	200	270	270	220	220		
	17				200	200	260	260	220	220		
	18				200	200	220	220	220	220		
	19				200	200	220	220	200	200		
	20				200	200	280	280	200	200		
	21				200	200	240	240	220	220		
	22				200	200	260	260	200	200		
	23				200	200	260	260	220	220		
	24				200	200	190	190	220	220		
	25				200	200	260	260	220	220		
			Supply	total			3200	121%	3885	108%	3440	

REMARKS: _____



CHARTER MEMBER OF ASSOCIATED AIR BALANCE COUNCIL

CIRCO System Balance, Inc.

SB JOB# 9073
 SECTION _____ PAGE _____
 DATE 3/5/04

OUTLET TEST SHEET

AREA SERVED Dining Room UNIT AC-2

ROOM	OPENING			FACTOR	DESIGN		TEST #1		TEST #2		TEST #3	
	NO.	TYPE	SIZE		FPM	CFM	FPM	CFM	FPM	CFM	FPM	CFM
Dining	R2	CR	12x8	1	440	160	160	450				
	R3				440	160	160	450				
	R4				440	180	180	480				
	R5				440	180	180	480				
	R6				440	160	160	450				
			Return total		2200	840	840	2310				

REMARKS: _____

TABLE OF CONTENTS

SECTION

DESCRIPTION

1

REMARKS CONCERNING BALANCING PROCEDURES

2 AC-1
AC-2

3 SF-1
EF-1

TEST performed By: DAN Amyot
(916) 825-0012

1

OWNER-BUILDER DECLARATION

I hereby affirm under penalty of perjury that I am exempt from the Contractors License Law for the following reason (Section 703.1, Business and Professions Code: Any city or county which requires a permit to construct, alter, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not

I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his or her own employees, provided that such improvement are not intended or offered for sale. If, however, the building or improvement is sold within 90 days of completion, the owner, builder will have the burden of proving that he or she did not build or improve for the purpose of sale).

I, as owner of the property, am exemptly contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with licensed contractors licensed pursuant to the Contractors License Law).

I am exempt under Sec. _____ B & P _____

SIGNATURE

DATE

WORKER'S COMPENSATION DECLARATION

I hereby affirm under penalty of perjury one of the following declarations:

I have and will maintain a certificate of consent to insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

I have and will maintain worked compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier: _____ Exp. _____

Policy No.: _____

I certify under penalty of perjury that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Balyp
SIGNATURE

11/18/03
DATE

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEES.

In issuing this permit, the applicant represents, and the City relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or the accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to ---permissible or prohibited- locations for such improvements. This permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read, understand and agree to the above conditions. I certify under penalty of perjury that the above information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representatives of this city to enter upon the above mentioned property for inspection purposes.

Balyp
SIGNATURE

11/18/03
DATE