

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

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

Permit No: 09-0228	Issue Date:	CBL: 342 B016001
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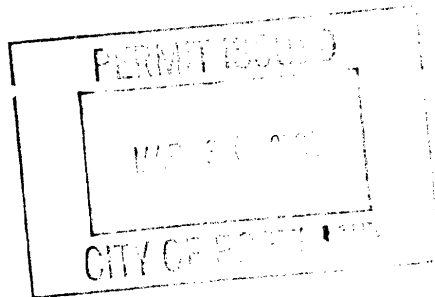
Location of Construction: 124 ALLEN AVE	Owner Name: WOODWARD LORALYN M	Owner Address: 124 ALLEN AVE	Phone:
Business Name:	Contractor Name: David Marsh	Contractor Address: 124 Allen Ave Portland	Phone 8023457436
Lessee/Buyer's Name	Phone:	Permit Type: HVAC	Zone: R-5, R-3

Past Use: 2 unit	Proposed Use: 2 unit - install a Hearthstone Homestead woodstove - in new addition connected w/ permit# 081480	Permit Fee: \$50.00	Cost of Work: \$3,000.00	CEO District: 5
Proposed Project Description: install a Hearthstone Homestead woodstove - in new addition		FIRE DEPT: <input type="checkbox"/> Approved <input type="checkbox"/> Denied <i>N/A</i>	INSPECTION: Use Group: <i>R3</i> Type: <i>Wood Stove</i> <i>NFPA 211</i> <i>IPC-2003</i> Signature: <i>JMB 3/24/09</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: Ldobson	Date Applied For: 03/24/2009	<b>Zoning Approval</b>	
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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	Zoning Appeal	Historic Preservation
<input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan <i>Approved w/conditions</i> Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>JMB 3/24/09</i>	<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: _____	<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: <i>JMB</i>



**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

4-3-09 installed per manufacture spec. by Ely

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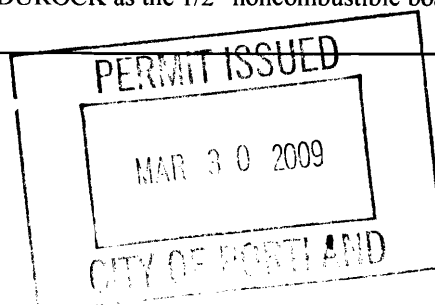
<b>Permit No:</b> 09-0228	<b>Date Applied For:</b> 03/24/2009	<b>CBL:</b> 342 B016001
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<b>Location of Construction:</b> 124 ALLEN AVE	<b>Owner Name:</b> WOODWARD LORALYN M	<b>Owner Address:</b> 124 ALLEN AVE	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> David Marsh	<b>Contractor Address:</b> 124 Allen Ave Portland	<b>Phone:</b> (802) 345-7436
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Pellet/Wood stove	

<b>Proposed Use:</b> 2 unit - install a Hearthstone Homestead woodstove - in new addition connected w/ permit# 081480	<b>Proposed Project Description:</b> install a Hearthstone Homestead woodstove - in new addition
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<b>Dept:</b> Zoning	<b>Status:</b> Approved with Conditions	<b>Reviewer:</b> Jeanine Bourke	<b>Approval Date:</b> 03/24/2009
<b>Note:</b>			<b>Ok to Issue:</b> <input checked="" type="checkbox"/>
1) This property shall remain a twofamily dwelling. Any change of use shall require a separate permit application for review and approval.			
<b>Dept:</b> Building	<b>Status:</b> Approved with Conditions	<b>Reviewer:</b> Jeanine Bourke	<b>Approval Date:</b> 03/30/2009
<b>Note:</b>			<b>Ok to Issue:</b> <input checked="" type="checkbox"/>
1) Permit approved based on the plans submitted and reviewed w/owner/contractor, with additional information as agreed on and as noted on plans.			
2) This appliance/stove and chimney pipe shall be installed, operated and maintained per the manufacturers specifications and the UL listing			
<b>Dept:</b> Fire	<b>Status:</b> Not Applicable	<b>Reviewer:</b> Capt Keith Gautreau	<b>Approval Date:</b>
<b>Note:</b> This is a one/two family, review not under jurisdiction			<b>Ok to Issue:</b> <input type="checkbox"/>

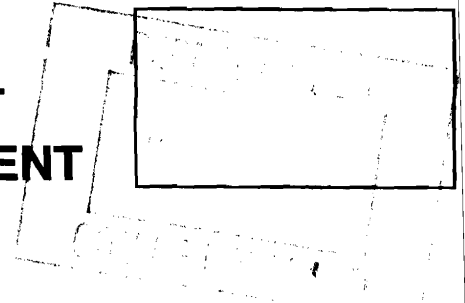
<b>Comments:</b>
3/25/2009-jmb: Left vcmmsg with David M. For details on the clearance dimensions to combustibles for the stove and if any reduction methods are used, the UL listing on the stove and if the sliding door has steps or a deck to exit on.
3/25/2009-jmb: David M. Called and verified that the sheetrock walls have been treated to reduce the clearance. He will email a detail section with material specs. Future permit for deck will be applied for out the slider.
3/26/2009-jmb: Received email of detail of wall preparation for the reduction to combustibles, this does not meet NFPA 211, replied to David and also confirmed he is using a single wall pipe from the stove up to 3-4' from penetration of the ceiling. This will also need to be 18" from combustibles unless reduced per code.
3/27/2009-jmb: I emailed David the NFPA 211 reduction methods so he can decide which to use.
3/30/2009-jmb: David emailed the design from Table 6-5.1.2 as item 2 and he is using DUROCK as the 1/2" noncombustible board. He will use the veneer tile over this, ok to issue.





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 / CBL 342-B-16 Use of Building 2-Family Date 3/24/09  
 Name and address of owner of appliance Loralya Woodward  
124 Allen Ave Portland, ME 04103  
 Installer's name and address David Merash  
124 Allen Ave Portland, ME 04103 Telephone 802-345-7436

**Location of appliance:**  
 Basement  Floor  
 Attic  Roof

**Type of Fuel:**  
 Gas  Oil  Solid

**Appliance Name:** Heatstove Homestead Woodstove  
 U.L. Approved  Yes  No UL 1482

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 # \_\_\_\_\_  
 Other Carpenter

**Type of Chimney:**  
 Masonry Lined  
 Factory built \_\_\_\_\_  
 Metal Metallbestos DS - A218  
 Factory Built U.L. Listing # ~~40000000~~  
 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:** \$3000  
**Permit Fee:** \$ 50

**Approved**

**Approved with Conditions**

Fire: \_\_\_\_\_  
 Ele.: \_\_\_\_\_  
 Bldg.: JMB 3/30/09

See attached letter or requirement

Signature of Installer David G. Yarb

Inspector's Signature \_\_\_\_\_

Date Approved \_\_\_\_\_

White - Inspection    Yellow - File    Pink - Applicant's    Gold - Assessor's Copy

**Jeanie Bourke - Re: NFPA 211-RE: 124 Allen Ave**

**From:** <flatlanderdev@aim.com>  
**To:** <JMB@portlandmaine.gov>  
**Date:** 3/30/2009 11:48 AM  
**Subject:** Re: NFPA 211-RE: 124 Allen Ave

Thanks, I will pick up the permit today or tomorrow morning and call for for an inspection before I finish the wall

David

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

From: Jeanie Bourke <JMB@portlandmaine.gov>  
To: flatlanderdev@aim.com  
Sent: Mon, 30 Mar 2009 11:32 am  
Subject: Re: NFPA 211-RE: 124 Allen Ave

David,

For the 1" insulation, there may be a compressed board or sheet insulation instead of batts. I downloaded the specs for Durock.

So, to recap:

1. A heat shield will be used on the rear of the stove to meet the reduction to 13" to sheetrock per page 24 of specs.
2. The NFPA 211 procedure below will be used to treat the wall for reduction to the 24 guage single wall stove pipe for a distance of 9" to sheetrock.

We should do an inspection of the wall preparation prior to finishing. I will issue this permit with conditions, can you please pick it up in our office.

Thanks

>>> <flatlanderdev@aim.com> 03/30 10:39 AM >>>

Hi Jeanie,

I will do the :

1/2" thick noncombustible insulation board over 1" mineral wool batts without ventilated air space, this will reduce my wall clearance to 9", although my single wall, 24 gauge blue steel pipe will be 12" from the protected surface per manufacturer's specs

I called around and the 1/2" cement board (Durarock) will meet the insulation board requirement I couldn't find the 1" mineral wool batts, but I did find 2" mineral wool batts from FW Webb, so I will install the 2" mineral wool batts.

So I will purchase this material - let me know if this will meet the city code requirement

Thanks for the info

David

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

From: Jeanie Bourke <[JMB@portlandmaine.gov](mailto:JMB@portlandmaine.gov)>  
To: [flatlanderdev@aim.com](mailto:flatlanderdev@aim.com)  
Sent: Fri, 27 Mar 2009 3:00 pm  
Subject: Fwd: NFPA 211-RE: 124 Allen Ave

Hi David,  
Let me know what you decide.....thanks  
Jeanie

>>> <[flatlanderdev@aim.com](mailto:flatlanderdev@aim.com)> 03/26 10:50 AM >>>  
Jeanie, the info from tech services

David Morash

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

From: Technical <[technical@owenscorning.com](mailto:technical@owenscorning.com)>  
To: [flatlanderdev@aol.com](mailto:flatlanderdev@aol.com) <[flatlanderdev@aol.com](mailto:flatlanderdev@aol.com)>  
Cc: answers <[answers@answers.owenscorning.com](mailto:answers@answers.owenscorning.com)>  
Sent: Fri, 6 Mar 2009 8:41 am  
Subject: FW: NFPA 211

David,

No, the product is not NFPA 211 Certified. But we do carry an Underwriters Laboratories Listing which identifies our product as "Wall Shield", "Floor Protector and Wall Shield". And the idea of this listing is to reduce clearance between heating appliances and combustible materials. The UL control number for this is UL 359Z. This link will allow you to see the information on the UL website. On the first screen, click on the link to file MH11019

<http://database.ul.com/cgi-bin/XYV/cqifind.new/LISEXT/1FRAME/srchres.html>

Thank you,

Technical Services

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

From: David Morash [<mailto:flatlanderdev@aol.com>]  
Sent: Monday, March 02, 2009 8:50 AM  
To: answers  
Subject: Inquiry Form

Name: David Morash  
Title: President  
Company Name: Flatlander Development  
Address: 124 Allen Ave  
City: Portland  
State/Prov: Maine  
Country: USA  
Zip or Postal Code: 04103  
Phone: 802-345-7436

Email: [flatlanderdev@aol.com](mailto:flatlanderdev@aol.com)

Occupation: Homeowner

Project: Immediate Need

Description:

Looking to purchase your Used Brick CB-4063. I plan on installing a woodstove and use the brick as my hearth and wall surface. The stove will be placed in the corner with the brick going up both sides of wall.

This will reduce my wall clearances. I need to know if the brick installed on the wall is NFPA211 certified. Please call or email with any info. I would like to place an order if the brick is certified NFPA 211. Thanks

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Translations available: <http://www.owenscorning.com/emailfooter.html>

**Great Deals on Dell 15" Laptops - Starting at \$479**

**A Good Credit Score is 700 or Above. See yours in just 2 easy steps!**

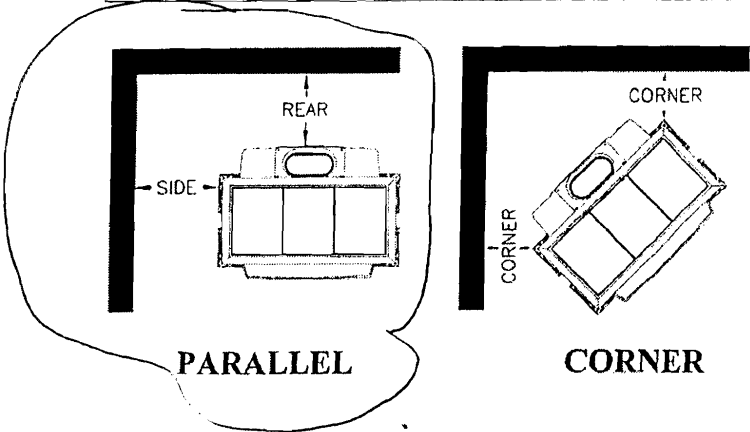
**A Good Credit Score is 700 or Above. See yours in just 2 easy steps!**

**Clearances from a Stove to a Corner**

This table and illustrations list the minimum clearances from the back of your stove to the walls in a corner, both when your stove is parallel and angled to the corner, and to unprotected and NFPA 211 protected walls.

*Back w/ heat shield to sheetrock. The materials and installation were not per NFPA 211*

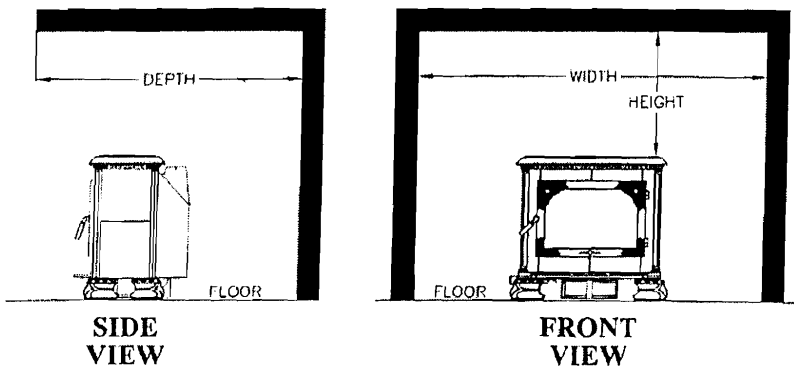
Installation Type	Unprotected Surfaces			Protected Surfaces (NFPA 211)		
	Parallel Side	Parallel Rear	Corner	Parallel Side	Parallel Rear	Corner
No Heat Shield (optional accessory)	23" (584-mm)	26" (660-mm)	18" (460-mm)	12" (305-mm)	12" (305-mm)	12" (305-mm)
Rear Heat Shield, and single wall connector	16" (406-mm)	13" (330-mm)	12" (305-mm)	12" (305-mm)	12" (305-mm)	9" (229-mm)
Rear Heat Shield, and double wall connector	16" (406-mm)	7" (178-mm)	12" (305-mm)	10" (254-mm)	7" (178-mm)	7" (178-mm)



**Clearances to an Alcove**

This table and illustration list the minimum clearances from your stove to the walls of an alcove, both unprotected and NFPA 211 protected walls.

Unprotected Surfaces			Protected Surfaces (NFPA 211)		
Minimum Width	Maximum Depth	Minimum Height (stove to ceiling)	Minimum Width	Maximum Depth	Minimum Height (stove to ceiling)
59" (1499-mm)	48" (1220-mm)	36" (915-mm)	51" (1295-mm)	48" (1220-mm)	18" (460-mm)





### Clearances to Combustible Surfaces for Both Heart Mount (4" legs) and Freestanding (6" legs) Stoves

You can use any of the following stovepipes when installing your stove in a freestanding location.

- A single wall connector stovepipe can be either 24 MSG or 25 MSG blued steel. You must comply with larger clearances with single wall pipe.
- A double wall connector, close clearance stovepipe, must be used with a listed factory-built "Type HT" chimney or double wall pipe to reduce clearances. Double wall connector pipe is available from several manufacturers; ask your dealer to help you choose the most appropriate pipe for your installation.
- Several types of air insulated connector stovepipes are Simpson Dura Vent DVL, Metalbestos DS, Security, GSW, and Ameritec.

When installing a chimney connector, do not pass them through a floor, a ceiling, any attic or roof space, closet, or similar concealed space. If you are passing stovepipe through a combustible wall or partition, your installation must conform to NFPA 211 or CAN/CSA-B365 standards.

For the sake of safety, make sure you allow for the minimum clearances from chimney connectors to all surrounding surfaces such as walls, ceilings, and floors—combustible or not.

The clearances for a typical chimney connection and two freestanding locations—in a corner and in an alcove—follow. The single wall clearances are generic; the Double wall clearances are for Simpson Dura Vent DVL. *Make sure you check the exact specifications from the manufacturer of your connector.*

### Rear Heat Shield and Blower

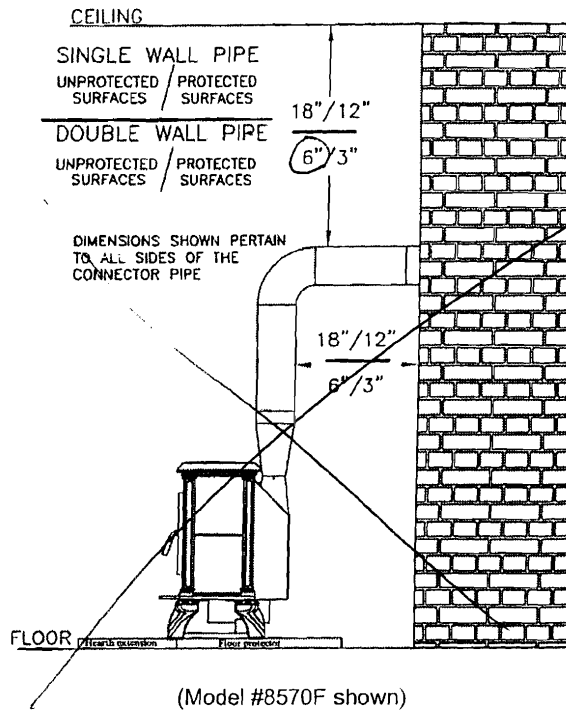
You can reduce stove and pipe clearances when you install the optional Rear Heat Shield Kit (part number 95-68700). (Please see "Optional Accessories" on page 41 for more information.)

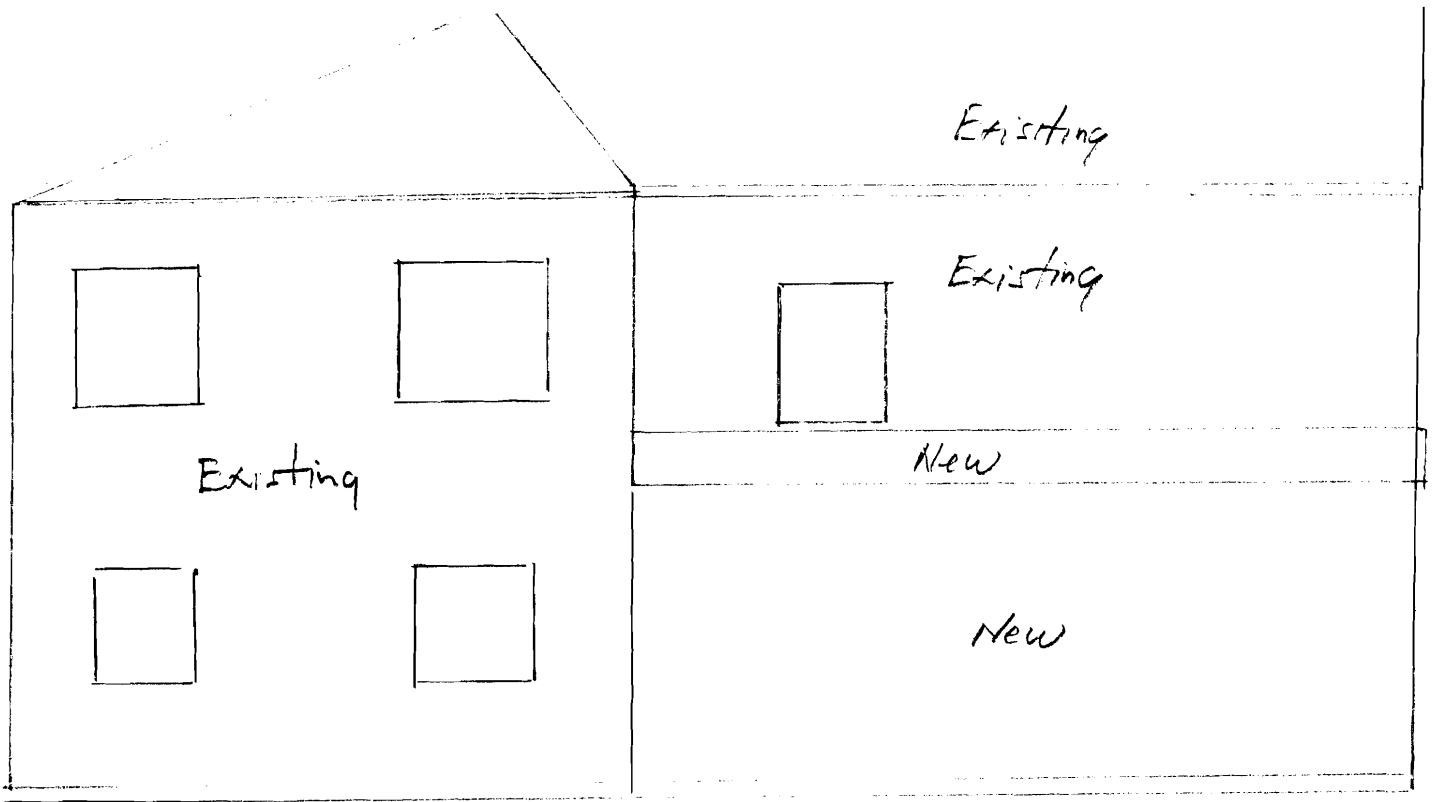
### Clearances from Stovepipes

This table and illustration lists the minimum clearances from your single- and double-wall stovepipe to both unprotected and NFPA 211 protected surfaces. (For more information about NFPA protected surfaces, please refer to "Clearances to NFPA 211 Protected Surfaces" on page 9.)

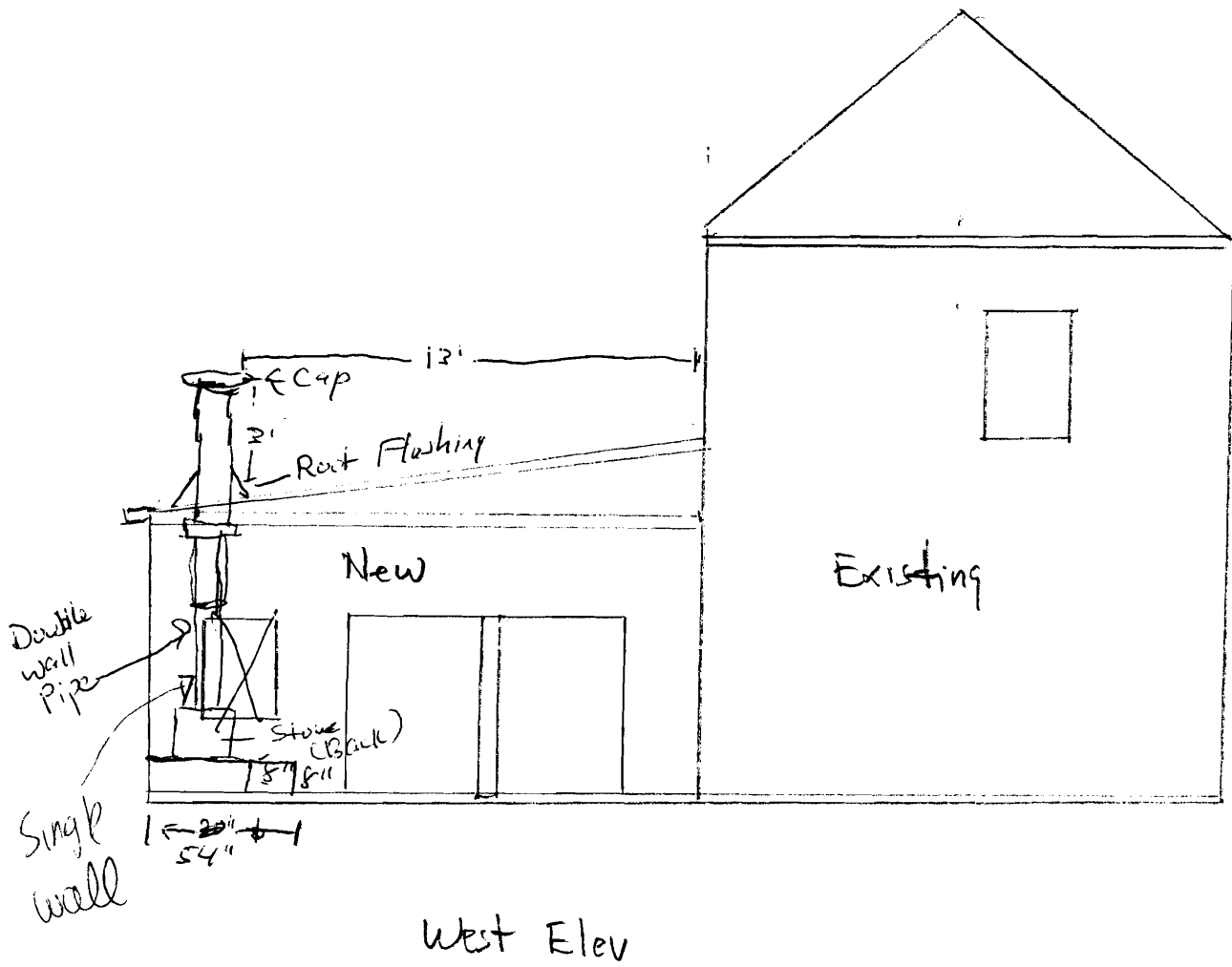
Connector Type	Unprotected Surfaces	NFPA 211 Protected Surfaces
Single wall connector pipe	18" (460 mm)	12" (305 mm)
Double wall connector pipe (see manufacturer's specifications)	6" (155 mm)	3" (80 mm)

NFPA 211  
Table 6-5.1.2  
Reduces to 9"





North Elev



West Elev

## Venting Components and Configuration

### Components of a Venting System

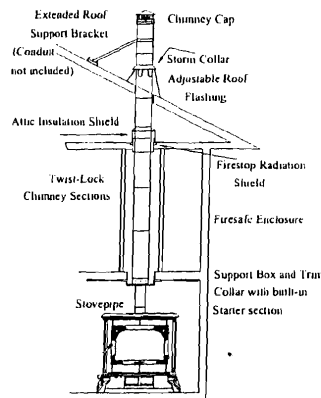
The complete venting system consists of several components: chimney connector, wall thimble, wall pass-through, chimney, and liner. It is *absolutely necessary* that you install all of these components within the clearances to combustibles discussed earlier to install your stove safely.

To protect against the possibility of a house fire, you *must properly install and constantly maintain the venting system*. Upon inspection, immediately replace rusted, cracked, or broken components.

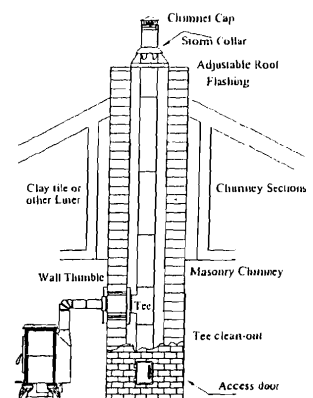
- The *chimney connector* is the stovepipe from the wood stove to the chimney. Install it into the stainless steel oval-to-round connector (mounted on the flue collar) on the wood stove and connect it to an approved chimney. The chimney connector stovepipe must be a 6" (152 mm) diameter, 24 MSG or 25 MSG blued steel connector pipe. *Do not use aluminum or galvanized steel pipe*—they cannot withstand the extreme temperatures of a wood fire.
- A *wall thimble* is a manufactured (or site-constructed) device installed in combustible walls through which the chimney connector passes to the chimney. It keeps walls from igniting. You must use a wall thimble when installing a chimney connector through a combustible wall to the chimney.
- A *wall pass-through* (or chimney support package) also keeps walls from igniting. You must use one when connecting through a wall or ceiling to a prefabricated chimney.
- Only install this stove to a lined *masonry chimney* or an approved high temperature *prefabricated residential type building heating appliance chimney*. *Do not* connect this stove to a chimney flue serving another appliance; you will compromise the safe operation of both the wood stove and the connected appliance.

- A *liner* is the UL 1777 or ULC S635 (for factory built fireplace or masonry) chimney. It connects the stainless steel oval-to-round adapter to the chimney rain cap.

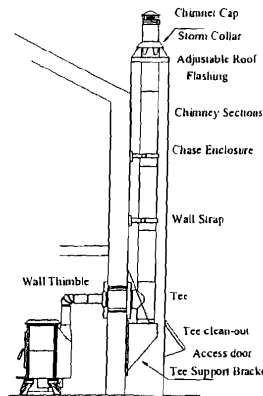
You must connect your stove to a chimney or liner comparable to those recommended in this manual. *Do not use stovepipe as a chimney*. Use stovepipe for freestanding installations only to connect the stove to a proper chimney.



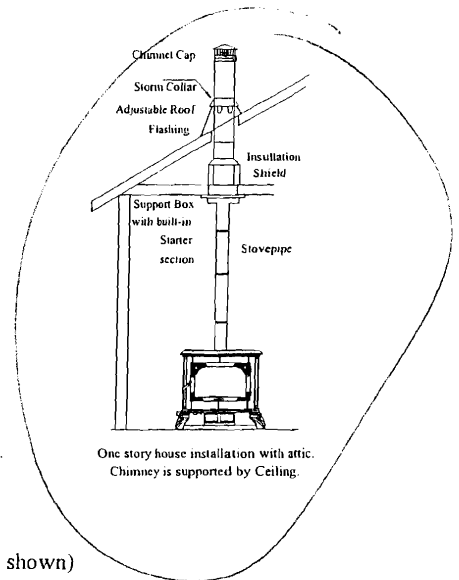
Two story house installation with attic.



Chimney pipe through Clay tile or other Lined Masonry Chimney



Chimney through outer wall with enclosed chase. Chimney is supported by Tee Support Bracket.



One story house installation with attic. Chimney is supported by Ceiling.

(Model #8570F shown)

**WARNING:**  
DO NOT CONNECT THE STOVE TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.

5' Double wall

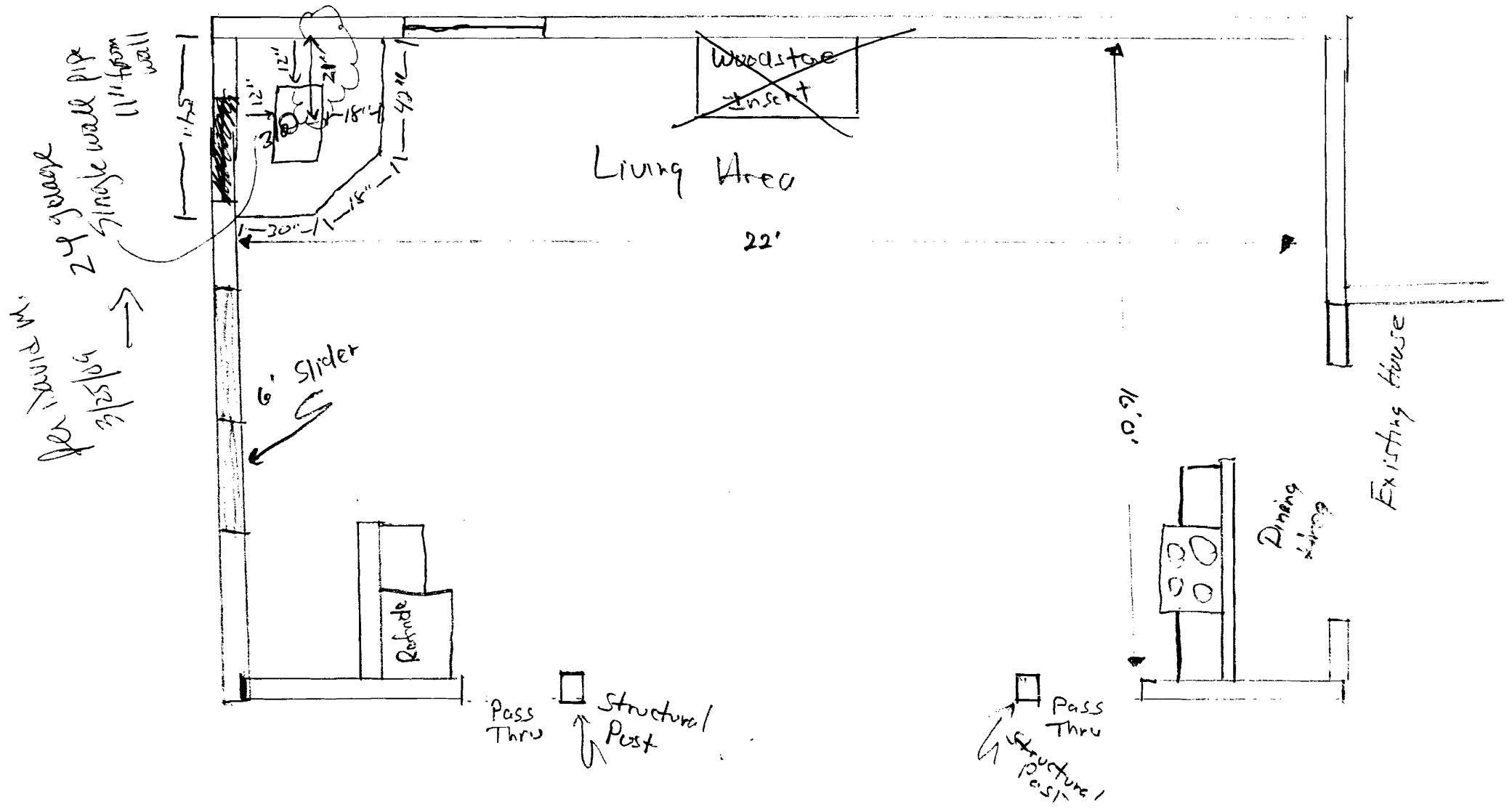
4-5' Metal Base

Roof Flashing

Cap

Take **R**

274 St John St.



Existing House - Southside

Over →

**GENEROUS HEAT MEETS VERSATILE  
FREE-STANDING OR HEARTH-MOUNT STYLE**

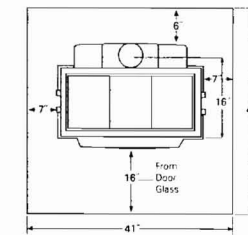
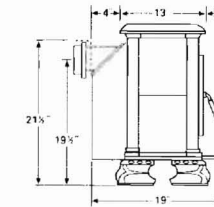
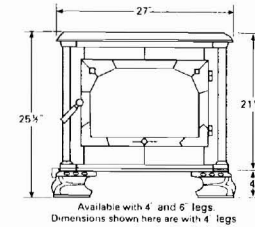
Size: 50,000 BTUs Heats up to: 1,800 sq. ft. EPA rating: 1.9 grams per hour  
Maximum log length: 21" Model: #8570

**HOMESTEAD  
WOODSTOVE**

*Homestead hearth-mount model with 4" legs featured in blue/black satin enamel finish, shown with optional steel surround.*



*Homestead freestanding model with 6" legs featured in brown majolica enamel finish.*



**CASTING FINISH:**

- Painted matte black
- Black high gloss enamel
- Blue/black satin enamel
- Brown majolica enamel
- Seafoam majolica enamel

**STONE FINISH:**  
Polished gray soapstone

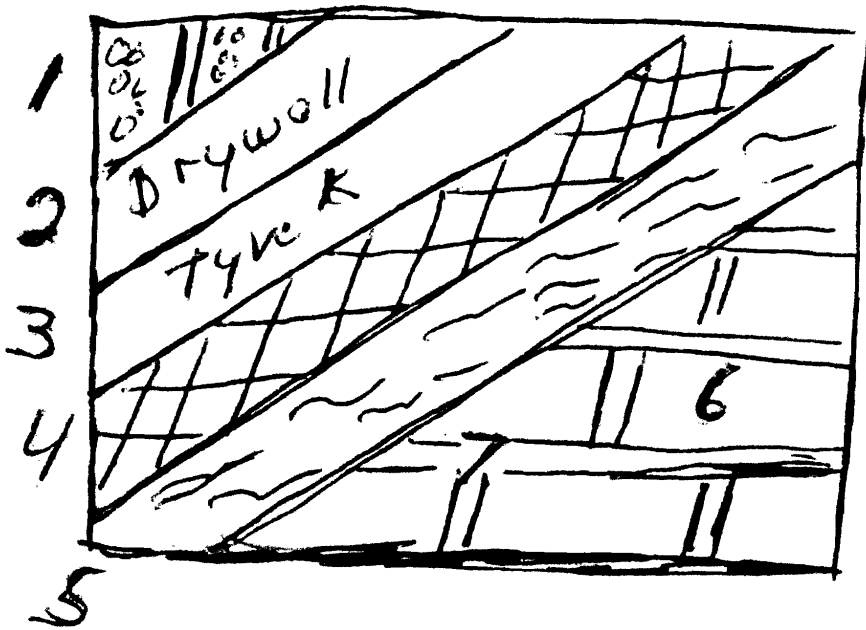
FOR  
ADDITIONAL  
SPECIFICATIONS  
AND OPTIONS  
TURN TO  
PAGE 20

Preparation per Photos  
Does not meet

NFPA 211  
for reduction  
methods

JMB

MAR 30 2009



3/30/09

Will install  
Heat shield per  
Stove specs  
to reduce  
to 12"  
to sheetrock

- ① 2x6 Framing / R-14 Insulation
- ② 1/2" Sheetrock
- ③ Tyvek (Vapor Barrier)
- ④ Metal Lath
- ⑤ 1/4" scratch coat, Type S Mortar
- ⑥ 1/2" Brick, Buttered with 1/2" Type S Mortar
- ⑦ Mortar Joint

DEPT. OF  
CITY OF  
MAR 30 2009

ONT

**tyvek**  
HomeWrap

DUP

**tyvek**  
HomeWrap





DEPT. OF  
CITY OF  
MAR 30 2009  
RECEIVED



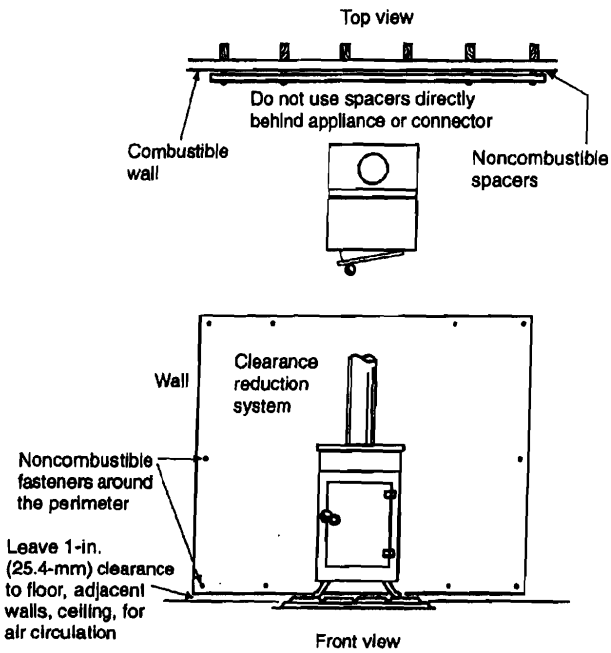
Table 6-5.1.2 Reduction of Connector Clearance with Specified Forms of Protection

Clearance Reduction Applied to and Covering All Combustible Surfaces within the Distance Specified as Required Clearance with No Protection (See 6-5.1 and Table 6-5.1.1.)	Maximum Allowable Reduction in Clearance (%)		Where the required clearance with no protection is 18 in. (457 mm), the following clearances are the minimum allowable clearances. For other required clearances, calculate minimum allowable clearance from maximum allowable reduction. (See Note 8.)			
	As Wall Protector (%)	As Ceiling Protector (%)	As Wall Protector		As Ceiling Protector	
			in.	mm	in.	mm
3 1/2-in. (90-mm) thick masonry wall without ventilated air space	33	—	12	305	—	—
1/2-in. (13-mm) thick noncombustible insulation board over 1-in. (25.4-mm) glass fiber or mineral wool batts without ventilated air space	50	33	9	229	12	305
0.024-in. (0.61-mm), 24-gauge sheet metal over 1-in. (25.4-mm) glass fiber or mineral wool batts reinforced with wire, or equivalent, on rear face with ventilated air space	66	50	6	152	9	229
3 1/2-in. (90-mm) thick masonry wall with ventilated air space	66	—	6	152	—	—
0.024-in. (0.61-mm), 24-gauge sheet metal with ventilated air space	66	50	6	152	9	229
1/2-in. (13-mm) thick noncombustible insulation board with ventilated air space	66	50	6	152	9	229
0.024-in. (0.61-mm), 24-gauge sheet metal with ventilated air space over 0.024-in. (0.61-mm), 24-gauge sheet metal with ventilated air space	66	50	6	152	9	229
1-in. (25.4-mm) glass fiber or mineral wool batts sandwiched between two sheets 0.024-in. (0.61-mm), 24-gauge sheet metal with ventilated air space	66	50	6	152	9	229

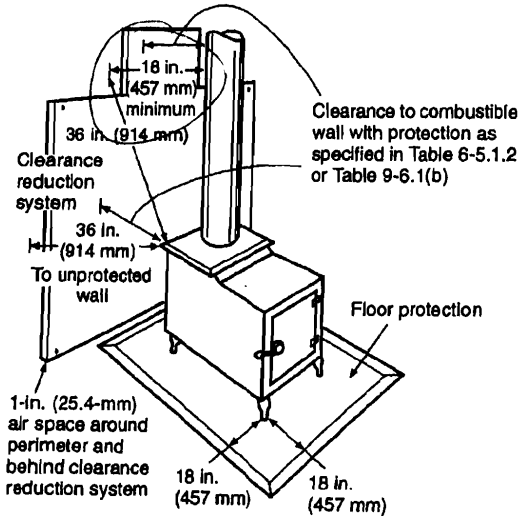
with DurRock to protect wall from single wall pipe reduction to 9"

1. Spacers and ties shall be of noncombustible material. No spacers or ties shall be used directly behind appliance or connector.
2. With all clearance reduction systems using a ventilated air space, adequate air circulation shall be provided as described in 6-5.5. There shall be at least 1 in. (25.4 mm) between the clearance reduction system and combustible walls and ceilings for clearance reduction systems using a ventilated air space.
3. Mineral wool batts (blanket or board) shall have a minimum density of 8 lb/ft<sup>3</sup> (128.7 kg/m<sup>3</sup>) and have a minimum melting point of 1500°F (816°C).
4. Insulation material used as part of clearance reduction system shall have a thermal conductivity of 1.0 (Btu-in.)/(ft<sup>2</sup>-hr-°F) or less. Insulation board shall be formed of noncombustible material.
5. If a single-wall connector passes through a masonry wall used as a wall shield, there shall be at least 1/2 in. (13 mm) of open, ventilated air space between the connector and the masonry.
6. There shall be at least 1 in. (25.4 mm) between the connector and the protector. In no case shall the clearance between the connector and the wall surface be reduced below that allowed in the table.
7. All clearances and thicknesses are minimum; larger clearances and thicknesses shall be permitted.
8. To calculate the minimum allowable clearance, the following formula can be used:  $C_{pr} = C_{un} \times (1 - R/100)$ , where  $C_{pr}$  is the minimum allowable clearance,  $C_{un}$  is the required clearance with no protection, and  $R$  is the maximum allowable reduction in clearance.

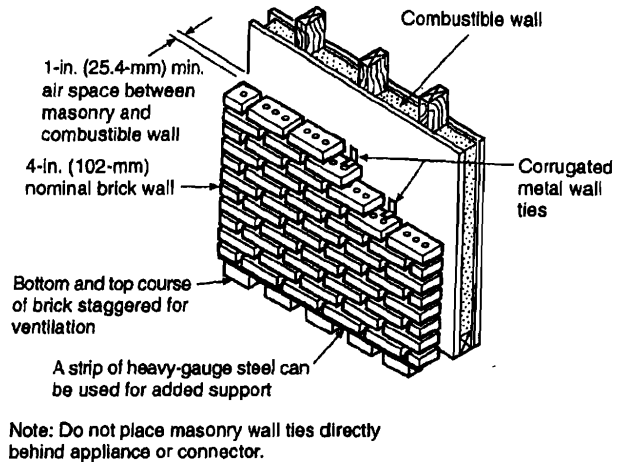
**FIGURE 9-6.2.1(a) Clearance reduction system — fastener location.**



**FIGURE 9-6.2.1(b) Distance to combustable wall/floor.**

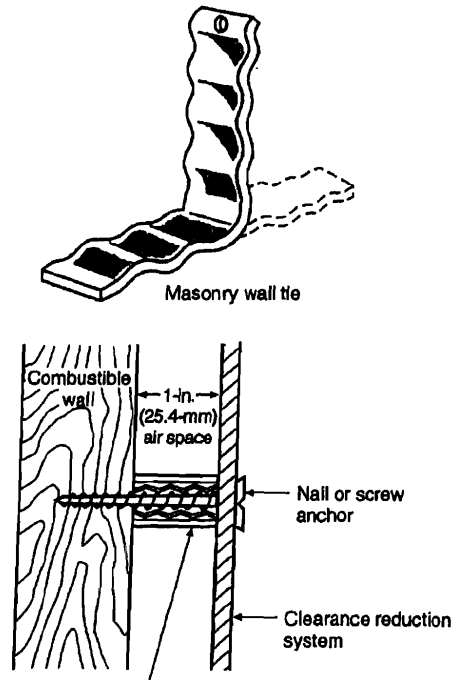


**FIGURE 9-6.2.1(c) Masonry clearance reduction system.**



Masonry clearance reduction system

**FIGURE 9-6.2.1(d) Fastener detail.**

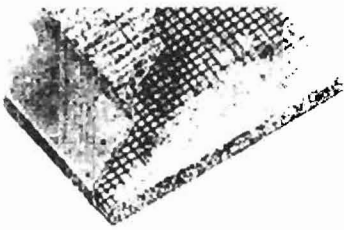


1-in. (25.4-mm) noncombustible spacer such as stacked washers, small-diameter pipe, tubing, or electrical conduit

Masonry walls can be attached to combustable walls using wall ties. Do not use spacers directly behind appliance or connector.

# DUROCK<sup>®</sup> Cement Board

The information contained in this document applies to Durock<sup>®</sup> brand cement board and Durock cement board Next Gen.



**Backerboard for ceramic tile and exterior finish systems**

- Water-durable, mold-resistant substrate for high-moisture areas (scores a 10 when tested per ASTM D3273)
- Can be used in interior or exterior applications
- Will not rot, warp, delaminate or disintegrate
- Easy to score and snap
- Non-combustible
- Rough side for thin-set mortar and portland cement basecoat applications
- Smooth side for ceramic tile mastic applications

**Description**

Both cement board products provide an outstanding base for glass and ceramic mosaics; ceramic and quarry tile; lugged tile; and thin stone and thin brick. Suitable for application to wood or steel framing spaced 16" o.c. in new construction and in remodeling. Board is ideal for use in partitions, walls, floors, soffits and ceilings in wet or dry areas. It does not deteriorate in the presence of water, so it is highly durable in high-moisture areas such as baths, showers, kitchens and laundry rooms. Also adaptable for fences, fireplace fronts, mobile home skirting, agricultural buildings, garage wainscoting and exterior finishes.

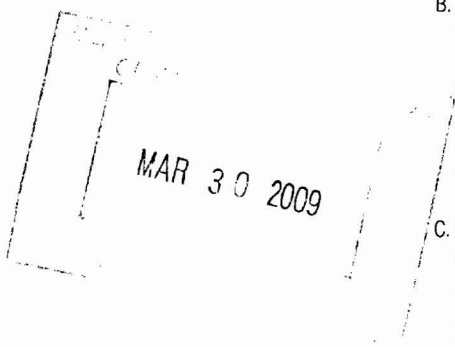
**Limitations**

1. Both cement board products are designed for positive or negative uniform loads up to 30 psf. For complete information on the use of Durock panels in exterior systems, consult your USG sales representative.
2. Wall applications: Maximum stud spacing: 16" o.c. (24" o.c. for cavity shaft wall assembly); maximum allowable deflection, based on stud properties only: L/360. Maximum fastener spacing: 8" o.c. for wood and steel framing; 6" o.c. for ceiling applications.
3. Floor applications: Maximum joist spacing 24" o.c. The subfloor system should be designed with a minimum deflection limit of L/360 for the span. Some finish materials may require a more rigid sub-assembly (such as large format tile and natural stone products). In these cases, follow the manufacturer's minimum requirements. The subfloor should be APA Span-Rated Plywood or OSB with an Exposure 1 classification or better with tongue and groove or back blocked at the unsupported edges.
4. Maximum dead load for ceiling system is 7.5 psf.
5. Steel framing must be 20-gauge or heavier.
6. Do not use drywall screws or drywall nails.
7. Do not use either 5/16" Durock cement board for wall or ceiling applications.
8. Do not use either Durock cement board product with vinyl flooring.

**Installation**

- A. Apply cement board product with ends and edges closely abutted, but not forced together. Stagger end joints in successive courses.
- B. Fasten Durock panels to framing with specified fasteners. Drive fasteners into field of panels first, working toward ends and edges. Hold panels in firm contact with framing while driving fasteners. Space fasteners maximum 8" o.c. for walls, 6" o.c. for ceilings, with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. Drive nails and screws so bottoms of heads are flush with panel surface to ensure firm panel contact with framing. Do not overdrive fasteners. Approved fasteners include: 1. Durock<sup>™</sup> screws, USG sheathing, type WF for wood-frame or type SF for steel-frame construction, or 2. Minimum (1-1/2") 11-gauge, hot-dipped galvanized roofing nails with nominal 7/16" diameter head for wood framing. Prefill joints with tile-setting mortar or adhesive and then immediately embed DUROCK tile backer tape and level joints.
- C. Cement board products should be cut to size with a knife and straight edge. A power saw should be used only if it is equipped with a dust-collection device. Worker should wear NIOSH/MSHA-approved dust mask.

Refer to current United States Gypsum Company literature, *Moisture-Resistant Assemblies* (SA934) and *Exterior Service Systems* (SA700), for complete installation information. For technical assistance, call USG Technical Service at 800.USG.4YOU (874.4968).



**Product Data**

**Sizes and Packaging**

1/2" or 5/8" thickness, 32", 36" or 48" width x lengths of 4', 5', 6', 8'. 5/16" thickness, 36" or 48" width x 4' to 5' length. Custom sizes may be available upon request.

**Standards**

DUROCK cement boards exceed ANSI standards for cementitious backer units (CBU). See ANSI A118.9-1999 for test methods and specifications for CBU and ANSI 108.11-1999 for interior installation of CBU. Exceeds industry standards as an exterior substrate for exterior finishes. Exceeds ASTM C1325 standards for non-asbestos fiber-mat reinforced cementitious backer units.

**Availability**

DUROCK cement board and Durock cement board Next Gen are distributed in select markets throughout the United States. Contact a United States Gypsum Company sales office or sales person for additional information.



MAR 30 2009

**Composition and Materials** DuRock cement board products are formed in a continuous process of aggregated portland cement slurry with polymer-coated, glass-fiber mesh completely encompassing edges, back and front surfaces. The edges are formed smooth—patent No. 4,916,004. The ends are square cut.

**Environmental Conditions** All materials should be delivered and stored in their original unopened package and stored in an enclosed shelter providing protection from damage and exposure to the elements. Even though the stability and durability of DuRock cement board is unaffected by the elements, moisture and temperature variations may have an effect on the bonding effectiveness of basecoats and adhesives.

**Technical Data**

Property	Unit of Measure	ASTM Test Method	1/2" Cement Board Typical Value	5/16" Underlayment Typical Value
Flexural strength	psi	C947-81	750	1250
Indentation strength	psi	D2394	>1250	>1250
Shear bond strength	psi	ANSI A118.4	>50	>50
Uniform load	psf (studs spaced 16" o.c.)	—	30 maximum	—
Water absorption	% by wt. 24 hrs.	C473	15	15
Nail-pull resistance	lb. (0.4" head diameter, wet or dry)	C473	90	—
Weight	psf	C473	<3.0	<2.3
Freeze/thaw resistance	procedure B, number of cycles with no deterioration	C666	100	100
Mold resistance	—	G21	No growth	No growth
Non-combustibility	Pass/Fail	E136	Pass	Pass
Surface burning characteristics	flame/smoke	E84	0/0	0/0
Thermal	"R"/k value	C518	0.26/1.92	—
Standard method for evaluating ceramic floor tile installation systems	Passes cycles 1-6	C627	Light Commercial	Light Commercial
Minimum bending radius	ft. (requires special framing—details available upon request)	—	8	—

**Submittal Approvals:**

<b>Job Name</b>		
<b>Contractor</b>		<b>Date</b>

**Product Information**  
See usg.com for the most up-to-date product information.  
**Warning**  
Portland cement is strongly alkaline. Direct contact can be corrosive and cause severe damage or chemical burns to the eyes and wet or moist skin. Avoid contact with eyes and skin. Wear eye protection, alkali-resistant protective gloves, long-sleeved shirts and pants to prevent direct contact. If eye contact occurs, immediately flush thoroughly with water for 30 minutes and seek

medical advice. Inhalation of dust may be corrosive or cause chemical burns or irritation to nose, throat and respiratory tract. Avoid breathing dust. Use in a well-ventilated area or provide sufficient local ventilation. If dusty, wear a NIOSH/MSHA-approved dust respirator. Wash thoroughly with soap and water after use. Do not ingest. If ingested, call physician. If cutting board with a power tool, use a wet or vacuum saw to reduce the amount of dust generated. Panels are heavy and can fall

over, causing serious injury or death. Avoid creating a tripping hazard and do not exceed floor limit loads. Long-term breathing of respirable crystalline silica dust can cause permanent lung damage and/or cancer. Product safety information: (800) 507-8899 or usg.com.  
**KEEP OUT OF REACH OF CHILDREN.**  
**Trademarks**  
The following trademarks are owned by United States Gypsum Company or its related companies: USG and DuRock.

**Note**  
Products described here may not be available in all geographic markets. Consult your U.S. Gypsum Company sales office or representative for information.  
**Notice**  
We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to

replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.  
**Safety First!**  
Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read MSDS and literature before specification and installation.



Manufactured by  
United States Gypsum Company  
550 West Adams Street  
Chicago, IL 60661

**800 USG.4YOU (874-4968)**  
usg.com

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# BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

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.

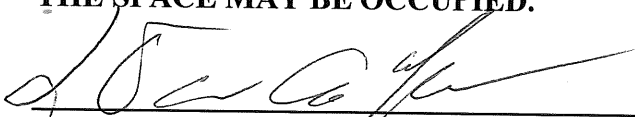
Inspection for wall preparation for reduction to clearances prior to completion of finishing material and installation of the stove pipe.

Final inspection required at completion of work.

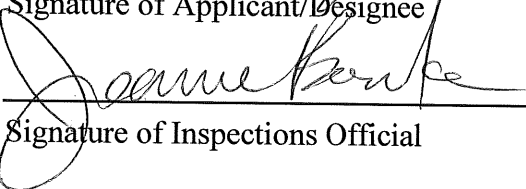
Certificate of Occupancy is not required for certain projects. Your inspector can advise you if your project requires a Certificate of Occupancy. All projects DO require a final inspection.

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

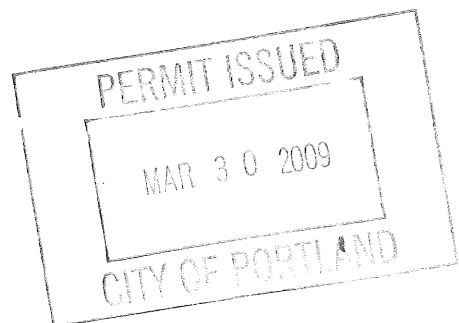
CERIFICATE OF OCCUPANICES MUST BE ISSUED AND PAID FOR, BEFORE THE SPACE MAY BE OCCUPIED.

  
\_\_\_\_\_  
Signature of Applicant/Designee

3/31/09  
Date

  
\_\_\_\_\_  
Signature of Inspections Official

3/30/09  
Date



CBL: 342 B016001

Building Permit #: 09-0228