Form # P 04	DISPLAY	THIS C	CARD	ON	PRINCIPA	L FRO	NTAGE	OF	WORK	
Please Read Application And Notes, If Any, Attached		С	ITY F	OF P			ND Pern	PE nit Number	RMITOSSUL	-D
This is to certify	that <u>EDCL</u> I	LC /TBD					/		16.00	7-4
has permission t	• Interior	& exterior ren	ovatior				$- \leftarrow \epsilon$	CITY -		<i> </i>
AT 23 HAMPS	HIRE ST					O2	28 P00300	OF	PORT	<u></u>
provided th of the prov the constru- this depart Apply to Pul and grade if such informa	hat the pers isions of th uction, main ment. blic Works for s nature of work ation.	on or pers e Statutes itenance a street line c requires	sons, s of N and u N g b la H	ine ar of bu ication and w re this l ed or c IR NOT	insped insped n permiser ding or t ICE IS REQUI	must merec ed-in. RED.	ng this p of the (es, and (Proc ing (ermit sl City of F of the a ertificate of cured by co or part the	portland re pplication of of occupancy wher before the preof is occupie	r with all gulating on file in must be his build- ed.
OTHER Fire Dept Health Dept Appeal Board Other	Department Name	ROVALS					(IAM) Dire	etor - Building &	Inspection Services	115/07
		P	PENALT	Y FOF		GTHIS CA	RD		/	

Ţ

City of Portland, Maine -	- Building or Use]	Permit Applicatio	n Pe	rmit No:	Issue Date:		CBL:	
389 Congress Street, 04101	Tel: (207) 874-8703	, Fax: (207) 874-871	.6	07-1009			028_P0	03001
Location of Construction:	Owner Name:		Owne	r Address:			Phone:	
23 HAMPSHIRE ST	EDCL LLC		34 N	34 MAIN ST STE 2A				
Business Name:	Contractor Name	:	Contr	actor Address:			Phone	
	TBD		Por	tland				
Lessee/Buyer's Name	Phone:		Permi	it Type:				Zone:
			Alte	erations - Con	nmercial			K-6
Past Use:	Proposed Use:		Perm	it Fee:	Cost of Work:	CEC) District:	
Residential multi-family	Residential mu	Ilti-family Interior &		\$1,095.00	\$100,000.0	00	1	
	exterior renov	ations	FIRE	E DEPT:	Approved IN	SPECTIO	DN:	<u> </u>
legal.	use - 3 du (per	+ 07-0380)] Denied	se Group:	up: RZ Type: 3B	
)		Se	ee Cond	litures	IK	36-2	003
Proposed Project Description:				,		- J	hall.	11-
Interior & exterior renovations	1 .		Signa	iture: (Sico	CARR Sig	gnature:	Y16(9BDT
(connicted to inter	nor chemo permit		PEDE	PEDESTRIAN ACTIVITIES DISTRICT (P.A			2	
			Actio	on: Approv	ed Approve	ed w/Con	ditions	Denied
		_	Signa	iture:		Dat	e:	
Permit Taken By:	Date Applied For:	-		Zoning	Approval			
dmartin	08/17/2007							
1. This permit application do	es not preclude the	Special Zone or Reviews		Zonin	ig Appeal		listoric Pres	ervation
Applicant(s) from meeting Federal Rules.	applicable State and	Shoreland		Variance			Not in Distri	et or Landmark
2. Building permits do not in septic or electrical work.	clude plumbing,	Wetland		Miscella	neous		Does Not Re	quire Review
3. Building permits are void a within six (6) months of th	if work is not started e date of issuance.	Flood Zone		Conditio	nal Use		Requires Re	view
False information may inverse permit and stop all work	alidate a building	Subdivision		Interpretation			Approved	
	GEE	Site Plan		Approve	d		Approved w	Conditions
FERMIT	12000	Maj 🛄 Minor 🛄 MM	I 🗍	Denied			Denied	
T 007	15	01 w1 conditions Date: 8/24/07 1	sh	Date:		Date:	ABN	
CITY C	POST MOD]						

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

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.

Footing/Building Location Inspec	etion: Prior to pouring concrete
Re-Bar Schedule Inspection:	Prior to pouring concrete
Foundation Inspection:	Prior to placing ANY backfill
Framing/Rough Plumbing/Electr	ical: Prior to any insulating or drywalling
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.

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

Signature of Inspections Official

CBL:

Building Permit #:

City of Portland	l, Maine - Bui	lding or Use Permit	;		Permit No:	Date Applied For:	CBL:
389 Congress Stre	et, 04101 Tel: ((207) 874-8703, Fax: (207) 874	-8716			028 P003001
Location of Construction	on:	Owner Name:		•	Owner Address:		Phone:
23 Hampshire St		EDCL LLC			34 MAIN ST STE	2A	
Business Name:		Contractor Name:		•	Contractor Address:		Phone
		TBD			Portland		
Lessee/Buyer's Name		Phone:		1	Permit Type:		
					Alterations - Mult	ti Family	
Proposed Use:			1	ropose	d Project Description:		
Residential multi-fa renovations	ımily - three fami	ly - Interior & exterior		Interio	r & exterior renova	ations (interior demo	permit #07 0380)
 This permit is b work. This property s approval. 	eing approved on nall remain a three	the basis of plans submi e family dwelling. Any cl	tted. Any	deviat se shal	ions shall require a l require a separate	a separate approval b e permit application f	efore starting that for review and
Dept: Building	Status: A	Approved with Condition	s Rev	iewer:	Jeanine Bourke	Approval Da	ate: 10/15/2007
Note:							Ok to Issue: 🗹
1) Separate permi Separate plans	s are required for may need to be su	any electrical, plumbing bmitted for approval as a	, or HVA a part of th	C syste	ms. cess.		
 All penetratios ASTM 814 or U 	through rated asse JL 1479, per IBC	emblies must be protected 2003 Section 712.	d by an ap	proved	firestop system in	stalled as tested in ac	ecordance with
Dept: Fire	Status: A	Approved with Condition	is Rev i	iewer:	Capt Greg Cass	Approval Da	ate: 08/24/2007
Note:							Ok to Issue:
1) The Fire alarm Compliance let	and Sprinkler systems are required.	ems shall be reviewed b	y a license	d cont	ractor[s] for code o	compliance.	
2) All construction	shall comply wit	h NFPA 101					

Comments:

10/2/2007-jmb: Per our conversation today, here are the items that need to be addressed to continue the plan review process:

1. Specific details on the UL design of the rated wall and floor/ceiling assemblies.

2. Reference to the chimney clearance to new framing and draftstop detail.

3. Electrical plans detailing smoke detector location and UL listing of fixtures penetrating rated assemblies.

4. Details of all structural changes.

One that I forgot:

5. Identify hazardous glazing requirements

Thanks

Jeanie Bourke

Inspection Services Division Director

10/11/2007-jmb: Spoke with Curtis D., apparently I sent the wrong email to the architect. Resent, they will provide plans.

10/12/2007-jmb: Plans submitted for the requested information.

Location of Construction:	Owner Name:	Owner Address:	Phone:
23 Hampshire St	EDCL LLC	34 MAIN ST STE 2A	
Business Name:	Contractor Name:	Contractor Address:	Phone
	TBD	Portland	
Lessee/Buyer's Name	Phone:	Permit Type:	i
		Alterations - Multi Family	

10/15/2007-jmb: Left msg. For Curtis to call. Curtis called back, verified there will be some penetrations of fixtures in the floor ceiling assembly, condition for firestop, ok to issue



General Building Permit Application

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

Location/Address of Construction: 23 Hampshire Street, Portland, Maine						
Total Square Footage o	f Proposed Structure 4,400 Square Feet	Square Footag	e of Lot 2,117 Square Feet			
Tax Assessor's Chart,	Owner: EDCL, LLC		Telephone:			
Block & Lot	134 Main Street, Winthrop, ME (04364	(207) 377-8977			
Chart# 28						
Block# P						
Lot# <u>3 and 17</u>						
Lessee/Buyer's Name	Applicant name, address & telephone:		Cost Of			
(If Applicable)	Curtis S. Dow		Work: \$100,000.00			
	Buck Consulting Group, LLC		Fee: \$1,020,00			
N/A	16 Tannery Lane		1 cc. \$1,020.00			
	PO Box 1367		C of O Fee: \$75.00			
	Camden, ME 04843					
	(207) 236-9970		Total Fee: \$1,095.00			
Current legal use (i.e. si	ngle family) <u>Multi-Family</u>					
If vacant, what was the	previous use? <u>Multi-Family</u>					
Proposed Specific use:	Multi-Family					
Is property part of a su	bdivision? <u>No</u> If ye	es, please name	N/A			
Project description:						
Renovate existing three	story multi-family residence pusuant to loca	al codes and orc	Inances with an updated			
layout, an automatic fir	e supression system in accordance with NFP	A Standard 15K	, MEP systems and finishes for			
the purpose of providing	ig habitable, cultate controlled living spaces.					
Contractor's name, address & telephone: TBD – Work to be competitively bid						
Who should we contact	Who should we contact when the permit is ready: Curtis S. Dow, Buck Consulting Group, LLC					
Mailing address: <u>P.O. B</u>	ox 1367, Camden, ME 04843	Phone: (207	7) 236-9970			

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 visit us on-line at <u>www.portlandmaine.gov</u>, stop by the Building Inspections 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 a	applicant: Date: 8/16/07
	CITY OF PORTLAND, ME
12	This is not a permit; you may not commence ANY work until the permit is issued.
15	AUG 1 7 2007
$\times 1^{5}$	
9	RECEIVED

Jeanie Bourke - 23 Hampshire permit

From:Jeanie BourkeTo:hansonarchitect@msn.comSubject:23 Hampshire permit

Per our conversation today, here are the items that need to be addressed to continue the plan review process:

- 1. Specific details on the UL design of the rated wall and floor/ceiling assemblies.
- 2. Reference to the chimney clearance to new framing and draftstop detail.
- 3. Electrical plans detailing smoke detector location and UL listing of fixtures penetrating rated assemblies.
- 4. Details of all structural changes.

One that I forgot:

Left Robert Chinese Bells Statute

5. Identify hazardous glazing requirements Thanks





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City of Portland Building Permit Application

1 (

23 Hampshire Street Portland, Maine



August 16, 2007



Buck Consulting Group, LLC 16 Tannery Lane, Suite 23 PO Box 1367 Camden, ME 04843 (207) 236-9970 Office (207) 236-9971 Facsimile www.bcgmaine.com

Table of Contents

Building Permit Application	01
As-Built Drawings	02
Proposed Floor Plans	03
Plot Plan	04
Fire Department Requirements Summary	05
Life Safety Plan	06

BUCK CONSULTING GROUP, LLC

16 Tannery Lane, Suite 23 PO Box 1367, Camden, Maine 04843 Office: 207-236-9970 Facsimile: 207-236-9971 Website: www.bcgmaine.com

August 16, 2007

Planning & Development Office City of Portland, Maine 389 Congress Street Portland, Maine 04101

RE: 23 Hamshire Street Building permit Application

To whom it may concern:

Please accept this letter and provided documents, as a request by Buck Consulting Group, LLC to obtain a Building Permit for alteration and renovation work in connection with the property located at 23 Hampshire Street, Portland, Maine.

The applicant is proposing to renovate the existing three unit residential building. The building is approximately 4,400 square foot or 1,100 square foot per floor (inclusive of basement level).

The proposed interior alterations to the property are primarily upgrading the existing layouts. Items to be undertaken include the following:

- ~ Replace the windows with energy efficient windows that simulate original windows (double hung);
- ~ Remove and replace doors with energy efficient doors;
- ~ Relocate interior walls as necessary to accommodate proposed floor plans;
- [~] Install and automatic sprinkler system (pursuant to NFPA Standard 13R);
- ~ Renovate building so that it will conform to local codes, ordinances and life safety requirements.

The proposed exterior alterations to the property are primarily to restore the exterior to its original appearance. Items to be undertaken include the following:

- ~ Repair the existing brick exterior and repoint as necessary;
- ~ Restore brick chimney's as necessary;
- ~ Replace the windows with energy efficient windows that simulate original windows;
- ~ Replace existing porches to match existing;



Planning & Development Office, City of Portland

The proposed site infrastructure consists of the following:

Spoke to +~ Curtis Dow. This will be done at a lotur date when dowork on garge on george on separate permit.

Reconfiguring the existing parking area for efficiency as well as vehicular and pedestrian safety.

Augmenting the existing landscaping on the property to enhance the exterior landscape amenities.

Domestic water service shall continue to be supplied by the public system supplier.

Sanitary service shall continue to be connected to public systems. No septic fields are proposed on site. It is estimated that the flows will not be impacted due to there being no proposed change in use.

The property, which currently has no fire protection system, will be equipped with an automatic fire suppression system, pursuant to NFPA Standard 13R requirements.

Thank you for considering our request, if at any time you should have questions, please feel free to contact me directly at 207-236-9970.

Sincerely,

Curtis S. Dow Executive Vice President Buck Consulting Group, LLC



2



Accessibility Building Code Certificate

Designer:	John E. Hansen, Architect				
Address of Project:	23 Hampshire St. Portland				
Nature of Project:	3 Unit apartment remodeling				
	3-story Type IIIb construction				
	Exempt from standards of ANSI A-117.1				

The technical submissions covering the proposed construction work as described above have been designed in compliance with applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act. Residential Buildings with 4 units or more must conform to the Federal Fair Housing Accessibility Standards. Please provide proof of compliance if applicable.

STERED ARCHA	Signature Title:	And Han Chitect
JOHN E.	Firm: ^{Jo}	ohn Hansen, Architect
A Strong the	Address:	632 Spruce Head Rd.
CATEOF MILLE		South Thomaston, ME 04858
V	Phone:	207-594-5310

For more information or to download this form and other permit applications visit the Inspections Division on our website at www.portlandmaine.gov

Building Inspections Division • 389 Congress Street • Portland, Maine 04101 • (207) 874-8703 • FACSIMILE (207) 874-8716 • TTY (207) 874-8936

4



,

Certificate of Design

Date:	August 8, 2007		
	•		
From:	John E. Hansen 	· · ·	
			·
			. ·
These plans and /	' or specifications covering c	onstruction work on:	
23 Hampshi	re St., Portland, ME		
A 3-unit a	rartment building		

•

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the *2003 International Building Code* and local amendments.

JOHN E. HANSEN 1110 *	Signature: Title: Architect Firm: G32 Spruce Head Rd. Address:
M	South Thomaston, ME 04858
	207-594-5310 Phone:

For more information or to download this form and other permit applications visit the Inspections Division on our website at www.portlandmaine.gov





		DOOR S	CHEDULE							
NO.	SIZE	TYPE	HARDWARF	FRAME	REMARKS					
B01	2'4'x3'-6" VERIFY SIZE	NS. STEEL		WOOD						
101	3-0'x6'-8'	6 PANEL INS. STEEL - 1 HR. RATED		STEEL WRAPAROUND					ļ	PORTLAND, MAINE
102	2-5" x 5-5" 2-5" x 5-5"	INS. STEEL MALF GLASS	+	wood	╆━━━━┥					
104	2-5 × 6-5	6 PANEL PINE								· []
105	2-5 x 5-5	6 PANEL PINE								
108	3-0" x 6-8" - PAIR	6 PANEL TYPE		++	├── ──					
107	2-6 x 6-6"	6 PANEL PINE		++						
109	6'-0" x 6'-8"	PINE PANEL TYPE - BIFOLD				_			LASS	1
201	3-0" x 6-8"	8 PANEL STEEL - 1 HR. RATED		STEEL WRAPAROUND	<u> </u>			SOLAR NULL	TION	
202	2-6" × 6-6"	6 PANEL PINE		WOOD					P. BOARD	
204	3'-0" x 6'-8" - PAIR	PINE PANEL TYPE				SOUND SELLATION			•	
205	2-6" x 6-8"	6 PANEL PINE				Ser GYP. BOARD				
206	5-0" x 6-6"	PINE PANEL TYPE - 81-FOLD		++				1000		
207	2-5 x 5-5	6 PANEL PINE		++				_		
209	2-6" x 6-8"	6 PANEL PINE - POCKET				BR TO A				
210	2-6" x 6-8"	6 PANEL PINE - POCKET		++	<u> </u>	-				1
301	347 4 6-8	A PANEL STEEL +1 HR RATED		STEEL WRAPAROLIND						
302	2-6 × 6-6	8 PANEL PINE		WOOD						
303	2-6" x 6-6"	6 PANEL PINE						KATED WALL	1*=1*0	
304	2-5 x 6-5	6 PANEL PINE		++				-	_	
306	2-5" x 6-6"	6 PANEL PINE								1
307	2'-6" x 6'-8"	6 PANEL PINE								
308	6'-0" x 6'-8"	PINE PANEL TYPE - BIFOLD		++						
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С	1-5"± x 6"-0"± VERIFY OPE	WING SIZE DOUBLE HUNG					HEW \$ OTP. BOWD			
l P	2-2"± x 4-0"± VERIFY OPE	NING SIZE DOUBLE HUNG			<u> </u>	4	OVER EXISTING FRAMING			
 -‡	2-2'± x 3'0'± VERIFY OPE	NING SIZE DOUBLE HUNG				1		, , , ,		
6	PAIR 2-8'x3'-4"	DOUBLE HUNG					NEW R-19 PIBERGLASS IN EXISTING PRAMINO	1 I		Cremban Kern and Address
8	2-0"± x 3-0"± VERIFY SIZE	SKYLIGHT				4	/ I			ARCHITECT
⊪—					-	1 /				JOHN E. HANSEN, ARCHITECT
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						1	į		1	Office: (207) 238-9970
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1							HEWSC GYP. BOAND	- HEW FIBERGLASS INSULATION IN EXISTING FLOOR SYSTEM		
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Fire Department Requirements - Supplemental Attachment.

- 1) Name, address and phone number of applicant and the project architect
 - Applicant: Curtis S. Dow Buck Consulting Group 16 Tannery Lane, Suite 23 PO Box 1367 Camden, ME 04843 (207) 236-9970

Architect:

John Hansen John Hansen Architects 632 Sprucehead Road South Thomaston, ME 04858 (207) 594-5310

2) Proposed use of structure (NFPA and IBC classification)

NFPA: Existing Apartment Building IBC: Residential R-2 Apartment House.

3) Square footage of proposed structure (total and per story)

4,400 Square Feet (inclusive of basement, 1,100 square feet per floor

4) Existing and proposed fire protection of structure.

System shall be designed in accordance with NFPA Standard 13R

- 5) Separate plans shall be submitted for
 - a. Suppression system

To be provided upon completion of fire suppression design by nominated sprinkler contractor.

b. Detection System (separate permit is required)

To be provided upon completion of fire suppression design by nominated sprinkler contractor.

- 6) A separate Life Safety Plan must include:
 - a. Fire resistance ratings of all means of egress (see attached Life Safety Plan)
 - b. Travel distance from most remote point to exit discharge (see attached Life Safety Plan)
 - c. Location of any required fire extinguishers (see attached Life Safety Plan)
 - d. Location of emergency lighting (see attached Life Safety Plan)
 - e. Location of exit signs(see attached Life Safety Plan)
 - f. NFPA 101 code summary (see attached Life Safety Plan)
- 7) Elevators shall be sized to fit an 80" x 24" stretcher

Not applicable - No elevator is proposed



BXUV.U305 Fire Resistance Ratings - ANSI/UL 263

Page Bottom

Fire Resistance Ratings - ANSI/UL 263

See General Information for Fire Resistance Ratings - ANSI/UL 263



Bearing Wall Rating – 1 HR.

Finish Rating – See Items 3, 3A, 3D, 3E and 3F.



Load Restricted for Canadian Applications – See Guide BXUV7



Wood Studs - Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.

2. Joints and Nail-Heads — Exposed or covered with fiber tape and joint compound, except where required for specific edge configuration. For tapered, rounded-edge gypsum board, joints covered with joint compound or fiber tape and joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced. Nailheads exposed or covered with joint compound.

3. **Gypsum Board*** – 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally. For an alternate method of attachment of gypsum panels, refer to Item 6 or 6A, Steel Framing Members*.

When Item 6, Steel Framing Members*, is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When Item 6A, Steel Framing Members*, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers. One layer of gypsum board attached to opposite side of wood stud without furring channels as described in Item 3.

When Item 7, resilient channels are used, 5/8 in. thick, 4 ft wide gypsum panels applied vertically. Screw attached furring channels with 1 in. long, self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between studs.

AMERICAN GYPSUM CO — Types AGX-1 (finish rating 23 min.), Type AGX-11 (finish rating 26 min) or Type AG-C

BEIJING NEW BUILDING MATERIALS PUBLIC

LTD CO — Type DBX-1 (finish rating 24 min).

BPB AMERICA INC — Type 1, Type SF3 (finish rating 20 min) or FRPC, ProRoc Type C or ProRoc Type X (finish rating 26 min), Type EGRG (finish rating 23 min)

BPB CANADA INC — ProRoc Type C, ProRoc Type X or ProRoc Type Abuse-Resistant (finish rating 26 min)

CANADIAN GYPSUM COMPANY — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type FCV (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IP-CAR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min).

G-P GYPSUM CORP, SUB OF

GEORGIA-PACIFIC CORP — Type 5 (finish rating 26 min), Type 6 (finish rating 23 min), Type 9 (finish rating 26 min), Type C (finish rating 26 min), Type DGG (finish rating 20 min), Type GPFS1 (finish rating 20 min), Type GPFS2 (finish rating 20 min), Type GPFS6 (finish rating 26 min), Type DAP, Type DD (finish rating 20 min), DA.

LAFARGE NORTH AMERICA INC — Type LGFC2 (finish rating 20 min), Type LGFC3 (finish rating 20 min), Type LGFC6 (finish rating 26 min), Type LGFC-C (finish rating 20 min), Type LGFC6A (finish rating 34 min), Type LGFC2A, Type LGFC-C/A.

NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C.

PABCO BUILDING PRODUCTS L L C, DBA

PABCO GYPSUM — Types C, PG-2 (finish rating 20 min), PG-3 (finish rating 20 min), Types PG-3W, PG-5W (finish rating 20 min), Type PG-4 (finish rating 20 min), Type PG-6 (finish rating 23 min), Types PG-3WS, PG-5WS (finish rating 20 min), Types PG-5, PG-9 (finish rating 26 min) or Type PG-C.

PANEL REY S A – Type PRX.

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD – Type EX-1 (finish rating 26 min)

TEMPLE-INLAND FOREST PRODUCTS CORP — Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X.

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type SCX (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type FCV (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type FRX-G (finish rating 29 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min).

USG MEXICO S A DE C V – Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type FCV (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), SCX (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min).

3A. **Gypsum Board*** – (As an alternate to Item 3) – 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.

AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), Type AG-C (finish rating 25 min.).

CANADIAN GYPSUM COMPANY — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type FCV (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min).

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type SCX (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type FCV (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type FRX-G (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 m

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type FCV (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX, Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min).

3B. **Gypsum Board*** – (As an alternate to Item 3) – Nom 3/4 in. thick, installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-3/8 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A.

CANADIAN GYPSUM COMPANY — Types AR, IP-AR.

UNITED STATES GYPSUM CO — Types AR, IP-AR.

USG MEXICO S A DE C V — Types AR, IP-AR.

3C. **Gypsum Board*** — (As an alternate to Items 3, 3A and 3B) - 5/8 in. thick, 2 ft wide, tongue and groove edge, applied horizontally to one side of the assembly. Installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-1/4 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A. Joint covering (Item 2) not required.

CANADIAN GYPSUM COMPANY — Type SHX.

UNITED STATES GYPSUM CO - Type SHX.

USG MEXICO S A DE C V - Type SHX.

3D. **Wall and Partition Facings and Accessories*** — (As an alternate to Items 3, 3A, 3B and 3C, not shown) - Nominal 5/8 in. thick, 4 ft wide panels, applied vertically to studs and bearing plates on one side of the assembly with 1-5/8 in. long Type S screws spaced 12 in. OC at perimeter of panels and 8 in. OC in the field. Horizontal joints of vertically applied panels need not be backed by studs. Panel joints covered with paper tape and two layers of joint compound. Screwheads covered with two layers of joint compound. Batts and Blankets placed in stud cavity as described in Item 5E. Not evaluated for use with Steel Framing Members, Furring Channels or Fiber, Sprayed.

QUIET SOLUTION INC — Type QuietRock QR-530 (finish rating 23 min).

3E. **Gypsum Board*** — (As an alternate to Items 3, 3A, 3B, 3C, or 3D -not shown) For Direct Application to Studs Only- Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs or tabs may be used in lieu of or in addition to the lead batten strips or optional at other locations. Max 3/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards underneath screw locations prior to the installation of the screws. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

RAY-BAR ENGINEERING CORP — Type RB-LBG (finish rating 24 min).

3F. **Gypsum Board*** – (As an alternate to Items 3, 3A, 3B, 3C, 3D, and 3E) – 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths of other than 48 in., gypsum boards are to be installed horizontally. Joints and nail heads treated as described in Item 2.

TEMPLE-INLAND FOREST PRODUCTS CORP — GreenGlas Type X (finish rating 23 min).

4. **Steel Corner Fasteners** — **(Optional)** — For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 5/8 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in. from corner of gypsum board, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using No. 6d cement coated nails.

5. **Batts and Blankets*** — (Optional - Required when Item 6A is used) Glass fiber or mineral wool insulation. Placed to completely or partially fill the stud cavities. When Item 6A is used, glass fiber or mineral wool insulation shall be placed to completely fill the stud cavities and shall be secured to the studs 24 in. OC with staples, nails or screws.

CERTAINTEED CORP

GUARDIAN FIBERGLASS INC

JOHNS MANVILLE INTERNATIONAL INC

KNAUF INSULATION GMBH

OWENS CORNING HT INC, DIV OF OWENS

CORNING — Corning Fiberglas Corp.

ROCK WOOL MANUFACTURING CO - Delta Board.

ROXUL INC

THERMAFIBER INC — Type SAFB.

5A. **Fiber, Sprayed*** — (Not shown - Not for use with Item 6A) As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 3.0 lb/ft³. Alternate application method: The fiber is applied with U.S. Greenfiber LLC Type AD100 hot melt adhesive at a nominal ratio of one part adhesive to 6.6 parts fiber to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 2.5 lb/ft³.

U S GREENFIBER L L C — Cocoon2 Stabilized or Cocoon-FRM (Fire Rated Material)

5B. **Fiber**, **Sprayed*** — (Not shown - Not for use with Item 6A) As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

NU-WOOL CO INC — Cellulose Insulation

5C. **Batts and Blankets*** — Required for use with resilient channels, Item 7, 3 in. thick mineral wool batts, placed to fill interior of wall, attached to the 4 in. face of the studs with staples placed 24 in. OC.

THERMAFIBER INC - Type SAFB

5D. **Glass Fiber Insulation** – (As an alternate to Item 5C) – 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, placed to fill the interior of the wall, attached to the 4 in. face of the studs with staples placed 24 in. OC. See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

5E. **Batts and Blankets*** – (Required for use with Wall and Partition Facings and Accessories, Item 3D) – Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

6. **Steel Framing Members (Optional, Not Shown)*** – Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members*** — Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC. RSIC-1 clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

PAC INTERNATIONAL INC - Types RSIC-1, RSIC-V.

6A. **Steel Framing Members (Optional, Not Shown)*** – Furring channels and Steel Framing Members on one side of studs as described below:

a. Furring Channels - Formed of No. 25 MSG galv steel, spaced 24 in. OC

perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members*** — used to attach furring channels (Item 6Aa) to one side of studs only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.

KINETICS NOISE CONTROL INC — Type Isomax.

7. **Furring Channel** — Optional - Not Shown - For use on one side of the wall - Resilient channels, 25 MSG galv steel, spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double lead Phillips head steel screws. When resilient channels are used, insulation, Items 5C or 5D is required.

8. **Caulking and Sealants** – (not shown, optional) A bead of acoustical sealant applied around the partition perimeter for sound control.



9. **STC Rating** — The STC Rating of the wall assembly is 56 when it is constructed as described by Items 1 through 6, except:

A. Item 2, above - Nailheads Shall be covered with joint compound.

B. Item 2, above - Joints As described, shall be covered with fiber tape and joint compound.

C. Item 5, above - Batts and Blankets* The cavities formed by the studs shall be friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.

D. Item 6, above - Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of the wall assembly.

E. Item 8, above - Caulking and Sealants (not shown) A bead of acoustical sealant shall be applied around the partition perimeter for sound control.

F. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as alternatives for obtaining STC rating.

10. Wall and Partition Facings and Accessories* – (Optional, Not shown) – Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

QUIET SOLUTION INC — Type QuietRock QR-510.

11. **Cementitious Backer Units*** — (Optional Item Not Shown - For Use On Face Of 1 Hr Systems With All Standard Items Required) - 1/2 in., 5/8 in., 3/4 in. or 1 in. thick, min. 32 in. wide.- Applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with cement board screws of adequate length to penetrate stud by a minimum of 3/8 in. for steel framing members, and a minimum of 3/4 in. for wood framing members spaced a max of 8 in. OC. When 4 ft. wide boards are used, horizontal joints need not be backed by framing.

NATIONAL GYPSUM CO — Type PermaBase

*Bearing the UL Classification Mark

Last Updated on 2007-07-30

Questions?

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23 HAMPSHIRE STREET

SUPPLEMENTAL SUBMISSION TO JEANIE BOURKE, INSPECTION SERVICES DIVISION DIRECTOR



Buck Consulting Group, LLC 89 Elm Street, Suite 201 PO Box 1367 Camden, ME 04843 (207) 236-9970





Report Date: 10/11/07

Data filename: Untitled.rck

Energy Code:	2003 IECC
Location:	Portland, Maine
Construction Type:	Multifamily
Glazing Area Percentage:	10%
Heating Degree Days:	7378

Construction Site:

Owner/Agent:

Designer/Contractor:

Compliance: Passes Ma	aximum UA: 777	Your Home UA: 686> 11.7% Better Than Code (UA)					
Assembly		Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Glazing or Door U-Factor	UA	
Ceiling 1: Flat Ceiling or Scissor Truss:		941	38.0	0.0		28	
Wall 1: Solid Concrete or Masonry:Interior Insulation:		3813	13.0	0.0		282	
Window 1: Metal Frame with Thermal Break:De	ouble Pane:	368			0.330	121	
Door 1: Solid:		42			0.500	21	
Floor 1: All-Wood Joist/Truss:Over Unconditioned Space:		941	0.0	0.0		234	
Boiler 1: Other (Except Gas-Fired Steam): 82.4	AFUE						

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2003 IECC requirements in RES*check* Version 4.0.1 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title

Signature

Date



Report Date: 10/11/07 Data filename: Untitled.rck

Energy Code: Location: Construction Type; Glazing Area Percentage: Heating Degree Days:

2003 IECC Portland, Maine Multifamily 10% 7378

Construction Site:

Owner/Agent:

Designer/Contractor:

Compliance: Passes	Maximum UA: 777	Your Home	e UA: 686 >	11.7% Bet	ter Than Cod	le (UA)
Asser	nbly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Glazing or Door U-Factor	UA
Ceiling 1: Flat Ceiling or Scissor T	russ:	941	38.0	0.0		28
Wall 1: Solid Concrete or Masonry	y:Interior Insulation:	3813	13.0	0.0		282
Window 1: Metal Frame with Ther	mal Break:Double Pane:	368			0.330	121
Door 1: Solid:		42			0.500	21
Floor 1: All-Wood Joist/Truss:Ove Boiler 1: Other (Except Gas-Fired	r Unconditioned Space: Steam): 82 4 AFUE	941	0.0	0.0		234

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2003 IECC requirements in REScheck Version 4.0.1 and to comply with the mandatory requirements listed in the REScheck Inspection Checklist.

AGNVSSON, [.[V Name - Title

Signature Date



Date: 10/11/07

Ceilings:

	Cenngs.
	Ceiling 1: Flat Ceiling or Scissor Truss, R-38.0 cavity insulation
	Well 4. Solid Concrete or Mesons electrics inclusion D 12.0 courts includion
ч	Commonte:
	Windows:
	Window 1: Metal Frame with Thermal Break:Double Pane, U-factor: 0.330
	For windows without labeled U-factors, describe features:
	#Panes Frame Type Thermal Break? Yes No
	Comments:
	Doors
	Doors.
	Comments:
	Floors:
	Floor 1: All-Wood Joist/Truss:Over Unconditioned Space, R-0 (uninsulated)
	Comments:
	Heating and Cooling Equipment:
	Boiler 1: Other (Except Gas-Fired Steam): 82.4 AFUE or higher
	Make and Model Number:
	Air Leakage:
П	Joints, penetrations, and all other such openings in the building envelope that are sources of air leakage are sealed.
ñ	Recessed lights are 1) Type IC rated, or 2) installed inside an appropriate air-tight assembly with a 0.5" clearance from
-	combustible materials. If non-IC rated, fixtures are installed with a 3" clearance from insulation.
	Skylights:
	Minimum insulation requirement for skylight shafts equal to or greater than 12 inches is R-19.
	Vapor Retarder:
	- Installed on the warm-in-winter side of all non-vented framed ceilings, walls, and floors.
	Materials Identification:
	Materials and equipment are installed in accordance with the manufacturer's installation instructions.

- Materials and equipment are identified so that compliance can be determined.
- Manufacturer manuals for all installed heating and cooling equipment and service water heating equipment have been provided.
- Insulation R-values, glazing U-factors, and heating equipment efficiency are clearly marked on the building plans or specifications.
- Insulation is installed according to manufacturer's instructions, in substantial contact with the surface being insulated, and in a manner that achieves the rated R-value without compressing the insulation.

Duct Insulation:

Supply ducts in unconditioned attics or outside the building are insulated to R-8.

- Return ducts in unconditioned attics or outside the building are insulated to R-4.
- Supply ducts in unconditioned spaces are insulated to R-8.
- Return ducts in unconditioned spaces (except basements) are insulated to R-2. Insulation is not required on return ducts in basements.
- Where exterior walls are used as plenums, the wall is insulated to R-8.

Duct Construction:

- Duct connections to flanges of air distribution system equipment are sealed and mechanically fastened.
- All joints, seams, and connections are securely fastened with welds, gaskets, mastics (adhesives), mastic-plus-embedded-fabric, or tapes. Tapes and mastics are rated UL 181A or UL 181B. Exceptions:

Continuously welded and locking-type longitudinal joints and seams on ducts operating at less than 2 in. w.g. (500 Pa).

The HVAC system provides a means for balancing air and water systems.

Temperature Controls:

Thermostats exist for each dwelling unit (non-dwelling areas must have one thermostat for each system or zone). A manual or automatic means to partially restrict or shut off the heating and/or cooling input to each room is provided.

Electric Systems:

Separate electric meters exist for each dwelling unit.

Service Water Heating:

- Water heaters with vertical pipe risers have a heat trap on both the inlet and outlet unless the water heater has an integral heat trap or is part of a circulating system.
- $\hfill\square$ Circulating hot water pipes are insulated to the levels in Table 1.

Circulating Hot Water Systems:

Circulating hot water pipes are insulated to the levels in Table 1.

Swimming Pools:

All heated swimming pools have an on/off heater switch and a cover unless over 20% of the heating energy is from non-depletable sources. Pool pumps have a time clock.

Heating and Cooling Piping Insulation:

HVAC piping conveying fluids above 105 degrees F or chilled fluids below 55 degrees F are insulated to the levels in Table 2.

Table 1: Minimum Insulation Thickness for Circulating Hot Water Pipes

	Ins	ulation Thickness	in Inches by Pipe S	izes	
Heated Water Temperature (°F) 170-180 140-169 100-139	Non-Circula	ting Runouts	Circulating Mains and Runout		
Heated Water – Temperature (°F)	Up to 1"	Up to 1.25"	1.5" to 2.0"	Over 2"	
170-180	0.5	1.0	1.5	2.0	
140-169	0.5	0.5	1.0	1.5	
100-139	0.5	0.5	0.5	1.0	

Table 2: Minimum Insulation Thickness for HVAC Pipes

	Et del Terrer	Insulation Thickness in Inches by Pipe Sizes					
Piping System Types	Range(°F)	2" Runouts	1" and Less	1.25" to 2.0"	2.5" to 4"		
Heating Systems							
Low Pressure/Temperature	201-250	1.0	1.5	1.5	2.0		
Low Temperature	106-200	0.5	1.0	1.0	1.5		
Steam Condensate (for feed water)	Any	1.0	1.0	1.5	2.0		
Cooling Systems							
Chilled Water, Refrigerant and	40-55	0.5	0.5	0.75	1.0		
Brine	Below 40	1.0	1.0	1.5	1.5		

NOTES TO FIELD: (Building Department Use Only)

