

# City of Cambridge

## PURCHASING DEPARTMENT

795 Massachusetts Ave. • Cambridge, Massachusetts 02139-3219

Amy L. Witts  
Purchasing Agent

**TO:** All Bidders

**FROM:** City of Cambridge

**DATE:** April 11, 2016

**RE:** File No. 7202 –Kennedy Longfellow Roof Replacement - Addendum No. 1

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This addendum is comprised of:

1. Questions and Answers
2. Sign-in sheet from pre-bid meeting
3. Existing condition report and hazmat report

The following questions were asked and answered:

**Question:** Will another opportunity be afforded to visit the site prior to the bid date?

**Answer:** Another pre-bid meeting will be held on Tuesday April 12 at 9:00AM. Meeting place is lobby of the Kennedy Longfellow School.

**Question:** Specific information regarding the existing roof assemblies are not included in the contract documents. In order to determine removal and disposal costs for the existing roof systems we need to know the composition, thickness and attachment methods of the existing roof assemblies.

**Answer:** Please see attached existing condition report and hazmat report.

All other details remain the same.

A handwritten signature in cursive script, reading "Amy L. Witts", written over a horizontal line.

Amy L. Witts  
Purchasing Agent

Addendum No. 1

Kennedy Longfellow School

158 Spring Street

Cambridge, MA

Roof Replacement Project

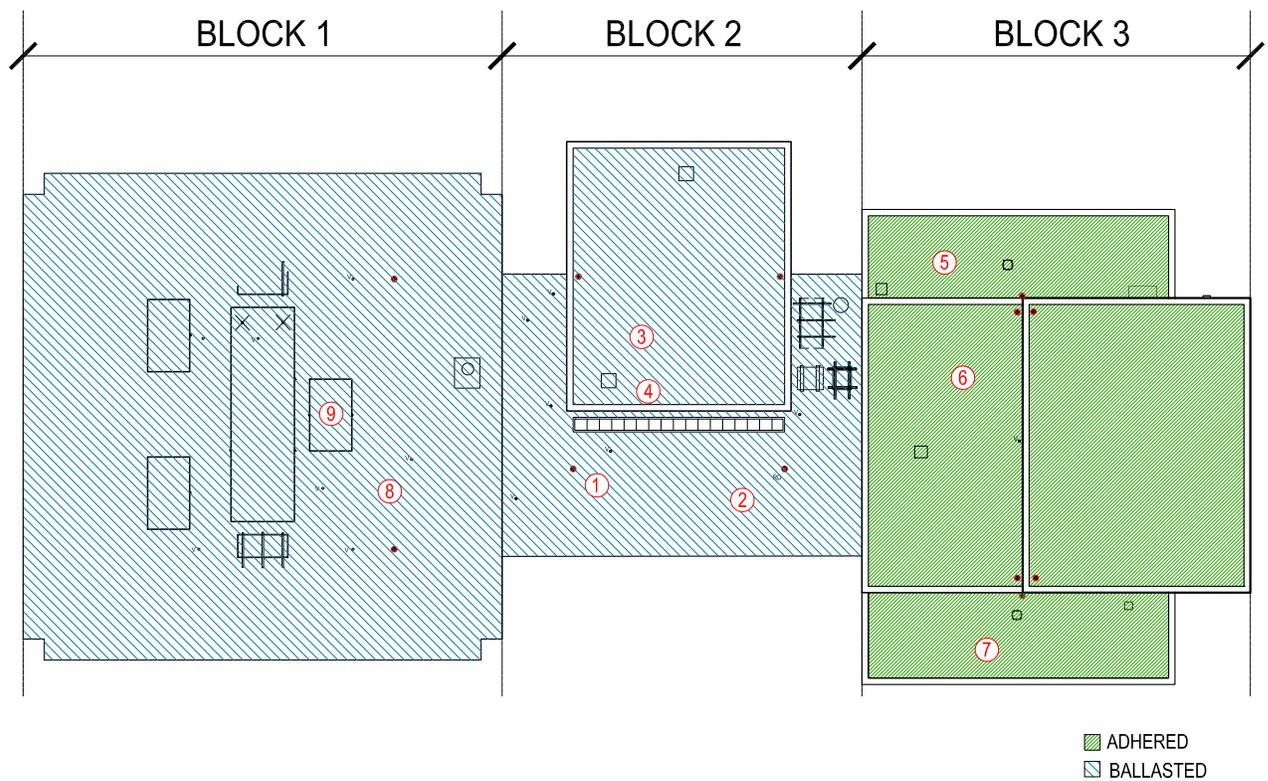
Pre-Bid Site Visit

4-6-16

	Print name	Company	Email Address/Contact Info
1.	<u>FRANK GEARY</u>	<u>CPSP</u>	<u>FGeary@CPSP.us</u>
2.	<u>Mike Morrison</u>	<u>Skanska</u>	<u>mike.morrison@skanska.com</u>
3.	<u>Mike Frank</u>	<u>JF Shea</u>	<u>mfrank@johnfshea.com</u>
4.	<u>Ed Mallin</u>	<u>"</u>	<u>"</u>
5.	<u>Rob Cleary</u>	<u>Skanska</u>	<u>robert.cleary@skanska.com</u>
6.	<u>Joe Egan</u>	<u>BEACON</u>	<u>JELEVELAND@BEACON</u> <u>CONSTRUCTION</u>
7.	<u>Rob Gibson</u>	<u>Gibson Boots Inc</u>	<u>Gio@gibsonboots.com</u>
8.	<u>Timothy Jada</u>	<u>TITAN RFC</u>	<u></u>
9.	<u>John D'Elia</u>	<u>Greenwood</u>	<u>jdelia@greenwood-</u> <u>industries.com</u>
10.	<u>Randall Luther</u>	<u>Tai Soe Kim Partners</u>	<u>rluther@tskp.com</u>

General Roofing conditions.

The roofing at the Kennedy Longfellow school is a combination of tar & gravel roofing and EPDM. Block 1 is The existing roof system on block 1 and 2 dates back to 1970, The existing roofing on block 3 dates back to 1984 and are both beyond their antipated life. Block 1 and 2 roofing is clearly failing as it is brittle with cracking occuring through out the area and has been patched throughout the surface. It appears to be the original roof. with the flashing dried out. Block 3 roof has flashing that are dried out and are brittle. The membrane shows signs of joint failure and excessive shrinking.



ROOF TEST CUT LOCATIONS

9 Test Cuts were performed to examine the roofing build up which revealed varied roofing assemblies through out the area. Roof 1 and 2 are gravel ballasted with a 4 ply asphalt roofing membrane, 1/2" hard board on top of 2" fiberboard insulation, with some areas patched with a ballasted EPDM membrane system, Roofs 4,5,6,7 is mechanically fastened EPDM, 1/2" fiberboard, 3" Iso insulation. Roof 8,9,10,11,12 is stone ballasted EPDM membrane, 1/2" fiberboard on 3 1/2" rigid insulation. 8 of the 9 test cuts revealed wet insulation below the membrane.



## PHOTO 1

Test cut #1

Ballasted roof, membrane with 1/2" hard board on top of 2" fiber board on top 1/2" of tar and gravel. Insulation wet



## PHOTO 2

Test cut #2

Ballasted roof, membrane with 1/2" hard board on top of 2" fiber board on top 1/2" of tar and gravel. Insulation wet



## PHOTO 3

Test cut #3

Ballasted roof, membrane with 1/2" hard board on top of 2" fiber board on top 1/2" of tar and gravel. Insulation wet



## PHOTO 4

Test cut #4

Ballasted roof, membrane with 1/2" hard board on top of 2" fiber board on top 1/2" of tar and gravel. Insulation wet



## PHOTO 5

Test cut #5

Fully adhered roof, membrane with 1/2" fiberboard on top of 3-1/2" ISO adhered with tar. Insulation wet



## PHOTO 6

Test cut #6

Fully adhered roof, membrane with 1/2" fiberboard on top of 3-1/2" ISO adhered with tar. Insulation wet



## PHOTO 7

Test cut #7

Fully adhered roof, membrane with 1/2" fiberboard on top of 3-1/2" ISO adhered with tar. Insulation dry



## PHOTO 8

Test cut #8

Ballasted roof, membrane with 1/2" fiberboard on top of 3-1/2" ISO adhered with tar. Insulation wet



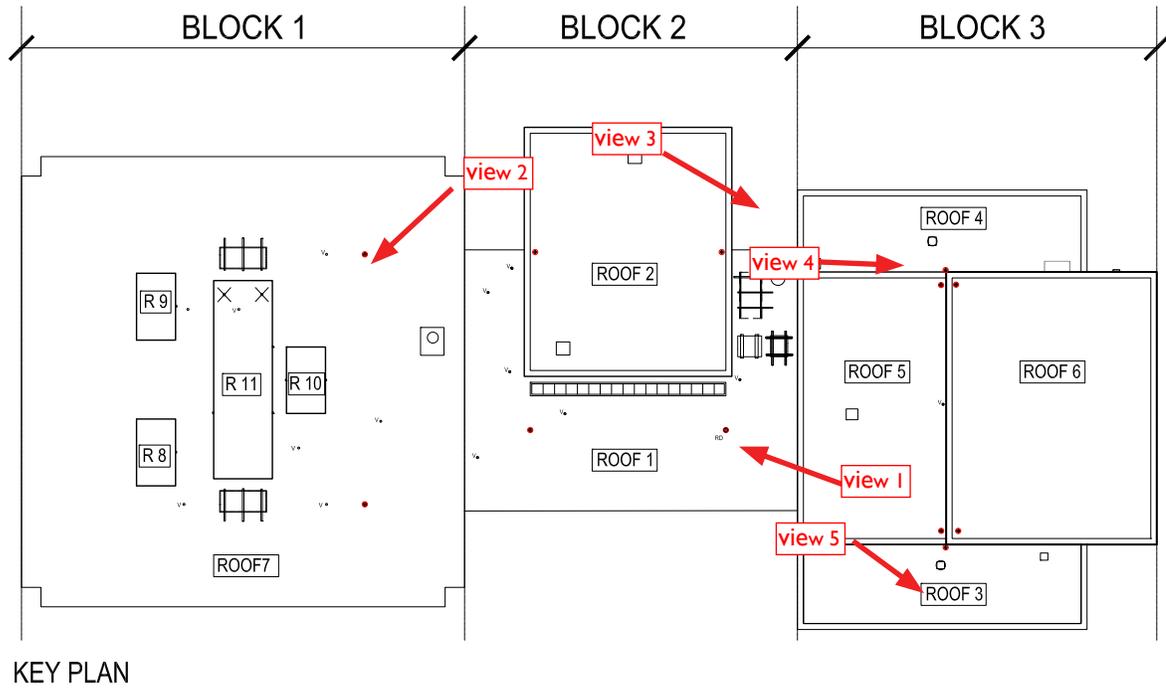
## PHOTO 9

Test cut #9

Ballasted roof, membrane with 1/2" fiberboard on top of 3-1/2" ISO adhered with tar. Insulation wet

### Existing Building Conditions

The Kennedy Longfellow school is located at 158 Spring Street, Cambridge, MA 02379 and was originally built from 1969-1971 with no additions. The exterior walls are masonry and the interior walls are a combination of CMU and drywall. The roof area is approximately 55,000 SF. The exterior windows were replaced in 1987 and the boilers were replaced in 2002.



The Site of the Kennedy Longfellow School building is relatively flat and within the context of a residential neighborhood. The site encompasses almost the entire block and includes the school building, a small playground, the staff parking lot, and a city own baseball field, the John A Ahern Field.

The school is organized in three main blocks with varied roof elevations. Block 1 houses 40 classrooms and lab spaces over three floors, Block 2 houses the auditorium, administration/faculty offices, and is the main entrance for the school. Block 3 houses the cafeteria, gym, lockers, boiler room and larger gathering spaces for art and music. Block 2 and 3 are separated via an expansion joint. Within each block, the roof elevations varies with the following elevations per roof with differing edge conditions.

- Roof 1 - top of structural deck is 45'-10" (gravel stop edge)
- Roof 2 - top of parapet 49'-6"
- Roof 3 - top of parapet 49'-6"
- Roof 4 - top of parapet 49'-6"
- Roof 5 - top of parapet 53'-11"
- Roof 6 - top of parapet 66'-11"
- Roof 7 - top of structural deck is 57'-10" (gravel stop edge)
- Roof 8 - top of structural deck is 65'-6" (gravel stop edge)
- Roof 9 - top of structural deck is 65'-6" (gravel stop edge)
- Roof 10 - top of structural deck is 65'-6" (gravel stop edge)
- Roof 11 - top of structural deck is 70'-7"

## APPENDIX I

### BULK SAMPLE RESULTS OF POLARIZED LIGHT MICROSCOPY ANALYSIS AND AIL ANALYTICAL RESULTS KENNEDY LONGFELLOW SCHOOL ROOF CAMBRIDGE, MASSACHUSETTS

Sample ID	Material	Sampling Locations	Analytical Results
01 A, B	Skylight Caulking	Roof 1	None Detected
02 A, B	Black Roof Sealant	Roof 1, 2	None Detected
03 A, B	Black Penetration Sealant	Roof 1	None Detected
04 A, B	Black Roof Tar	Roof 1	None Detected
<b>05 A, B</b>	<b>Roof Paper</b>	<b>Roof 1, 2</b>	<b>35% Chrysotile</b>
06 A, B	Perlite Insulation	Roof 1, 2	None Detected
07 A, B	Patch Material	Roof 1	None Detected
08 A, B	Deck Sealant	Roof 1, 2	None Detected
09 A, B	Fiberboard Patch	Roof 1	None Detected
10 A, B	Black Paper on Fiberboard Roof Patch	Roof 1	None Detected
11 A, B	Dark Gray Flashing Caulk (Bottom Layer)	Roof 2	None Detected
12 A, B	Light Gray Flashing Caulk (Top Layer)	Roof 2	None Detected
13 A, B	Gray Flashing Caulk (Bottom Layer)	Roof 1, 2	None Detected
14 A, B	Tan Flashing Caulk (Top Layer)	Roof 1, 2	None Detected
15 A, B	Flashing Mastic	Roof 2	None Detected
<b>16 A, B</b>	<b>Flashing Paper</b>	<b>Roof 2</b>	<b>50% Chrysotile</b>
17 A, B	Fiberboard Flashing	Roof 2	None Detected
18 A, B	Drip Edge Caulk on Brick (Patch)	Roof 1, 5	None Detected
19 A, B	Gray Drip Edge Caulk on Brick	Roof 1, 5	None Detected
20 A, B	Black Roof Sealant	Roof 3, 4	None Detected
21 A, B	Dark Brown Caulk on Brick/Concrete	Roof 3, 4	None Detected
22 A, B	Paper on ISO insulation	Roof 3, 4	None Detected

<b>Sample ID</b>	<b>Material</b>	<b>Sampling Locations</b>	<b>Analytical Results</b>
26 A, B	Expansion Joint Caulk	Roof 3, 4	None Detected
27 A, B	Deck Mastic	Roof 3, 4	None Detected
28 A, B	Gray Caulk on Brick/Concrete	Roof 3, 4	None Detected
29 A, B	Deck Mastic	Roof 7	None Detected
30 A, B	Flashing Caulk	Roof 7	None Detected
31 A, B	Paper on ISO Insulation	Roof 7	None Detected
32 A, B	Fiberboard	Roof 7	None Detected
33 A, B	Black Penetration Sealant	Roof 7	None Detected
34 A, B	Black Roof Sealant	Roof 7	None Detected



## Asbestos Identification Laboratory

165 New Boston St., Ste 271

Woburn, MA 01801

781-932-9600

Web: [www.asbestosidentificationlab.com](http://www.asbestosidentificationlab.com)

Email: [mikemanning@asbestosidentificationlab.com](mailto:mikemanning@asbestosidentificationlab.com)

Batch:

9776



November 16, 2015

Scott Drinko  
Cardno ATC, Woburn  
600 West Cummings Park  
Suite 5500  
Woburn, MA 01801

**Project Number:**

**Project Name:** 600000664 Kennedy

**Date Sampled:** 2015-11-06

**Work Received:** 2015-11-12

**Analysis Method:** BULK PLM ANALYSIS EPA/600/R-93/116

Dear Scott Drinko,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations Department of Health Certification: AAL-121

Thank you Scott Drinko for your business.

Michael Manning  
Owner/Director

Scott Drinko  
 Cardno ATC, Woburn  
 600 West Cummings Park  
 Suite 5500  
 Woburn, MA 01801

**Project Number:**

Project Name: 600000664 Kennedy

Date Sampled: 2015-11-06

Work Received: 2015-11-12

**Analysis Method:** BULK PLM ANALYSIS EPA/600/R-93/116

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
01A	Skylight Caulk	Roof 1	gray	Non-Fibrous 100	None Detected
105327					
01B	Skylight Caulk	Roof 1	gray	Non-Fibrous 100	None Detected
105328					
02A	Black Roof Sealant	Roof 1	black	Cellulose 20 Non-Fibrous 80	None Detected
105329					
02B	Black Roof Sealant	Roof 2	black	Cellulose 20 Non-Fibrous 80	None Detected
105330					
03A	Penetration Sealant	Roof 1	black	Non-Fibrous 100	None Detected
105331					
03B	Penetration Sealant	Roof 1	black	Non-Fibrous 100	None Detected
105332					
04A	Roof Tar	Roof 1	black	Non-Fibrous 100	None Detected
105333					
04B	Roof Tar	Roof 1	black	Non-Fibrous 100	None Detected
105334					
05A	Paper	Roof 1	black	Cellulose 35 Non-Fibrous 30	Detected Chrysotile 35
105335					
05B	Paper	Roof 2	null		Not Analyzed
105336					
06A	Perlite Insul	Roof 1	brown	Cellulose 35 Non-Fibrous 65	None Detected
105337					
06B	Perlite Insul	Roof 2	brown	Cellulose 35 Non-Fibrous 65	None Detected
105338					
07A	Patch Material	Roof 1	black	Cellulose 20 Non-Fibrous 80	None Detected
105339					
07B	Patch Material	Roof 1	black	Cellulose 20 Non-Fibrous 80	None Detected

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
08A	Deck Sealant	Roof 1	black	Cellulose Non-Fibrous	5 None Detected 95
105341					
08B	Deck Sealant	Roof 2	black	Cellulose Non-Fibrous	5 None Detected 95
105342					
09A	Fiberboard Patch	Roof 1	brown	Cellulose	100 None Detected
105343					
09B	Fiberboard Patch	Roof 1	brown	Cellulose	100 None Detected
105344					
10A	Black Paper on Fiberboard Patch	Roof 1	black	Cellulose Non-Fibrous	60 None Detected 40
105345					
10B	Black Paper on Fiberboard Patch	Roof 1	black	Cellulose Non-Fibrous	60 None Detected 40
105346					
11A	Dark Gray Flash Caulk	Roof 2 Bottom Layer	gray	Fiberglass Non-Fibrous	2 None Detected 98
105347					
11B	Dark Gray Flash Caulk	Roof 2 Bottom Layer	gray	Fiberglass Non-Fibrous	2 None Detected 98
105348					
12A	Light Gray Flash Caulk	Roof 2 Top Layer	gray	Non-Fibrous	100 None Detected
105349					
12B	Light Gray Flash Caulk	Roof 2 Top Layer	gray	Non-Fibrous	100 None Detected
105350					
13A	Gray Flash Caulk	Roof 1 (Bottom Layer)	gray	Fiberglass Non-Fibrous	< 1 None Detected 100
105351					
13B	Gray Flash Caulk	Roof 2 (Bottom Layer)	gray	Fiberglass Non-Fibrous	< 1 None Detected 100
105352					
14A	Tan Flash Caulk	Roof 1 (Top Layer)	tan	Non-Fibrous	100 None Detected
105353					
14B	Tan Flash Caulk	Roof 2 (Top Layer)	tan	Non-Fibrous	100 None Detected
105354					

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
17A	Fiberboard Flashing	Roof 2	black	Cellulose Non-Fibrous	20 None Detected 80
105359					
17B	Fiberboard Flashing	Roof 2	black	Cellulose Non-Fibrous	20 None Detected 80
105360					
18A	Drip Edge Caulk on Brick (Patch)	Roof 1	gray	Non-Fibrous	100 None Detected
105361					
18B	Drip Edge Caulk on Brick (Patch)	Roof 5	gray	Non-Fibrous	100 None Detected
105362					
19A	Gray Drip Edge Caulk on Brick	Roof 1	gray	Fiberglass Non-Fibrous	< 1 None Detected 100
105363					
19B	Gray Drip Edge Caulk on Brick	Roof 5	gray	Fiberglass Non-Fibrous	< 1 None Detected 100
105364					
20A	Black Roof Sealant	Roof 3	black	Non-Fibrous	100 None Detected
105365					
20B	Black Roof Sealant	Roof 4	black	Non-Fibrous	100 None Detected
105366					
21A	Dark Brown on Brick/Concrete	Roof 3	black	Non-Fibrous	100 None Detected
105367					
21B	Dark Brown on Brick/Concrete	Roof 4	black	Non-Fibrous	100 None Detected
105368					
22A	Paper on ISO Insulation	Roof 3	black	Fiberglass Cellulose Non-Fibrous	10 None Detected 65 25
105369					
22B	Paper on ISO Insulation	Roof 4	black	Fiberglass Cellulose Non-Fibrous	10 None Detected 60 30
105370					
23A	Roof Mastic	Roof 3	black	Non-Fibrous	100 None Detected
105371					
23B	Roof Mastic	Roof 4	black	Non-Fibrous	100 None Detected
105372					
24A	NO SAMPLE	NO SAMPLE	null		Not Analyzed
105373					
24B	NO SAMPLE	NO SAMPLE	null		Not Analyzed
105374					
25A	Light Brown Brick/Conc Caulk	Roof 3	gray	Non-Fibrous	100 None Detected
105375					
25B	Light Brown Brick/Conc Caulk	Roof 4	gray	Non-Fibrous	100 None Detected
105376					

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
26A	Expansion Joint Caulk	Roof 3	gray	Non-Fibrous 100	None Detected
105377					
26B	Expansion Joint Caulk	Roof 4	gray	Non-Fibrous 100	None Detected
105378					
27A	Deck Mastic	Roof 3	black	Cellulose 5 Non-Fibrous 95	None Detected
105379					
27B	Deck Mastic	Roof 4	black	Cellulose 5 Non-Fibrous 95	None Detected
105380					
28A	Gray Brick/Conc Caulk	Roof 3	gray	Non-Fibrous 100	None Detected
105381					
28B	Gray Brick/Conc Caulk	Roof 4	gray	Non-Fibrous 100	None Detected
105382					
29A	Deck Mastic	Roof 7	black	Non-Fibrous 100	None Detected
105383					
29B	Deck Mastic	Roof 7	black	Non-Fibrous 100	None Detected
105384					
30A	Flashing Caulking	Roof 7	black	Non-Fibrous 100	None Detected
105385					
30B	Flashing Caulking	Roof 7	black	Non-Fibrous 100	None Detected
105386					
31A	Paper on ISO Insulation	Roof 7	black	Fiberglass 5 Cellulose 10 Non-Fibrous 85	None Detected
105387					
31B	Paper on ISO Insulation	Roof 7	black	Fiberglass 5 Cellulose 10 Non-Fibrous 85	None Detected
105388					
32A	Fiberboard	Roof 7	brown	Cellulose 100	None Detected
105389					
32B	Fiberboard	Roof 7	brown	Cellulose 100	None Detected
105390					
33A	Penetration Sealant	Roof 7	black	Non-Fibrous 100	None Detected
105391					
33B	Penetration Sealant	Roof 7	black	Non-Fibrous 100	None Detected
105392					
34A	Black Roof Sealant	Roof 7	black	Non-Fibrous 100	None Detected
105393					
34B	Black Roof Sealant	Roof 7	black	Non-Fibrous 100	None Detected
105394					