

MICRO ANALYTICAL LABORATORIES, INC.
BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)



1102
 Bob Kuykendall
 The Denali Group
 2255 Morello Avenue, Suite 208
 Pleasant Hill, CA 94523

PROJECT:
**ROOF REPLACEMENT
 COLLEGE OF SAN MATEO
 SAN MATEO, CA**

Micro Log In **179337**
 Total Samples 7
 Date Sampled 02/20/2013
 Date Received 02/20/2013
 Date Analyzed 02/20/2013

ASBESTOS INFORMATION

SAMPLE IDENTIFICATION

QUANTITY (AREA %) / TYPES / LAYERS / DISTINCT SAMPLES

DOMINANT
OTHER MATERIALS

Client #: DG-1 Micro #: 179337-01 Analyst: GR B12 ROOF VENT PIPE BASE SEALANT EAST OF MECH. SCREEN	SEALANT / PAINT: NONE DETECTED	10% CELLULOSE Matrix TAR Type:
Client #: DG-2 Micro #: 179337-02 Analyst: GR B12 ROOF - MECH SCREEN BASE CAULK - WHITE / BROWN	CAULKING (WHITE): NONE DETECTED ROOFING MASTIC (BLACK): 5% CHRYSOTILE ASBESTOS	10% CELLULOSE Matrix TAR/ASPHALT, BINDER Type:
Client #: DG-3 Micro #: 179337-03 Analyst: GR B12 - ROOF MECH SCREEN CURL - CAULK - BLACK	CAULKING (GRAY / BLACK): NONE DETECTED FIBERGLASS FELT: NONE DETECTED	5% CELLULOSE 10% FIBROUS GLASS Matrix TAR/ASPHALT, BINDER Type:
Client #: DG-4 Micro #: 179337-04 Analyst: GR B2-4 COLONNADES SOUTH END SURFACE MATERIAL TAN TOP GREENISH - BLACK UNDER	CAULKING (TAN / GREEN) / COATING (BLACK): 3% CHRYSOTILE ASBESTOS	3% CELLULOSE 5% FIBROUS GLASS Matrix BINDER, OTHER, MISCELLANEOUS. Type:
Client #: DG-5 Micro #: 179337-05 Analyst: GR B2-4 COLONNADES - CENTER SURFACE MATERIAL TAN TOP - BLACK UNDER	CAULKING (TAN / GREEN) / COATING (BLACK): 3% CHRYSOTILE ASBESTOS	3% CELLULOSE 5% FIBROUS GLASS Matrix BINDER, OTHER, MISCELLANEOUS. Type:

Technical Supervisor:

Gamini Ranatunga, Ph.D.

2/21/2013

Date Reported

Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101 (Rev. 1/4/2013). Basic techniques follow the EPA Interim Method for Bulk Insulation Samples (1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 µm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM). Tremolite-asbestos or actinolite-asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials are indicated. Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. Layers are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in all layers of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Samples that were reanalyzed are denoted by two sets of analyst initials. AIHA Accredited Laboratory ID No. 101768. NVLAP Lab Code 101872-0. CA ELAP Certification #1037. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed.

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ASBESTOS INFORMATION

SAMPLE IDENTIFICATION

QUANTITY (AREA %) / TYPES / LAYERS / DISTINCT SAMPLES

**DOMINANT
 OTHER MATERIALS**

Client #: DG-6	Micro #: 179337-06 Analyst: GR GR B2-4 COLONNADES - NORTH END SURFACE MATERIAL WHITE TOP - BLACK UNDER	TOP COATING (WHITE): NONE DETECTED CAULKING (BLACK): NONE DETECTED	5 % FIBROUS GLASS Matrix: SYNTHETIC MATERIAL Type: TAR
Client #: DG-7	Micro #: 179337-07 Analyst: GR B2-4 - COLONNADES CAULK GRAY NORTH END	NONE DETECTED	Matrix: SYNTHETIC MATERIAL, Type: CARBONATE.

Technical Supervisor:


 For: Gamini Ranatunga, Ph.D.

2/21/2013

Date Reported

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Client ID #

p ___ of ___

MICRO ANALYTICAL LABORATORIES, INC.

Log in #

119337

Name / Client / Address:

5900 Hollis St., Suite M, Emeryville, CA 94608

(510) 653-0824 - FAX (510) 653-1361 - www.labmicro.com

Chain of Custody 3/17/2012

Bob Kuykendall
Denali Inc
2255 Morello Ave Suite 208
Pleasant Hill, CA 94523

Project
Roof Replacement
College of San Mateo
San Mateo, CA

Asbestos

(TEM) AHERA Yamate II NIOSH 7402 CARB

Asbestos

PLM PCM

Lead / Metals

Total (TTL) STLC TCLP

(Specify)

Tel. 925-602-2333

Mold (Nonculturable) Air (Spore Trap) Tape Lift Bulk

Fax

Job No.

Mold (Culturable) Air (Andersen) Swab Bulk

E-mail denaligp@ix.netcom.com

Number of Samples **Turn-Around Time**

7 24 hr

Coliform Presence / Absence Multiple Tube Ferm.

Coliform Sample Temperature (°C)

Other

(Specify)

Matrix Type Air Bulk Paint Soil Wipe Swab Tape Lift Water Culture Medium / Correction Factor

Temp. °C, or

Micro ID #

(For Lab Use Only)

Client Sample ID#

Description

Date Sampled

Time Sampled Start / Stop / Total Minutes

Average LPM

Total Liters

Wipe / Swab Sample Area

Micro ID # (For Lab Use Only)	Client Sample ID#	Description	Date Sampled	Time Sampled Start / Stop / Total Minutes	Average LPM	Total Liters	Wipe / Swab Sample Area
119337-1	DG-1	B12 roof vent pipe base sealant - east of mech. screen	2/20	:	:		
2	DG-2	B12 roof mech screen base caulk - white/brown	2/20	:	:		
3	DG-3	B12 - roof mech screen curb - caulk - black	2/20	:	:		
4	DG-4	B2-4 colonnades south end surface material tan top, greenish - black under	2/20	:	:		
5	DG-5	B2-4 colonnades - center surface material - tan top black under	2/20	:	:		
6	DG-6	B-2-4 colonnades north end surface material - white top, black under	2/20	:	:		
7	DG-7	B-2-4 colonnades caulk grey north end	2/20	:	:		
				:	:		
				:	:		
				:	:		

Instructions / Comments:

Fax

E-mail To:

denaligp@ix.netcom.com

Sample Return: YES NO If "YES" is checked, samples will be returned to the client or archived at Micro Analytical if required. If "NO" is checked, solid samples may be disposed of within three months (one week for liquid samples, lab suspensions, and digestates).

Sampler's Signature / Name

Note to Lab: If any samples are not acceptable, record reasons for rejection.

Bob Kuykendall

2-20-13-1105
Drop Box / Courier

Kwo Saeker 2/20/13 1100A

Relinquished By

Date / Time

Received By

Date / Time

Relinquished By

Date / Time

Received By

Date / Time