Lab: New York **LabRptNo:** 20220580 (b) (7)(E)

ID: N325438
FP&F#:
6051#:
Evidence Bag:
HSI#:
Event#:
Entry Mailer:
Contact Name: (b)(6), (b)(7)(C) **Report Date:** 6/9/2022
Rush: No
Sample Description: Artificial stone surface
Sample Components: 40% quartz 47% dolomite sand, 13% resin
Info Requested: Please Provide a breakdown by weight of all components. please see 6479 for further request.
Suppl. Info:
Supp2. Info:

Lab Data

Received: 5/16/2022 **Status:** PUB **Analysis Time:** 40 **Lab HTSUS:**
Return Mailer:
Return Date:
Memo#:
Marks: (b)(7)(E)
Lab Comments:

Sample Documents

(b) (7)(E) (b)(6), (b) 6/7/2022 10:12:53 AM
(b) (7)(E) (b)(6), (b) 6/8/2022 5:02:29 PM

Communications

Review (b)(6) 6/8/2022

ATS Transfers

Transfer To	Transfer Date	Accept Date	Status	Info Request
No Transfers				

Assignments

Type	Assignment	Date	By	Status
Branch Chief	(b)(6), (b)(7)(C)	5/19/2022 11:31:29 AM	(b)(6)	In-Active
Analyst	(b)(6), (b)(7)(C)	5/26/2022 6:56:46 AM	(b)(6),	Active
Technical Reviewer	(b)(6), (b)(7)(C)	6/7/2022 10:17:06 AM	(b)(6)	Active
Branch Chief	(b)(6), (b)(7)(C)	6/9/2022 8:35:25 AM	(b)(6)	Active

Storage/Storage History

SampleHistoryID	Assignment	Date	By
1	LOG	5/19/2022 11:31:00 AM	(b)(6), (b)(7)(C)
2	TAS	5/19/2022 11:31:29 AM	(b)(6), (b)(7)(C)
3	AAS	5/26/2022 6:56:46 AM	(b)(6), (b)(7)(C)
4	TST	6/7/2022 10:11:10 AM	(b)(6), (b)(7)(C)
5	TRV	6/7/2022 10:17:06 AM	(b)(6), (b)(7)(C)
6	TAS	6/9/2022 8:35:25 AM	(b)(6), (b)(7)(C)
7	AAS	6/9/2022 10:31:04 AM	(b)(6), (b)(7)(C)
8	TST	6/9/2022 10:31:07 AM	(b)(6), (b)(7)(C)
9	RVW	6/9/2022 10:31:10 AM	(b)(6), (b)(7)(C)
10	ARV	6/9/2022 10:32:19 AM	(b)(6), (b)(7)(C)
11	PUB	6/10/2022 10:00:19 AM	LIN
12	TBD	4/30/2024 1:41:54 AM	LIN

Storage Notes:

Narrative

THE SUBMISSION IS AN ARTIFICIAL STONE SLAB THAT IS WHITE AND VARIOUS SHADES OF GRAY IN COLOR. THE SLAB HAS TWO DARKER GRAY BANDS ACROSS THE MIDDLE OF THE SLAB. THE TOP OF THE SLAB APPEARS TO BE POLISHED, AND THE SIDES ARE SIMPLY CUT OR SAWN. SMALL SHINY INCLUSIONS ARE VISIBLE ON THE SURFACE OF THE SLAB.

THE SUBMISSION HAD A LENGTH OF 269 mm, A WIDTH OF 270 mm, AND AN AVERAGE THICKNESS OF 16.1 mm. THE SAMPLE HAD AN INORGANIC CONTENT OF 85.80% AND AN ORGANIC RESIN CONTENT OF 14.20%. XRF ANALYSIS INDICATES THE PRESENCE OF PRIMARILY SILICON, CALCIUM, AND MAGNESIUM. XRD ANALYSIS INDICATES THE SAMPLE CONTAINS SILICA (MINERAL NAME QUARTZ), CALCIUM MAGNESIUM CARBONATE (MINERAL NAME DOLOMITE), AND CALCIUM CARBONATE (MINERAL NAME CALCITE). ANALYSIS INDICATES THAT DOLOMITE IS THE RELATIVE MAJORITY COMPONENT BY WEIGHT, THEN QUARTZ, THEN POLYMER RESIN, AND LASTLY CALCITE. ADDITIONALLY, ALL COMPONENTS APPEAR TO BE UNIFORMLY AGGLOMERATED THROUGHOUT THE BODY OF THE SURFACE.

METHODS: CBPL 25-01 (Date Performed: 05/24/2022); ASTM E1621 (Date Performed: 05/24/2022); ASTM D2584 (Dates Performed: 05/24/2022, 05/25/2022); ASTM D934, JIS K0131 (Dates Performed: 05/25/2022, 06/06/2022, 06/07/2022)

DEPARTMENT OF HOMELAND SECURITY
U.S. CUSTOMS AND BORDER PROTECTION
LABORATORIES AND SCIENTIFIC SERVICES DIRECTORATE
New York Laboratory, 1100 Raymond Blvd., Newark, NJ 07102
973-368-1900; 973-368-1905 (Fax)

LABORATORY REPORT

Lab Report #: NY20220580 **ID #:** N325438
Submitted by: (b)(6), (b)(7)(C)
Received: 05/16/2022 **Reported:** 06/09/2022
Sample Description: Artificial stone surface
Sample Components: 40% quartz 47% dolomite sand, 13% resin
Information Requested: Please Provide a breakdown by weight of all components. please see 6479 for further request.

Narrative:

THE SUBMISSION IS AN ARTIFICIAL STONE SLAB THAT IS WHITE AND VARIOUS SHADES OF GRAY IN COLOR. THE SLAB HAS TWO DARKER GRAY BANDS ACROSS THE MIDDLE OF THE SLAB. THE TOP OF THE SLAB APPEARS TO BE POLISHED, AND THE SIDES ARE SIMPLY CUT OR SAWN. SMALL SHINY INCLUSIONS ARE VISIBLE ON THE SURFACE OF THE SLAB.

THE SUBMISSION HAD A LENGTH OF 269 mm, A WIDTH OF 270 mm, AND AN AVERAGE THICKNESS OF 16.1 mm. THE SAMPLE HAD AN INORGANIC CONTENT OF 85.80% AND AN ORGANIC RESIN CONTENT OF 14.20%. XRF ANALYSIS INDICATES THE PRESENCE OF PRIMARILY SILICON, CALCIUM, AND MAGNESIUM. XRD ANALYSIS INDICATES THE SAMPLE CONTAINS SILICA (MINERAL NAME QUARTZ), CALCIUM MAGNESIUM CARBONATE (MINERAL NAME DOLOMITE), AND CALCIUM CARBONATE (MINERAL NAME CALCITE). ANALYSIS INDICATES THAT DOLOMITE IS THE RELATIVE MAJORITY COMPONENT BY WEIGHT, THEN QUARTZ, THEN POLYMER RESIN, AND LASTLY CALCITE. ADDITIONALLY, ALL COMPONENTS APPEAR TO BE UNIFORMLY AGGLOMERATED THROUGHOUT THE BODY OF THE SURFACE.

METHODS: CBPL 25-01 (Date Performed: 05/24/2022); ASTM E1621 (Date Performed: 05/24/2022); ASTM D2584 (Dates Performed: 05/24/2022, 05/25/2022); ASTM D934, JIS K0131 (Dates Performed: 05/25/2022, 06/06/2022, 06/07/2022)

Analyst

(b)(6), (b)(7)(C) Ph. D.

Approved By

(b)(6), (b)(7)(C), Ph. D.,
Branch Chief

New York Laboratory Analytical Test Summary Sheet

Laboratory Number: NY20220580 **Name:** [redacted] **Date:** 06/07/2022
Sample Name: N325438

1. **Sample Description:** The submission is an artificial stone slab that is white and various shades of gray in color. The slab has two darker gray bands across the middle of the slab. The top of the slab appears to be polished, and the sides are simply cut or sawn. Small shiny inclusions are visible on the surface of the slab; however, the composition of the inclusions is unknown.
   Attachment #1, Sample Information
   Attachment #2, Photographs

2. **Test Name:** Examination: CBPL 25-01
   Date Performed: 05/24/2022
   Sample Preparation Information: The sample was examined.
   Instrument Used: Baker Digital Caliper Type EC100 (verified by set EMR001)
   Instrument Serial Number: 2433
   Results: The length and width of the submission had to be approximated with a ruler since the dimensions exceeded the capability of the caliper. The submission had a length of 269 mm, a width of 270 mm, and an average thickness of 16.1 mm.
   Attachment #3, Notes

3. **Test Name:** X-ray Fluorescence: ASTM E1621
   Date Performed: 05/24/2022
   Sample Preparation Information: The submission was cut to fit the sample holder and then placed in the oven at 105°C for at least 3 hours to remove any excess moisture from the cutting process. Then the sample was cooled to room temperature and placed into the sample holder for analysis.
   Instrument Used: Oven – Fisher Scientific
   Instrument Used: Thermometer 9329H05
   Instrument Serial Number: 210399315
   Instrument Used: PANalytical Zetium XRF
   Instrument Serial Number: DY3408
   Verification: NIST 1117 (bronze)
   Instrument Conditions: The application run was Omnian 27 mm *and the processing parameters chosen was* Solid Compounds.
   Results: XRF analysis indicates the presence of primarily silicon, calcium, magnesium along with other trace elements. The silicon likely indicates that the sample contains silica (mineral name quartz). The presence of calcium and magnesium suggests that the sample likely contains calcium magnesium carbonate (mineral name dolomite). These values also suggest that the sample could also contain calcium carbonate (mineral name calcite).

To determine the semi-quantitative percent concentrations, the assumption is made that the sample contains solely quartz and dolomite rather than a mixture of quartz, dolomite, and calcite. XRF analysis indicates that the approximate percent concentration of quartz is 56%. To determine the approximate percent concentration of dolomite, the following formula is used:

$$\%\ Dolomite = \left[(\%\ CaO + \%\ MgO) \times \left(\frac{Dolomite\ molecular\ weight}{CaMgO_2\ molecular\ weight}\right)\right]$$

The molecular weight of $CaMgO_2$ is 96 g/mol, and the molecular weight of dolomite ($CaMg(CO_3)_2$) is 184 g/mol. XRF indicates that the approximate concentrations of calcium oxide and magnesium oxide are 28% and 11%, respectively. Thus, the approximate percent concentration of dolomite is 75%. This calculation indicates that dolomite is the greatest component by weight rather than quartz. However, further analysis is required to confirm these indications as the calculations assume the sample contains solely quartz and dolomite rather than a mixture of quartz, dolomite, and calcite.

Conclusion: XRF analysis indicates the presence of primarily silicon, calcium, and magnesium.

Attachment #4, XRF Test Results

4. **Test Name:** Ignition Loss of Cured Reinforced Resins: ASTM D2584

Dates Performed: 05/24/2022, 05/25/2022

Sample Preparation Information: The submission was cut into three samples and placed in the oven at 105°C for at least 3 hours to remove any excess moisture from the cutting process. Three crucibles were prepared by drying them in the muffle furnace between 500-600°C for 10 minutes. Then the crucibles were cooled in a desiccator and weighed. The samples were placed into their own crucible and weighed. The samples were then ignited with a Bunsen burner to ensure that all carbon and non-ash residue was removed. Then the samples were placed in the muffle furnace at 565°C for 6 hours (per Note 6 in ASTM D2584), cooled in a desiccator, and weighed.

Instrument Used: Oven – Fisher Scientific

Instrument Used: Thermometer 9329H05

Instrument Serial Number: 210399315

Instrument Used: Balance – Mettler Toledo XPE250 (verified by weight set 854254.2C, SN: 01-39600-9)

Instrument Serial Number: B737658217

Instrument Used: Muffle Furnace – Carbolite Gero

Instrument Serial Number: 22-101745

Results: The samples charred and burned when subjected to a flame. Upon removal from the muffle furnace, the samples were white in color.

	Trial 1	**Trial 2**	**Trial 3**	
Weight of crucible	37.3470 g	38.4193 g	37.4056 g	**AVERAGE**
Weight of crucible + sample	89.7142 g	86.0472 g	86.1563 g	

Weight of sample	52.3672 g	47.6279 g	48.7507 g	
Weight of crucible + residue	82.2525 g	79.2996 g	79.2449 g	
Weight of residue	44.9055 g	40.8803 g	41.8393 g	
% Inorganic Content (Ash)	85.75 %	85.83 %	85.82 %	85.80 %
% Organic Content (Ignition Loss)	14.25 %	14.17 %	14.18 %	14.20 %

The inorganic content (ash) was calculated by the following formula:

$$Inorganic\ Content\ (Ash) = \frac{Weight\ of\ Residue}{Weight\ of\ Sample} \times 100$$

The organic content was calculated by the following formula:

$$Organic\ Content = 100 - Inorganic\ Content\ (Ash)$$

The sample had an inorganic content (ash) of 85.80% and an organic content of 14.20%. The organic content is attributed to an organic polymer resin which is used as a binder in the sample.

Conclusion: The sample had an inorganic content of 85.80% and an organic polymer resin content of 14.20%.

Attachment #3, Notes

5. **Test Name:** X-ray Diffraction: ASTM D934, JIS K0131

Date Performed: 05/25/2022, 06/06/2022, 06/07/2022

Sample Preparation Information: The samples from the ignition loss method were used for analysis. The sample was ground with a grinding mill for 20 minutes to make the powder fine. This is the general sample that was used to determine the contents. Some of the sample was placed directly onto the sample holder and leveled for analysis.

Based on the composition of the general sample analysis, a verification of 40:50:10 silica-dolomite-calcite was prepared by combining approximately 0.8 g of silica, approximately 1 g of dolomite, and approximately 0.2 g of calcite into a mortar with pestle, ground until uniform in color, placed on the sample holder, and leveled for analysis. The sample was then run in triplicate by adding the sample directly to the sample holder and leveling for analysis.

Note: The deep sample holders (rather than the shallow sample holders) were used to obtain the most reliable results.

Instrument Used: Grinding Mill – Retsch

Instrument Serial Number: C1034642

Instrument Used: Panalytical Empyrean XRD

Instrument Serial Number: 203610

Instrument Used: Balance – Mettler Toledo XPE250 (verified by weight set 854254.2C, SN: 01-39600-9)

Instrument Serial Number: B737658217

Verifications: Aluminum Oxide; 40:50:10 Silica-Dolomite-Calcite

Instrument Conditions: For the aluminum oxide verification and general sample, the program run was General Holder_27 mm. *The position was taken from 5°-90° and run at 45 kV and 40 mA. The peaks were found, and the phases were determined.*
For the 40:50:10 silica-dolomite-calcite verification and remaining samples, the program run was Quantitative_27mm Holder. *The position was taken from 15°-90° and run at 45 kV and 40 mA. The peaks were found, and the phases were determined. Then the Default Rietveld Method was run to determine quantitation.*
Results: After grinding the sample, the powder became a uniform very light gray color. XRD analysis indicates the sample contains silicon oxide (mineral name quartz), calcium magnesium carbonate (mineral name dolomite), and calcium carbonate (mineral name calcite) in the general sample. Therefore, the same database entries (one for silica (entry 01-089-8935), one for dolomite (entry 00-036-0426), and one for calcite (entry 00-066-0867)) were used for the 40:50:10 silica-dolomite-calcite verification and remaining samples when quantifying for consistency. The Rietveld method was used to determine the Rietveld percentages (see the calculations attachment). Since the 40:50:10 silica-dolomite-calcite verification was within ±5% of their values by weight, spiking the samples was not required for analysis. The silica percentage for the sample is corrected to account for the organic material lost from the ashing test.

Trial		1	2	3	
	Silica % by Rietveld	46.27	47.50	46.24	
	Dolomite % by Rietveld	49.01	47.94	49.18	
	Calcite % by Rietveld	4.72	4.55	4.58	
	Other % by Rietveld	0	0.01		
	% Ash (average)	85.80	85.80	85.80	
	% Volatile (average)	14.20	14.20	14.20	**AVERAGE**
Corrected for Ash	**Corrected % Silica**	39.70	40.76	39.67	40.04
	Corrected % Dolomite	42.05	41.13	42.20	41.79
	Corrected % Calcite	4.05	3.90	3.93	3.96
	Corrected % Other	0.00	0.01	0.00	0.00

The sample had an average quartz content of 40.04%, an average dolomite content of 41.79%, and an average calcite content of 3.96%. The importer claims that the sample contains 40% quartz, 47% dolomite sand, and 13% resin. Notably, the dolomite sand, as claimed by the importer, constitutes both the dolomite and calcite content of the

sample, as determined by XRD analysis. Therefore, the combination of dolomite and calcite via XRD analysis amounts to 45.75% on average.

Conclusion: XRD analysis indicates that the sample contains quartz, dolomite, and calcite. Analysis indicates that the dolomite content constitutes the majority of the sample, with an average content of 41.79%. The quartz constitutes the other major component, with an average content of 40.04%. Calcite is a minor component, with an average content of 3.96%.

Attachment #5, XRD Test Results

Attachment #6, Calculations

Overall Conclusion: THE SUBMISSION IS AN ARTIFICIAL STONE SLAB THAT IS WHITE AND VARIOUS SHADES OF GRAY IN COLOR. THE SLAB HAS TWO DARKER GRAY BANDS ACROSS THE MIDDLE OF THE SLAB. THE TOP OF THE SLAB APPEARS TO BE POLISHED, AND THE SIDES ARE SIMPLY CUT OR SAWN. SMALL SHINY INCLUSIONS ARE VISIBLE ON THE SURFACE OF THE SLAB.

THE SUBMISSION HAD A LENGTH OF 269 mm, A WIDTH OF 270 mm, AND AN AVERAGE THICKNESS OF 16.1 mm. THE SAMPLE HAD AN INORGANIC CONTENT OF 85.80% AND AN ORGANIC RESIN CONTENT OF 14.20%. XRF ANALYSIS INDICATES THE PRESENCE OF PRIMARILY SILICON, CALCIUM, AND MAGNESIUM. XRD ANALYSIS INDICATES THE SAMPLE CONTAINS SILICA (MINERAL NAME QUARTZ), CALCIUM MAGNESIUM CARBONATE (MINERAL NAME DOLOMITE), AND CALCIUM CARBONATE (MINERAL NAME CALCITE). ANALYSIS INDICATES THAT DOLOMITE IS THE RELATIVE MAJORITY COMPONENT BY WEIGHT, THEN QUARTZ, THEN POLYMER RESIN, AND LASTLY CALCITE. ADDITIONALLY, ALL COMPONENTS APPEAR TO BE UNIFORMLY AGGLOMERATED THROUGHOUT THE BODY OF THE SURFACE.

METHODS: CBPL 25-01 (Date Performed: 05/24/2022); ASTM E1621 (Date Performed: 05/24/2022); ASTM D2584 (Dates Performed: 05/24/2022, 05/25/2022); ASTM D934, JIS K0131 (Dates Performed: 05/25/2022, 06/06/2022, 06/07/2022)

(b) (7)(E)

(b) (7)(E)

Lab #:	NY20220580	**ID#:**	N325438		
		6051#:		**FP&F#:**	
		Event#:		**HSI#:**	
		Evidence Bag#:		**Mailer#:**	
Contact Name:	(b)(6), (b)(7)(C)				
Rush:	No	**#Received:**	1	**#Analyzed:**	
Sample Type:	Non-Perisha...	**Sampling:**	◉ Sub-Sample ○ Total Seizure		
Sample Description:	Artificial stone surface				
Sample Components:	40% quartz 47% dolomite sand, 13% resin				
Info Requested:	Please Provide a breakdown by weight of all comonentss. please see 6479 for further request.				
Suppl. Info 1:					
Suppl. Info 2:					

(b) (7)(E)

(b) (7)(E)

Lab Data

Received In Lab: 5/16/2022 **Status:** TAS **Analysis Time:** 1

Markers: (b) (7)(E)

Others

Lab Comments:

Supporting Documents (b) (7)(E)

Communications (b) (7)(E)

(b)(6), (b)(7)(C)

Digitally signed by (b)(6), (b)(7)(C)
Date: 2022.06.07 10:01:11 -04'00'

SAMPLE RECEIPT AND INSPECTION FORM

Date Received: 05/16/2022 | Received By: (b)(6), (b)(7)(C)

☑ Hand Delivery – Carrier: _____

☐ Mail Delivery - UPS / FedEx / Other: _____ Tracking: _____

Condition as Received: ☑ Good condition ☐ Other (explain)

☐ Proper Seal Intact; Evidence Bag # (if applicable): _____

☐ **FORENSIC SAMPLE** Chain of Custody Number _____

FPF No.: _____

Case No.: _____

Submitter: _____

Submitting Agency: _____

Witness: _____

Examination Requested: _____

Request Reviewed by: _____

☐ Accepted ☐ Rejected (explain)

Date: _____

☑ **TRADE SAMPLE** Entry No. or Other Identifier _____

Special Handling or Storage Instructions:

If special handling procedures are required or sample is not in good condition, Branch Chief/ALD/LD Notified: ☐

Notified by: _____

Date: _____

Supervisor Review:

☑ Typical Sample ☐ Subcontractor

☐ New Work Request ☐ ATS

☐ Rejected (Explain):

Request Reviewed by: (b)(6), (b)(7)(C)

Date: 5-19-22

LIN NUMBER: NY2022-0580 | **ENTERED BY:** (b)(6), (b)(7)(C) | **DATE:** 5/19/2022

(b) (7)(E)

DEPARTMENT OF HOMELAND SECURITY U.S. Customs and Border Protection	**LABORATORY SAMPLE LABEL**			FOR LAB USE ONLY Report Number NY2022-0586
Name of Submitting Officer (b)(6), (b)(7)(C)			Team Number	Received Date 5/16/2022
Email of Submitting Officer (b)(6), (b)(7)(C) cbp.dhs.gov			Phone Number (b)(6), (b)(7)(C)	Received By (b)(6), (b)(7)(C)
Entry Number/Case ID N325438			Line Item Number	Line Item Value ($)
Entered HTSUS Number	Port Code	Entry Date	Country of Origin CN	Country of Export
Importer Name or Number Xiamen Superior Stone Co. LTD				
Manufacturer Name or Number				
Sample Description Artificial stone surface			Sample Item Count	Sent to Lab Date
Stated Components 40% quartz, 47% dolomite sand, 13% resin				
Information Requested Please provide a breakdown by weight of all components. Are all components uniformly agglomerated throughout the body of the surface?				
Sampling Reasons: (b)(7)(E) Classification (b)(7)(E) Trade Enforcement (b)(7)(E) Compliance Measurement Interventions (b)(7)(E) Other Reason (Explain)				Protest (b)(7)(E) If checked, enter protest number below.
Detained Merchandise? Yes (b)(7)(E) No (b)(7)(E)			Expedite (b)(7)(E) If checked, enter reason below.	

(b) (7)(E)

CBP Form 6479 (10/07)

HAND CARRY

U.S. CUSTOMS AND BORDER PROTECTION
National Commodity Specialist Division

DATE: May 5, 2022

To: CBP New York Laboratory
1100 Raymond Boulevard, Suite 550
Newark, NJ 07102

From: (b)(6), (b)(7)(C)
NCSD
201 Varick Street, Suite 501
New York, NY 10014

Subject: Sample for N325438

Sign: (b)(6), (b)(7)(C)

Date: 05/16/2022

Please return receipt to sender

Thank you for submitting your Electronic Request for a Binding Ruling. If your transmission is received in good order, you will receive an email acknowledgement of receipt, complete with a binding ruling control number, within one business day.

Any questions or follow-up inquiries concerning electronic binding ruling requests must be via telephone to Customs and Border Protection, Customs Information Exchange at 646-733-3068/3071.

Ruling Number: N325438

Submission Date: Wed Apr 13 01:09:28 GMT 2022

Submission Summary

Ruling Requester Information

First Name	Hoston
Middle Name	
Last Name	Hong
Title	manager
Company Name	XIAMEN SUPERIOR STONE CO.,LTD
Address	Room 502, No. 500, Jaihai Street, Xiangan District ,Xiamen, N/A N/A China
Phone	13859904931
Email Address	info@superiorsstone.com

Request Type

Selected Request Type(s)	Classification

Questions

Question 1

Is this request being filed on behalf of a client?	No
Client Company	
Client Address	

Question 2

Is your company a Trade Compliance Partner certified for both CTPAT & ISA?	No

If yes, please provide the Importer of Record Number.	

Question 3

To your knowledge are there an issues or requests for advice, concerning this commodity, pending before any CBP office or any Court?	No
Explain the issue or advice request pending; state before which CBP office or Court it is pending, and what advice was rendered, if any. For example, have you received CBP forms 28 or 29 on the issue or item presented before this office?	

Question 4

Is this a resubmission of a previous ruling request which required additional information?	Yes
If yes, please provide the previous ruling number.	N324768

Question 5

Is a sample being submitted?	Yes
If yes, would you like the sample to be returned?	No

Question 6

If available, what is the country of origin of the imported product?

General Description

we have a new product which called dolomite stone surface, and would like to export to USA, Dolomite stone surface is made of 40% natural quartz, 47% dolomite sand and 13% resin, according to the composition, we think this product is belong to artificial marble, and the HST code is 6810990080, and no anti-dumping. because dolomite is the main mineral in the production process, accounting for 47%, quartz stone accounts for 40%, because the proportion of dolomite is higher than quartz stone, weight is also higher than quartz stone, and quartz in the production process only increase the hardness of the plate, The chemical composition of dolomite is CaMg(CO3)2, and the crystal belongs to tripartite carbonate minerals. The crystal structure of

dolomite is similar to that of calcite. The crystal shape is rhombohedral, and the crystal face is often bent into saddle shape. Pure white marble is white, three groups of rhombohedral cleavage complete, brittle. Mohs hardness 3.5-4, specific gravity 2.8-2.9.

Item Descriptions

None

Attachments

Dolomite Stone Description.pdf, Dolomite Sand Analysis.pdf, Dolomite Stone Analysis.pdf, Dolomite Stone Test Report.pdf, N324768.docx

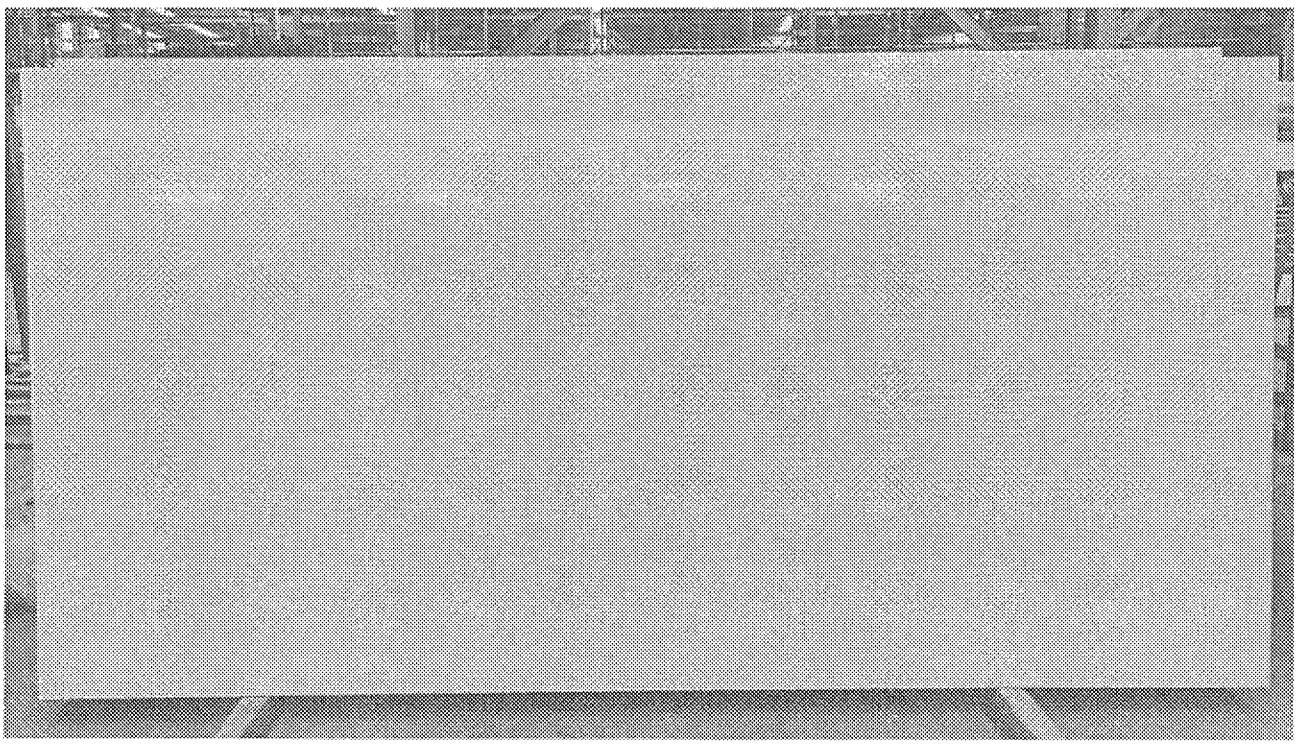
Dolomite Stone Description

Dolomite stone is a agglomerated stone which made of 40% natural quartz sand, 47% dolomite sand and 13% resin. The dimension for dolomite stone slab is 3200*1600*20mm or 3200*1600*30mm. Here is the picture of dolomite stone slab. The weight of the slabs is about 395kgs for 2cm slab, and 496kgs for 3cm slabs, So the weight for each raw material is

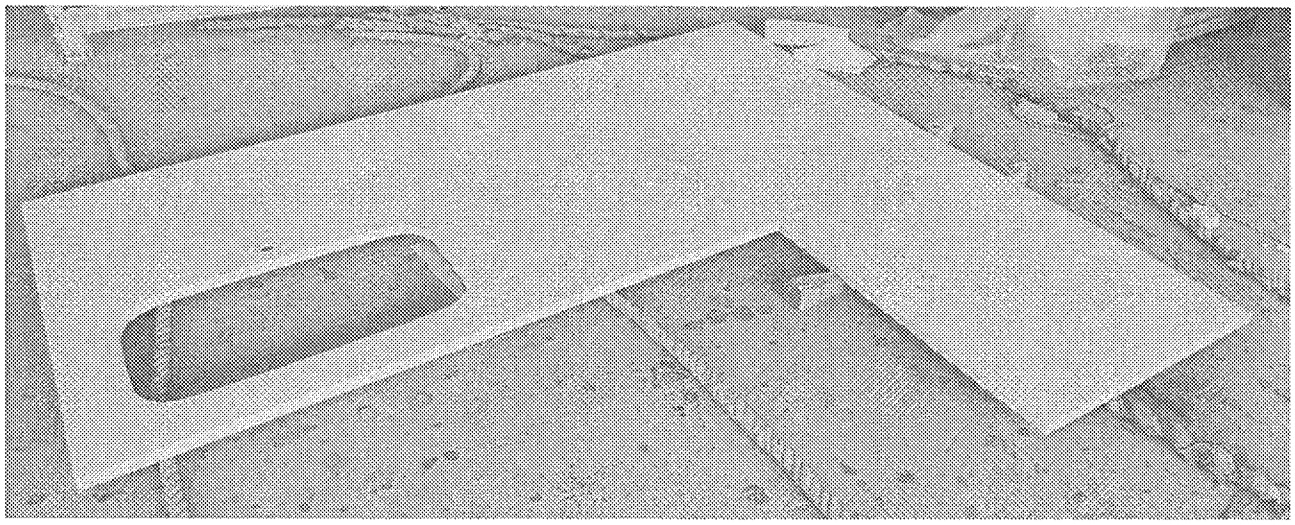
2cm slab: quartz:40%*395=158kgs, dolomite 47%*395kgs=186kgs, resin 13%*395=51kgs

3cm slab: quartz 40%*495=198kgs, dolomite 47%*495kgs=233kgs, resin 13%*495kgs=64kgs

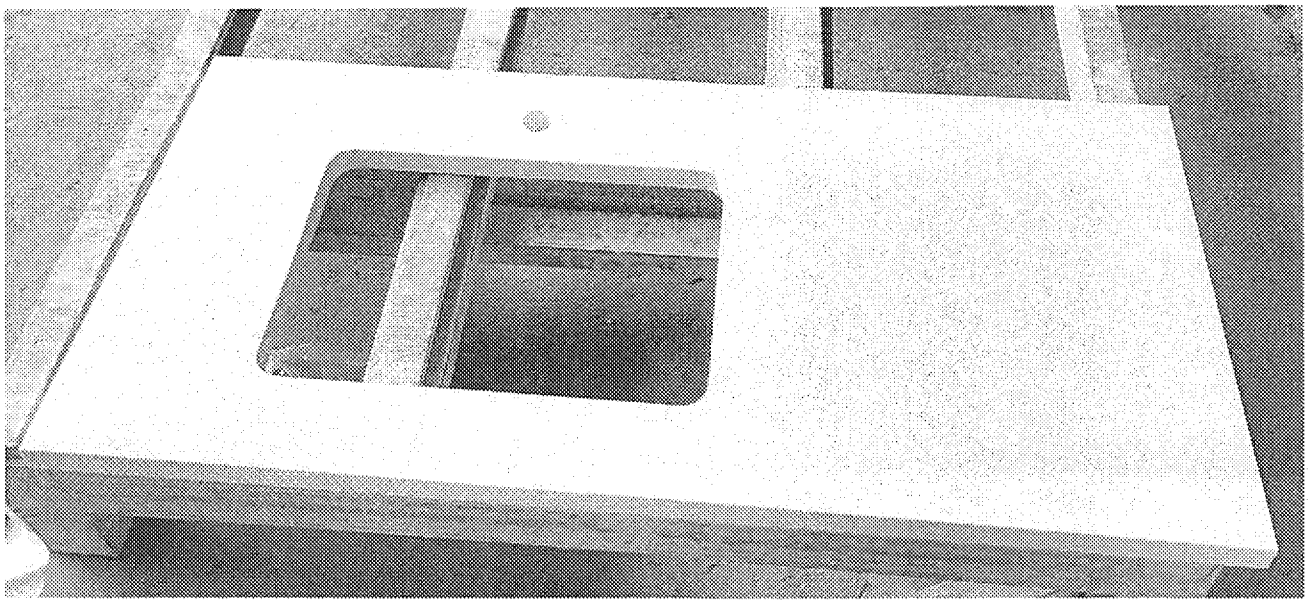
Dolomite Stone Slab Picture:



Dolomite Stone Countertop:



Dolomite Stone Vanity Top:



The dolomite stone product will be used for countertop, vanity top, table top, the dolomite stone countertop exported ready to install.

The quartz sand and dolomite sand is from earth. **Quartz sand quarry and factory**: Jierong Quartz Factory located at 205 Rd, Dongyuan County, Heyuan City, Guangdong Province. **Dolomite Stone Sand quarry and factory:** Shijiangzhuang Chenjin Quarry Product Company located at Hebei Shijiazhuang Lingshou County Yanchuanxiang, Xinhushe Village.

Quartz sand processing: First of all, the stone is preliminarily broken by the coarse crusher, and then the coarse material produced is transported to fine by the belt conveyor,The crusher is further broken, and the finely broken stone is screened into two kinds of stones by the vibrating screen to meet the feeding granularity of the sand making machine Of the stones into the sand machine sand, the other part of the feed into fine broken. Part of the gravel of the sand machine is made into sand and washed After the sand machine is cleaned, the finished sand is made, and the other part of the sand machine is broken again.

Dolomite Stone Sand processing:

1. Vibration feeder will be large size of natural raw stone into the Jaw crusher for coarse crushing;

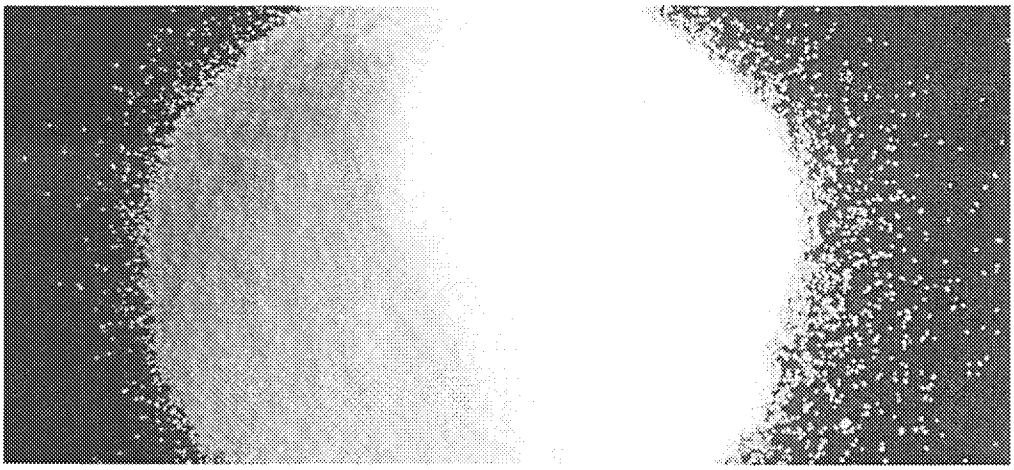
2. The material is sent into the impact crusher for crushing again, and the crushing material is entered into the screening machine for screening;

3.1 Super-diameter materials return to the impact crusher for re-crushing;

3.2 The materials that meet the particle size are sent to the high-pressure roller mill (the roller mill) for sand making and screening;

4. After screening, the material goes into the tailings recycling machine, and then through the sewage treatment equipment, it is transported to the finished product warehouse by the finished product conveyor belt for storage.

Quartz Sand Pictures:



Dolomite Sand Pictures:

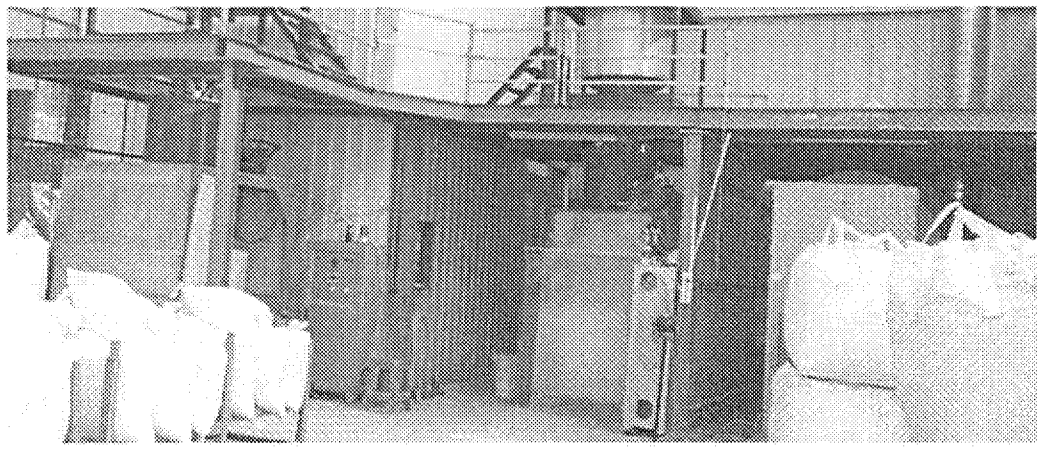
Dolomite Stone Production Process

1: Feeding & Mixing

Step 1, Manual Selecting

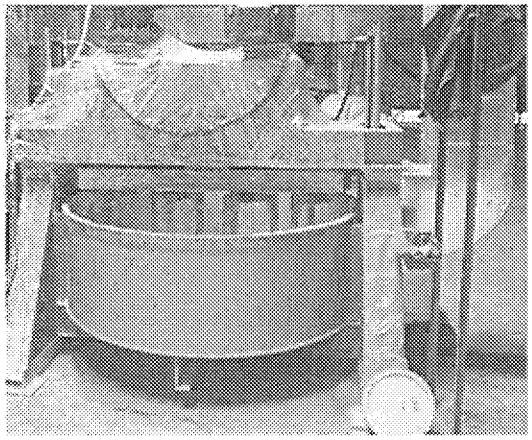
Step 2, Sober & Deironing:

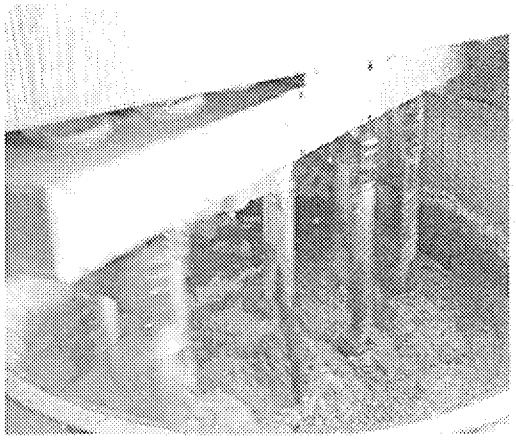
Use different screen elected required mesh of quartz sand and dolomite sand, improve the purity of sand.



Step 3, Deironing

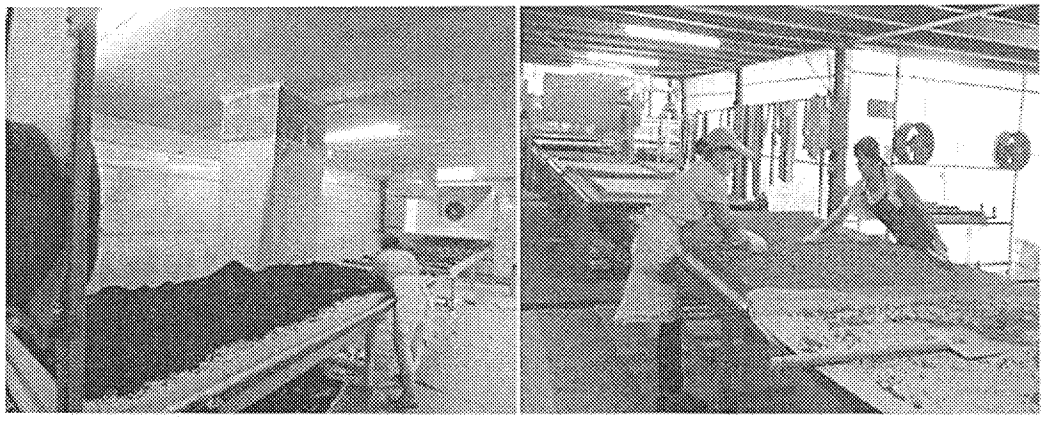
Blender / Mixer Raw materials are inspected, then fed into mixers and blended together.





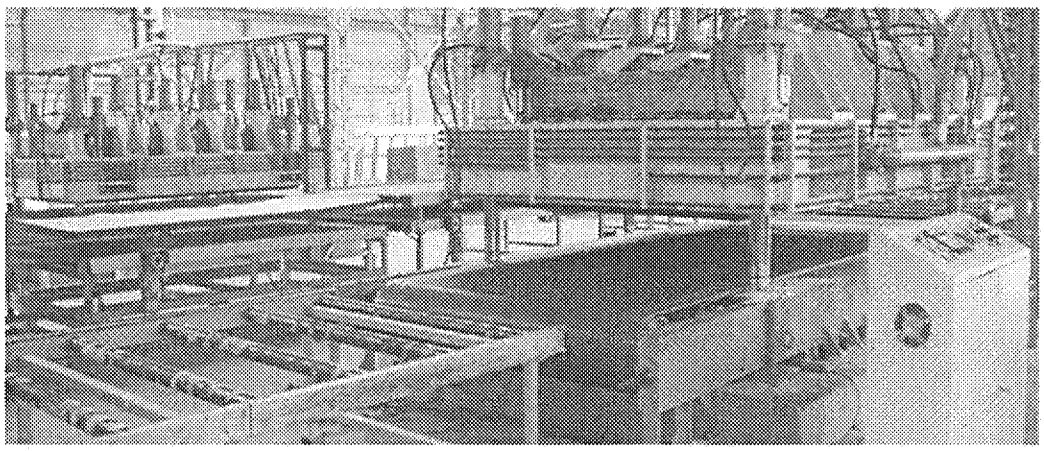
2: Molding

Spreading: The skilled workers spread all the materials falling down from the Stirring Machine in the slab module.



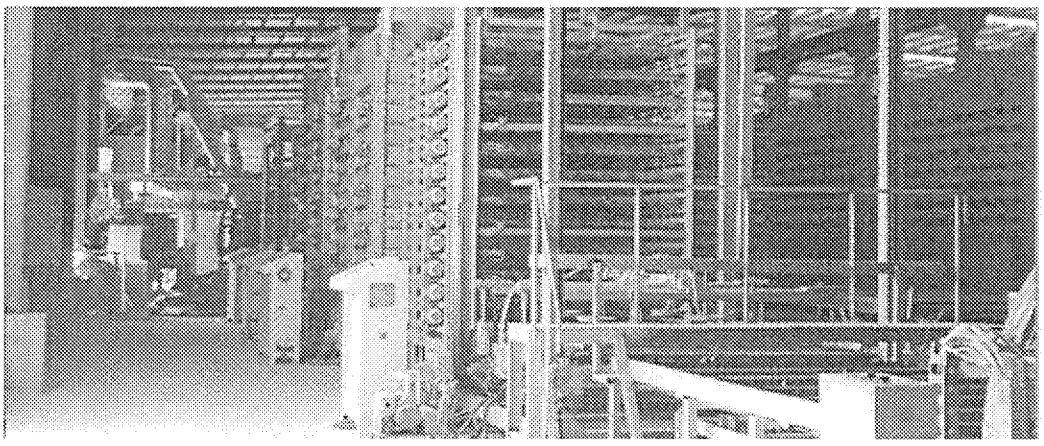
3: Pressing

The slab is then compacted by a special vacuum and vibration process The stability of the product's performance depends on the tonnage of the press. we use **60 tons press** to ensure the uniform of each square meter constituent structure can be more fastness.



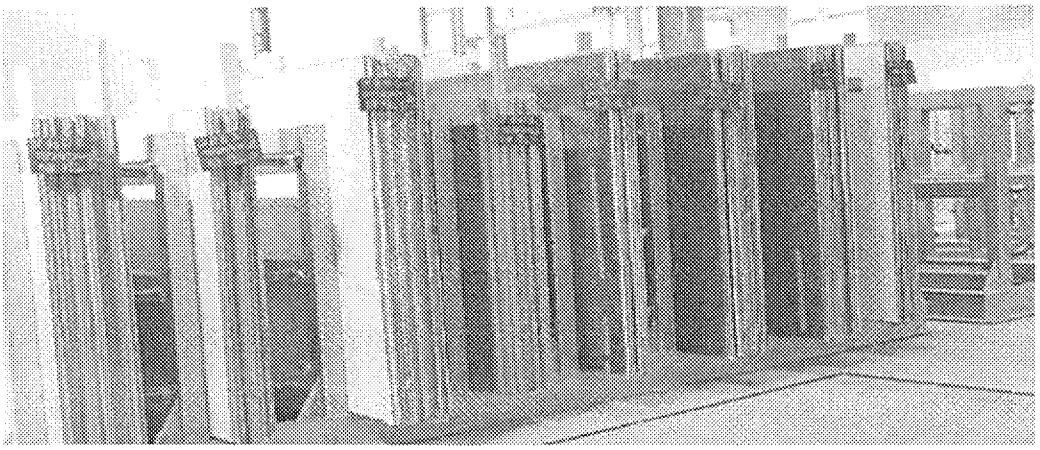
4: Heat Curing

The dolomite stone slab are moved to the curing kiln, though the process of heat curing that gives them the ultimate strength and solidity.

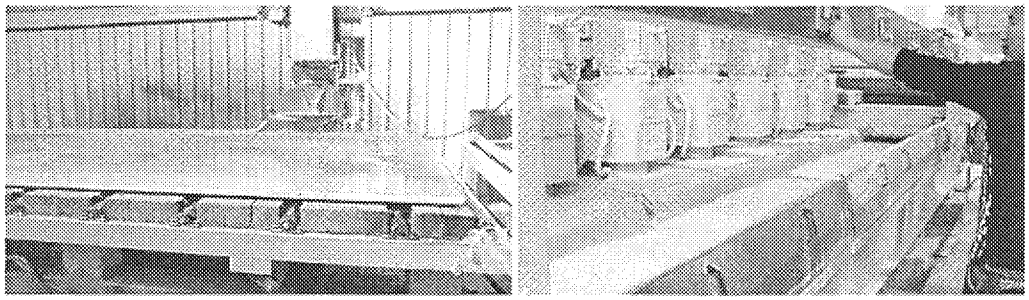


5: Cooling

After heat curing, the dolomite stone slab be back-to-back and face-to-face, upright them in 90 °, and tightly clamp it, in case of the curled slab during the course of slab cooling in 24 hours.

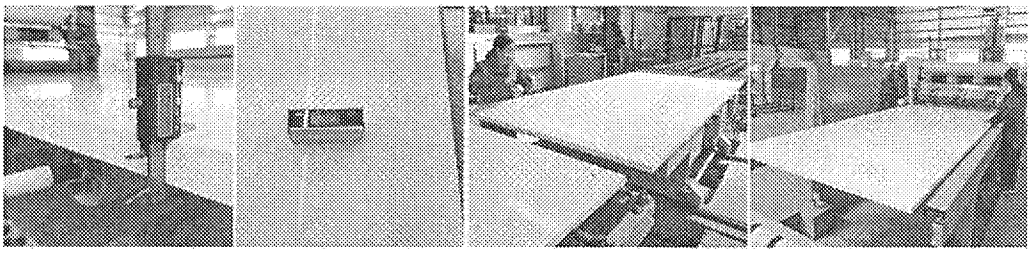


6: Trimminging Edges, Leveling and Thicknessing

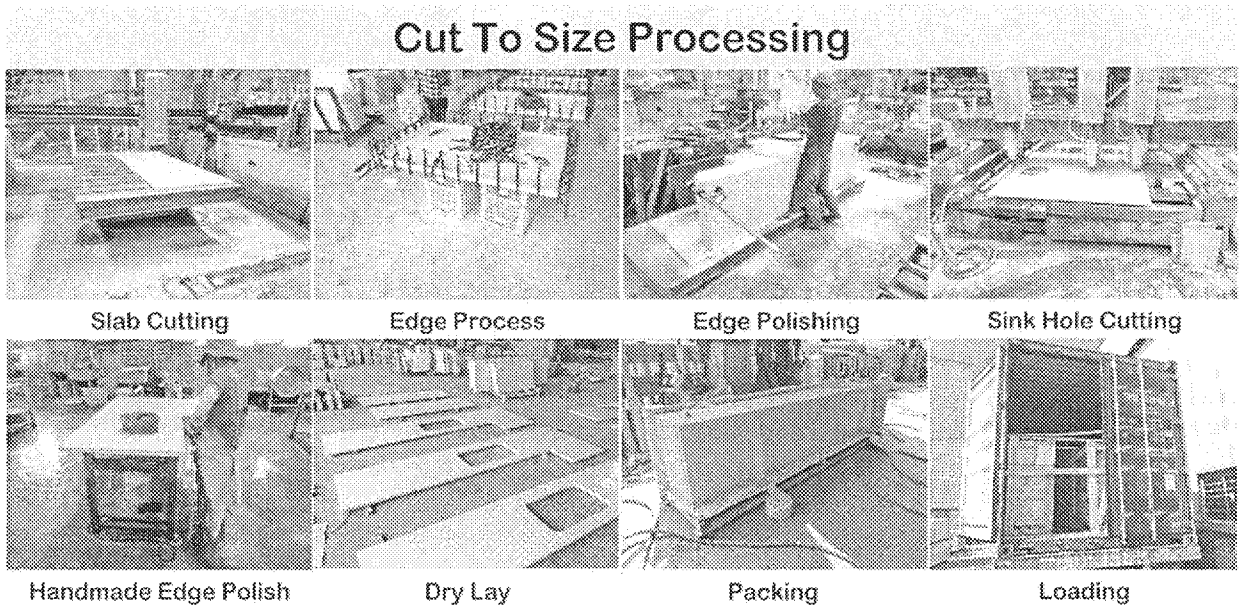


7: Quality Assurance & Film Covering

Quality control is very important. We select only the finest raw materials, which undergo an exacting series of production processes at our state-of-the-art manufacturing facilities. Each and every one of our finished products are polished to perfection, and ready to be rigorously examined.



Dolomite Stone Countertop Processing:



For dolomite stone surface, we think this product belongs to artificial marble products, and the HST Code is 6810990080, because dolomite is the main mineral in the production process, accounting for 47%, quartz stone accounts for 40%, because the proportion of dolomite is higher than quartz stone, weight is also higher than quartz stone, and quartz in the production process only increase the hardness of the plate, The chemical composition of dolomite is $CaMg(CO3)2$, and the crystal belongs to tripartite carbonate minerals. The crystal structure of dolomite is similar to that of calcite. The crystal shape is rhombohedral, and the crystal face is often bent into saddle shape. Pure white marble is white, three groups of rhombohedral cleavage complete, brittle. Mohs hardness 3.5-4, specific gravity 2.8-2.9.

Test Report

Report No. : WP-22035033-JC-01En

SampleOrigin : Customer Sample Delivery

Client : XIAMEN SUPERIOR STONE CO.,LTD.

Address: Room 502, No.500, Xinao Road, Xiangan District, Xiamen, China.

Shanghai WEIPU Testing Technology Group Co., LTD.

Report No. : WP-22035033-JC-01En Page(s) : 1 / 3

Test Report

The following sample(s) was/were submitted and identified on behalf of the applicant:

Sample Name: Artificial Dolomite Stone

Sample Description: Solid

Type: /

Testing information:

Date of Sample Received: 2022-03-02

Testing Period: 2022-03-02~ 2022-03-11

Test Item(s): Selected test (s) as requested by client.

Test Criterion: Please refer to next page(s).

Test Result: Please refer to next page(s).

Complied by:

Approved by:

Issued Date: 2022-03-11

Report No. : WP-22035033-JC-01En Page(s) : **2 / 3**

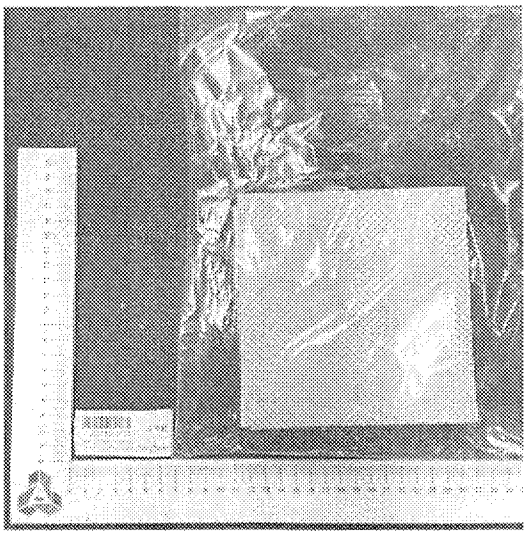
1.Test Item:

Sample ID	Test Item		unit	Test Results	Test Method
220300776-1	bulk density		g/cm³	2.43	GB/T 9966.3-2020
	water absorption		%	0.05	JC/T 908-2013
	mohs hardness		/	5	
	flexural strength		Mpa	62	
	compressive strength		Mpa	191	
	pollution resistance	Sum of pollution resistance values	/	56	
		maximum stain depth		0.06	

End of the Page

Report No. : WP-22035033-JC-01En Page(s) : 3 / 3

Sample picture(s):



End of the Report

——DECLARE——

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2. No unauthorized changes, additions or deletions shall be made to the report.
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4. Any queries on the report shall be presented to us within 15 working days after receipt of the report.
5. The results described here in this report are based on the sample(s) tested.The data and results shown in the report without CMA logo are not used as proof for society, only for internal uses.
6. The applicant takes full responsible for the truthfulness of the testing sample(s) and information related thereto.
7. Without the permission of the company, any party is prohibited from using the test results and the report for undue publicity.
8. With the permission of the client, the items with * in this report is/are subcontracted from other laboratory.

Test Report

Report ID:	WP-22034015-CS-01EnR1
Sample Name:	Artificial Dolomite Stone
SampleOrigin:	Customer Sample Delivery
Applicant:	XIAMEN SUPERIOR STONE CO.,LTD.

Shanghai WEIPU Testing Technology Group Co., LTD.

Test Report

Applicant:	XIAMEN SUPERIOR STONE CO.,LTD.
Address:	Room 502, No.500, Xinao Road, Xiangan District, Xiamen, China.

The following sample(s) was/were submitted and identified on behalf of the applicant:

Sample Name:	Artificial Dolomite Stone
Sample Description:	Solid
Batch No.:	/
Sample Model:	/
Received Date:	2022-03-02
Completion Date:	2022-03-21
Test Requirement(s)	Please refer to next page(s)
Test Result(s):	Please refer to next page(s)
Remark(s):	1.This report is the modification report of the original report WP-22034015-CS-01En, and the original report is invalid. 2.The current test report is the English version of the report number "WP-22034015-CS-01CnR1". In case of any discrepancy between Chinese version and English version, the Chinese version shall prevail for the test.
Compiled by:	Zhang Ke
Approved by:	Shan shan Hu
Issued Date:	2022-03-21

1. **Test Results:**

Sample No.	Sample Name	Test Item(s)	Test Result(s)	Unit(s)	Reference Standard(s)
220300605-1	Artificial Dolomite Stone	XRF	Please refer to attachment 2.1	/	GB/T 21114-2019

****End of Page****

2. Typical Attachment(s):

2.1XRF

Tab. 2.1-1"220300605-1" test results

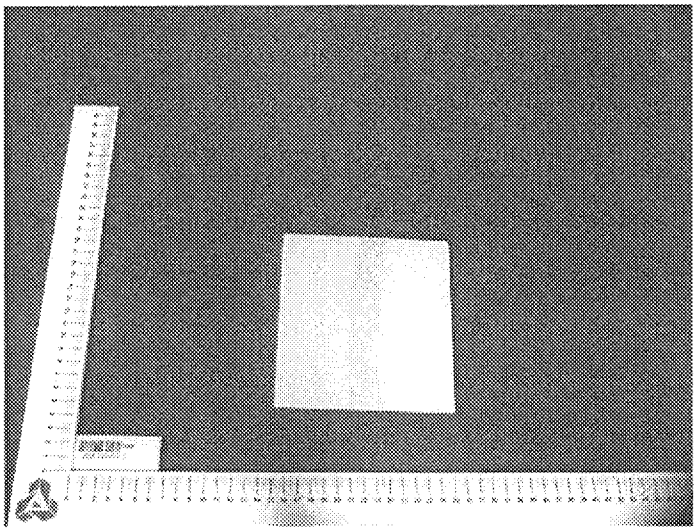
Element	Conc.(%)	Element	Conc.(%)
L.O.I	31.39	PbO	N.D.(<0.01)
Al_2O_3	0.11	ZnO	N.D.(<0.01)
SiO_2	44.75	SrO	N.D.(<0.01)
Fe_2O_3	0.06	MnO	N.D.(<0.01)
CaO	12.83	CdO	N.D.（<0.01）
MgO	10.16	P_2O_5	0.02
K_2O	0.02	SO_3	N.D.（<0.01）
Na_2O	0.10	Cr_2O_3	N.D.（<0.01）
TiO_2	0.46	NiO	N.D.（<0.01）
$Zr(Hf)O_2$	N.D.(<0.01)	CoO	N.D.（<0.01）
BaO	N.D.(<0.01)	CuO	N.D.（<0.01）

Notes:

1.N.D.= Not detected(Less than the detection limit of the method).

****End of Page****

Sample Picture(s)



****End of Report****

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Test Report

Report ID:	WP-22024014-CS-01En
Sample Name:	Dolomite sand
SampleOrigin:	Customer Sample Delivery
Applicant:	XIAMEN SUPERIOR STONE CO.,LTD.

Shanghai WEIPU Chemical Technology Service Co., Ltd.

上海微谱化工技术服务有限公司 报告专用章

Test Report

Applicant:	XIAMEN SUPERIOR STONE CO.,LTD.
Address:	Room 502, No.500, Xinao Road, Xiangan District, Xiamen, China.

The following sample(s) was/were submitted and identified on behalf of the applicant:

Sample Name:	Dolomite sand
Sample Description:	Solid
Batch No.:	/
Sample Model:	/
Received Date:	2022-02-15
Completion Date:	2022-02-23
Test Requirement(s)	Please refer to next page(s)
Test Result(s):	Please refer to next page(s)
Remark(s):	The current test report is the English version of the report number "WP-22024014-CS-01Cn". In case of any discrepancy between Chinese version and English version, the Chinese version shall prevail for the test.

Compiled by: Zhang Ke

Approved by: Shanshan Hu

Issued Date: 2022-02-23

1. Test Results:

Sample No.	Sample Name	Test Item(s)	Test Result(s)	Unit(s)	Reference Standard(s)
220201605-1	Dolomite sand	XRF	Please refer to attachment 2.1	/	GB/T 21114-2019

****End of Page****

2. Typical Attachment(s):

2.1XRF

Tab. 2.1-1"220201605-1" test results

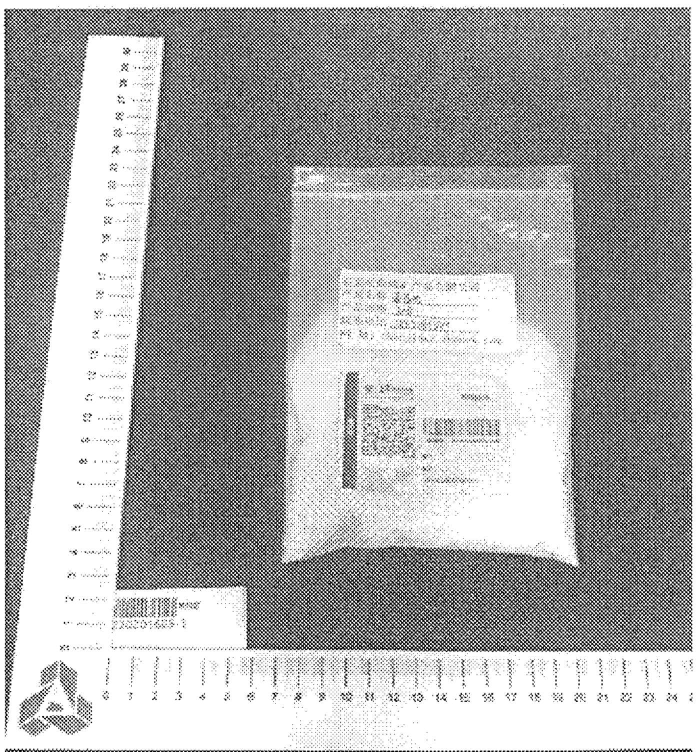
Element	Conc.(%)	Element	Conc.(%)
L.O.I	46.99	Li_2O	N.D.（<0.01）
Al_2O_3	N.D.（<0.01）	PbO	N.D.（<0.01）
SiO_2	0.47	ZnO	N.D.（<0.01）
Fe_2O_3	0.04	CdO	N.D.（<0.01）
CaO	30.04	SrO	N.D.（<0.01）
MgO	22.35	MnO	N.D.（<0.01）
K_2O	N.D.（<0.01）	Cr_2O_3	N.D.（<0.01）
Na_2O	N.D.（<0.01）	NiO	N.D.（<0.01）
TiO_2	0.01	CoO	N.D.（<0.01）
$Zr(Hf)O_2$	N.D.（<0.01）	CuO	N.D.（<0.01）
BaO	N.D.（<0.05）	Rb_2O	N.D.（<0.01）
P_2O_5	N.D.（<0.05）	SO_3	N.D.（<0.05）
F	N.D.（<0.05）	/	/

Notes:

1.N.D.= Not detected(Less than the detection limit of the method).

****End of Page****

Sample Picture(s)



****End of Report****

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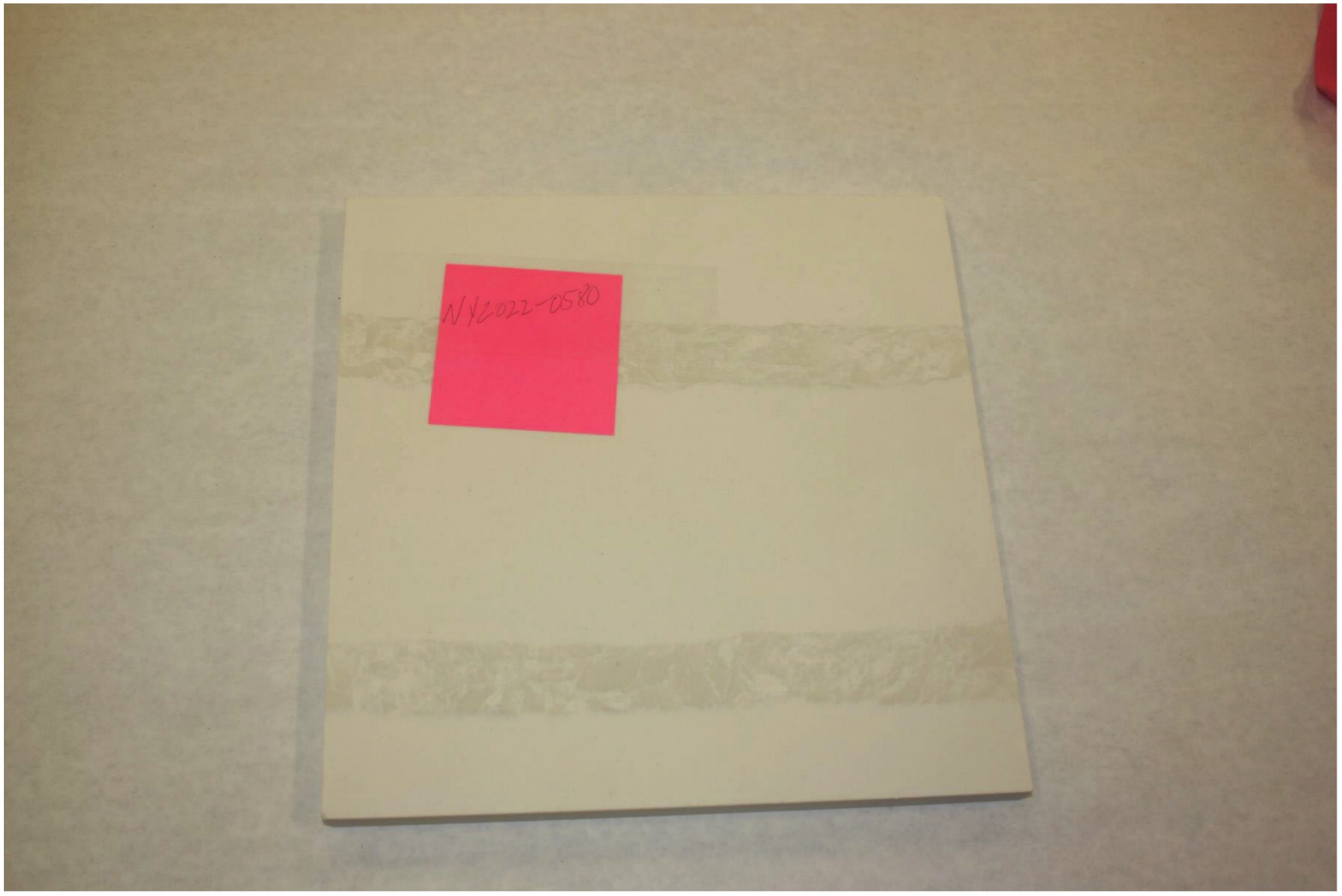
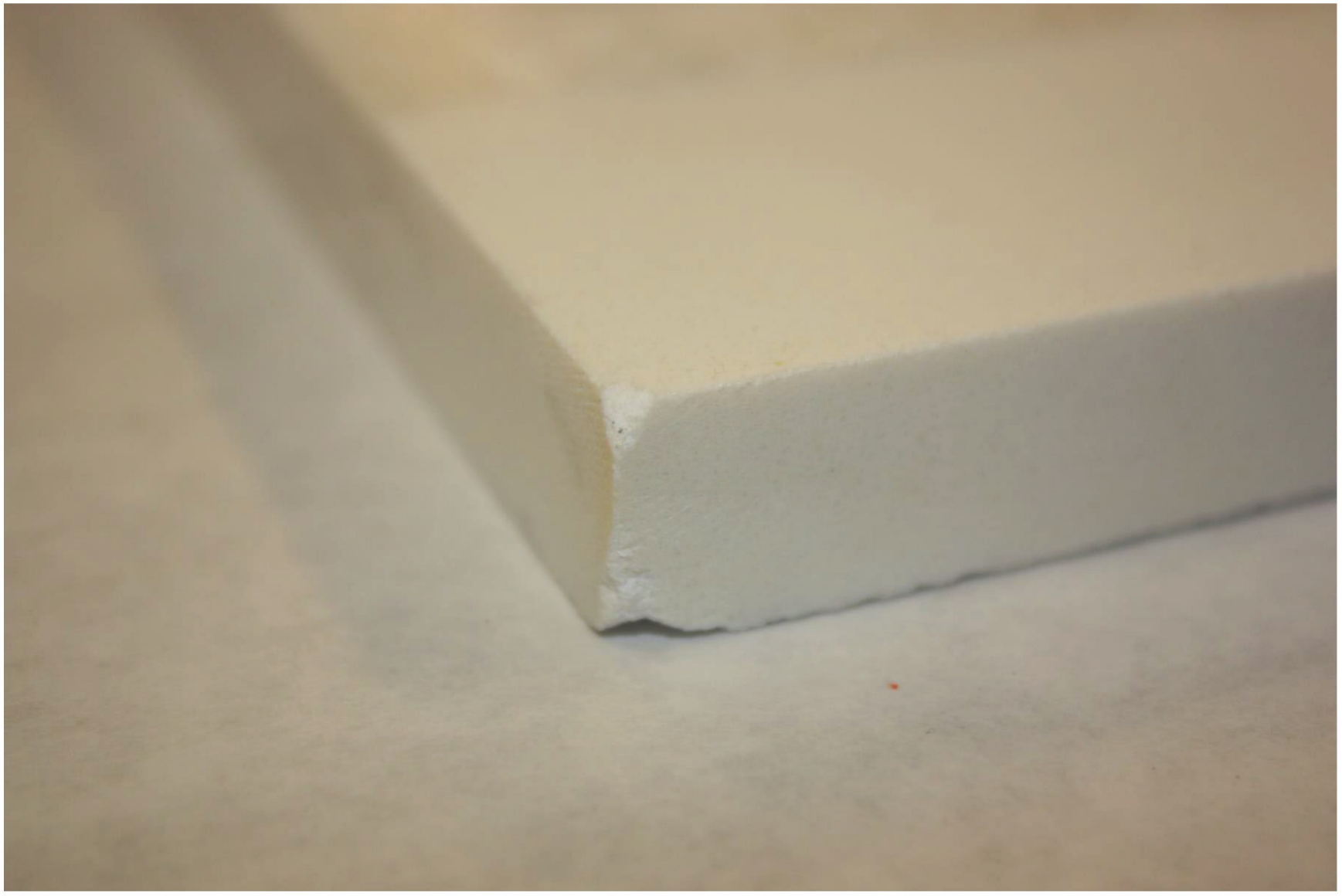
Top view:



Side view:



NY20220580 (b) (6), (b) (7)(C) 05/24/2022

The submission is an artificial stone slab that is white and various shades of gray in color. Two darker gray bands are across the middle of the slab. The top appears to be polished and the sides are simply cut/sawn. Small inclusions are visible on the surface.

Examination

Baker Digital Caliper Type EC100 (SN: 2433)
↳ verified by set EMR001 (1.000 in = 1.000 in ✓)

*length + width approximated with ruler

length: 26.9 cm
width: 27.0 cm
thickness: 15.7mm, 16.4mm, 16.4mm, 16.5mm, 16.2mm, 16.0mm, 15.8mm, 15.8mm
AVERAGE: 16.1 mm

Sample Preparation

Cut into smaller pieces for analysis.
Put in oven at 105°C for at least 3 hours to remove excess moisture from cutting process.
Cool.

oven - Fisher Scientific
thermometer 9329HOS (SN: 210399315)

NY20220580 (b) (6), (b) (7)(C) 05/24/2022

XRF

Panalytical Zetium XRF (SN: DY3408)

Verification: NIST 1117

application: Omnian 27 mm

processing parameters: Solid Compounds

* used small piece from sample prep

Ignition Loss (continued 05/25/2022)

Prepare 3 crucibles by drying.

Cool and weigh.

Place samples into own crucible and weigh.

Ignite with Bunsen burner to remove all carbon/non-ash.

Place in muffle furnace at 565°C for 6 hours.

Cool in desiccator and weigh.

Balance: Mettler Toledo XPE2SOO (SN: B737658217)

↳ verified by set 554254.2C (SN: 01-39600-9)

Muffle Furnace: Carbolite Gero (SN: 22-101745)

	Trial 1	Trial 2	Trial 3
Weight crucible	37.3470 g	38.4193 g	37.4056 g
Weight crucible + sample	89.7142 g	86.0472 g	86.1563 g
Weight crucible + residue	87.2525 g	79.2996 g	79.2449 g

* Samples charred and burned when exposed to flame

* White in color when removed from furnace

NY20220580D (b) (6), (b) (7)(C) 05/25/2022

XRD (continued 06/06/2022, 06/07/2022)

Grinding Mill – Retsch (SN: C1034642)

Panalytical Empyrean XRD (SN: 203610)

verification: aluminum oxide

program: GeneralHolder_27mm

Use samples from ignition loss test.

Grind with grinding mill for 20min to make powder fine.

Place on sample holder and level for analysis.

* very light gray after grinding *

Based on composition, created verification of 40:50:10 silica-dolomite-calcite into mortar with pestle.

Grind until powder fine.

Place on sample holder and level for analysis.

Balance: Mettler Toledo XPE250 (SN: B737638717)

verified by set 854250t.2C (SN: 01-39600-9)

weight of silica: 0.8326g

weight of dolomite: 1.0908g

weight of calcite: 0.2049g

* white powder after grinding *

XRD { verification: 40:50:10 silica-dolomite-calcite
program: Quantitative_27mm Holder

* Rietveld analysis *

*for verification (40:50:10) and samples in triplicate

Use samples from ignition loss.

Grind as above, place on sample holder, and level for analysis. Complete in triplicate.

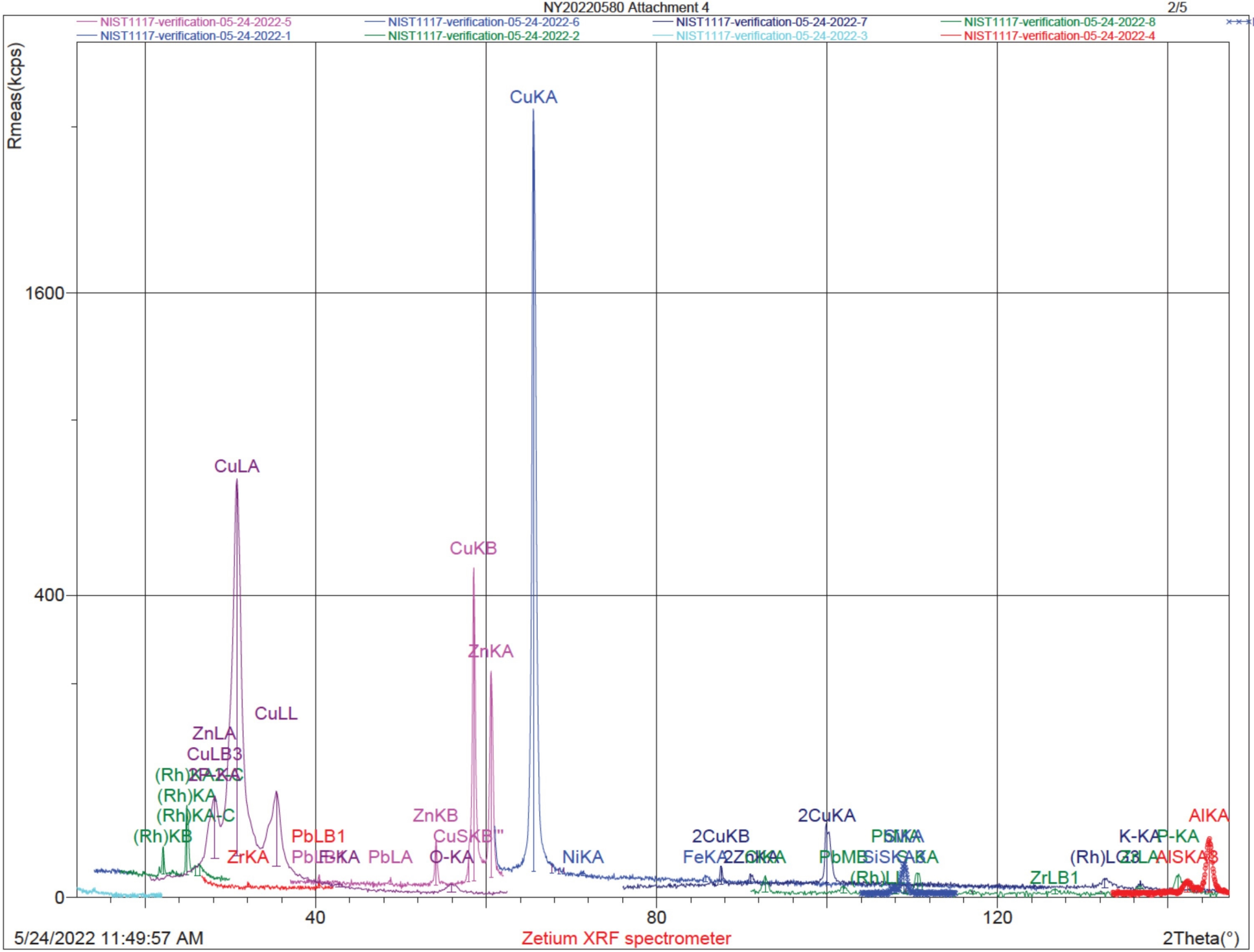
* Rietveld analysis *

PANalytical

Quantification of sample NIST1117-verification-05-24-2022

R.M.S.:	0.000
Result status:	
Sum:	105.4 %
Sample type:	Solid
Correction applied for medium:	No
Correction applied for film:	No
Results database:	ominan 27 mm
Results database in:	(b) (7)(E)

	Element	Conc. (%)
1	O	2.37
2	F	0.18
3	Al	0.67
4	Si	0.25
5	P	0.03
6	S	0.04
7	Cl	0.09
8	K	0.06
9	Fe	0.03
10	Ni	0.02
11	Cu	95.10
12	Zn	6.49
13	Zr	0.01
14	Pb	0.07


NIST1117-verification-05-24-2022-5
NIST1117-verification-05-24-2022-6
NIST1117-verification-05-24-2022-7
NIST1117-verification-05-24-2022-8
NIST1117-verification-05-24-2022-1
NIST1117-verification-05-24-2022-2
NIST1117-verification-05-24-2022-3
NIST1117-verification-05-24-2022-4
Rmeas(kcps)
1600
400
0
40
80
120
2Theta(°)
5/24/2022 11:49:57 AM
Zetium XRF spectrometer
CuKA
CuLA
CuKB
ZnKA
CuLL
ZnLA
CuLB3
(Rh)KA
(Rh)KA-C
(Rh)KB
ZrKA
PbLB1
PbLA
ZnKB
NiKA
2CuKA
2CuKB
ZrLB1
AlKA

PANalytical

Quantification of sample NY20220580slab

R.M.S.:	0.000
Result status:	
Sum before normalization:	79.9 %
Normalised to:	100.0 %
Sample type:	Solid
Correction applied for medium:	No
Correction applied for film:	No
Used Compound list:	Oxides
Results database:	inorganic
Results database in:	(b)(7)(E)

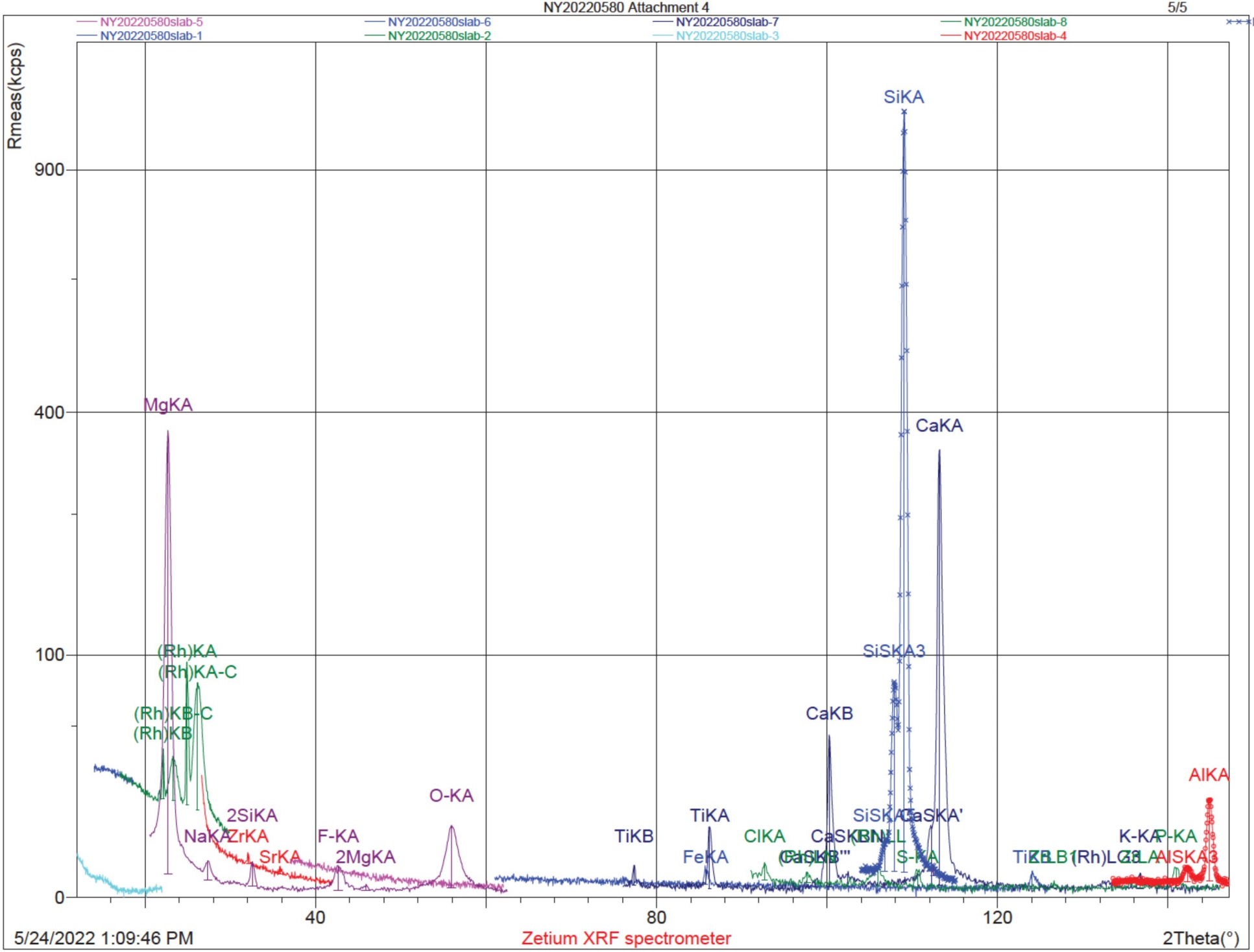
Analyte	Calibration status	Compound formula	Concentration	Unit	Calculation method	Status
Zr	Calibrated	ZrO2	0.007	%	Calculate	
Sr	Calibrated	SrO	0.004	%	Calculate	
Fe	Calibrated	Fe2O3	0.080	%	Calculate	
Ti	Calibrated	TiO2	1.145	%	Calculate	
Ca	Calibrated	CaO	27.897	%	Calculate	
K	Calibrated	K2O	0.062	%	Calculate	
Cl	Calibrated	Cl	0.054	%	Calculate	
S	Calibrated	SO3	0.034	%	Calculate	
P	Calibrated	P2O5	0.032	%	Calculate	
Si	Calibrated	SiO2	56.386	%	Calculate	
Al	Calibrated	Al2O3	0.615	%	Calculate	
Mg	Calibrated	MgO	11.224	%	Calculate	
Na	Calibrated	Na2O	0.148	%	Calculate	
F	Calibrated	F	2.312	%	Calculate	

PANalytical

Quantification of sample NY20220580slab

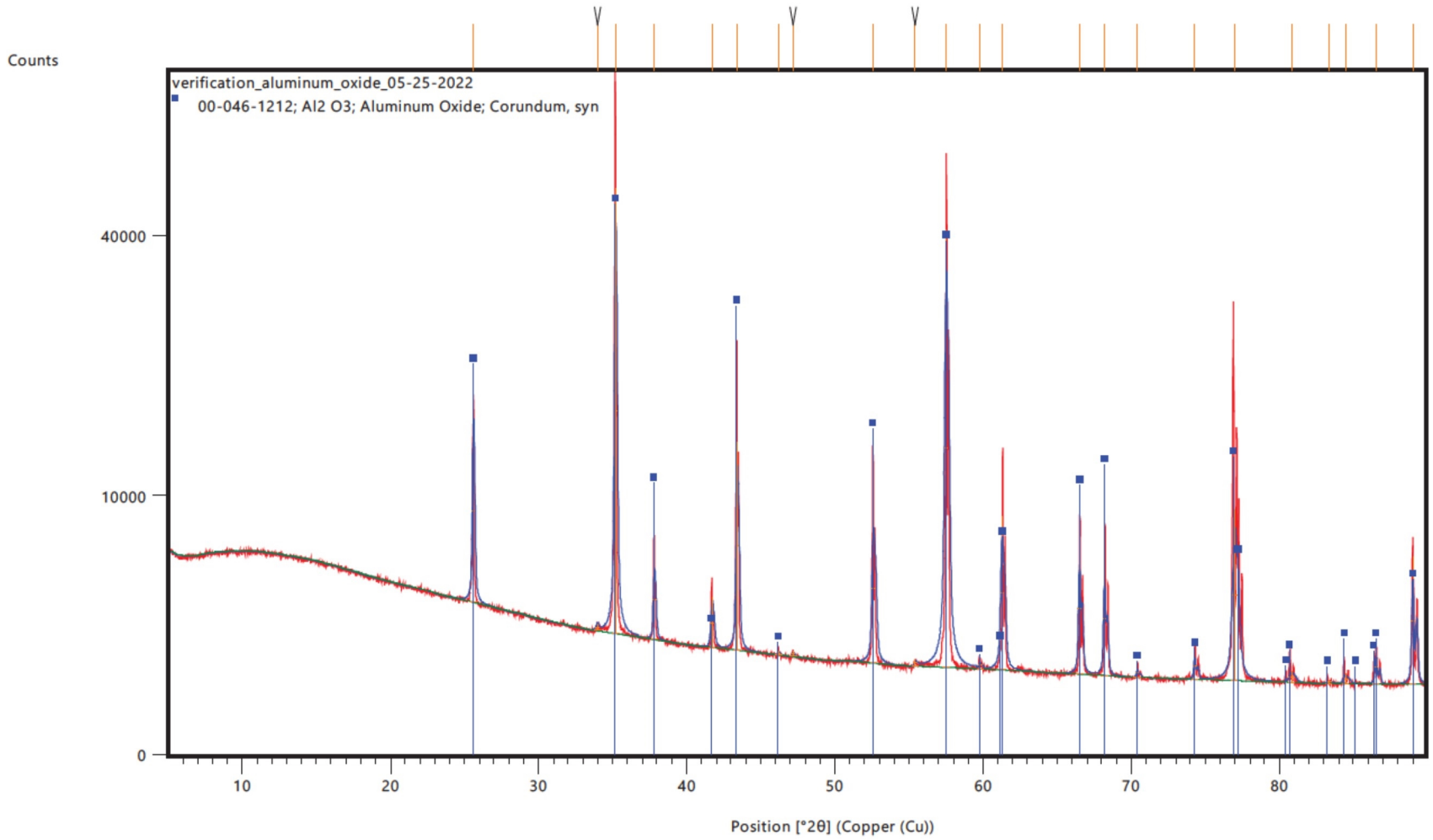
R.M.S.:	0.000
Result status:	
Sum before normalization:	79.9 %
Normalised to:	100.0 %
Sample type:	Solid
Correction applied for medium:	No
Correction applied for film:	No
Used Compound list:	Oxides
Results database:	inorganic
Results database in:	(b)(7)(E)

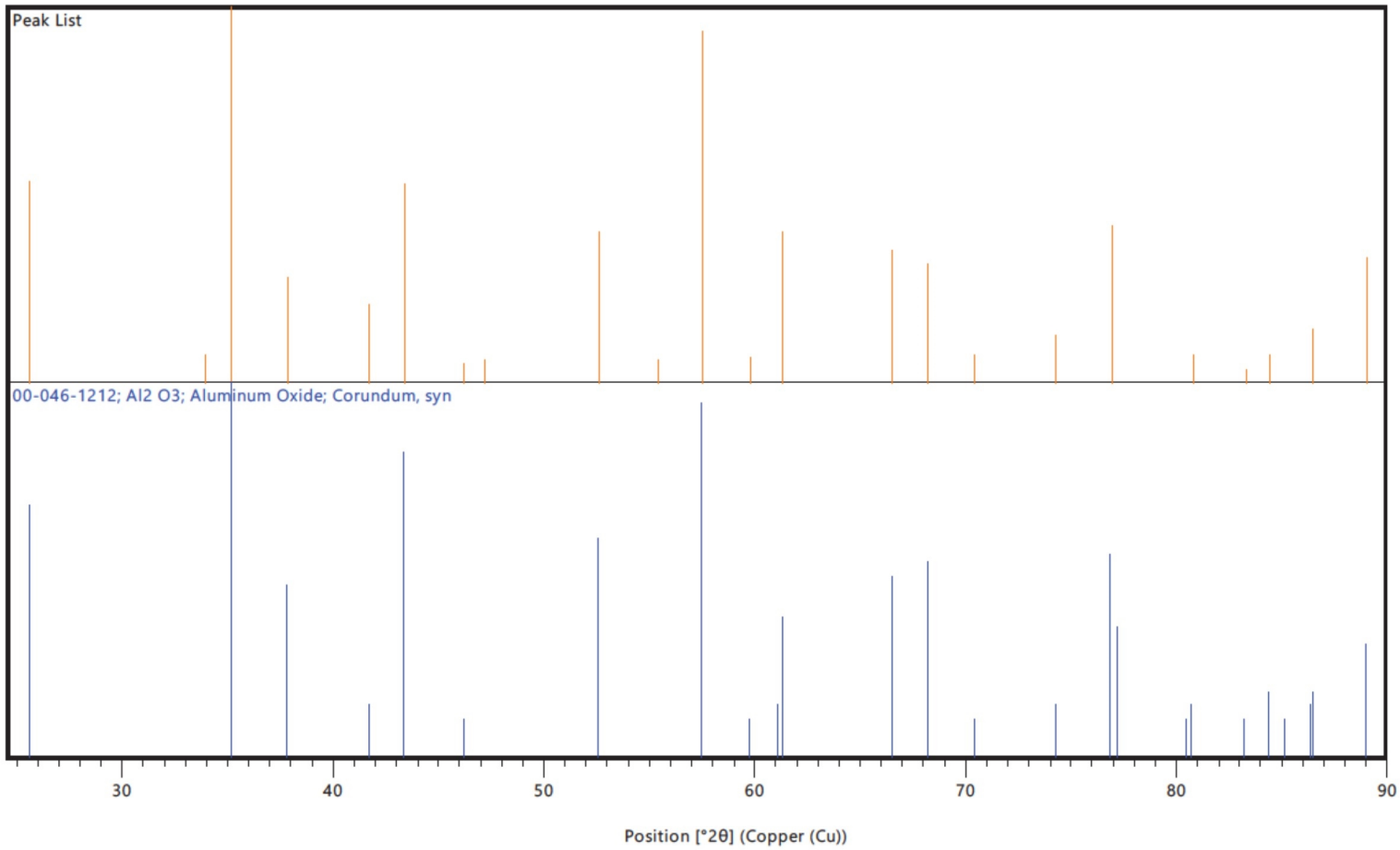
	Element	Conc. (%)
1	O	43.31
2	F	2.31
3	Na	0.11
4	Mg	6.77
5	Al	0.33
6	Si	26.36
7	P	0.01
8	S	0.01
9	Cl	0.05
10	K	0.05
11	Ca	19.94
12	Ti	0.69
13	Fe	0.06
14	Sr	0.00
15	Zr	0.01


NY20220580slab-5
NY20220580slab-1
NY20220580slab-6
NY20220580slab-2
NY20220580slab-7
NY20220580slab-3
NY20220580slab-8
NY20220580slab-4
Rmeas(kcps)
900
400
100
0
40
80
120
2Theta(°)
5/24/2022 1:09:46 PM
Zetium XRF spectrometer
SiKA
MgKA
CaKA
(Rh)KA
(Rh)KA-C
(Rh)KB-C
(Rh)KB
SiSKA3
CaKB
AlKA
2SiKA
NaKA
ZrKA
SrKA
F-KA
2MgKA
O-KA
TiKB
TiKA
FeKA
ClKA
SiSKA'
CaSKA'
S-KA
K-KA
P-KA

File name	(b)(7)(E)
Measurement Start Date/Time	5/25/2022 12:44:39 PM
Operator	Lab_User
Start Position [°2θ]	5.0066
End Position [°2θ]	89.9876
Step Size [°2θ]	0.0130

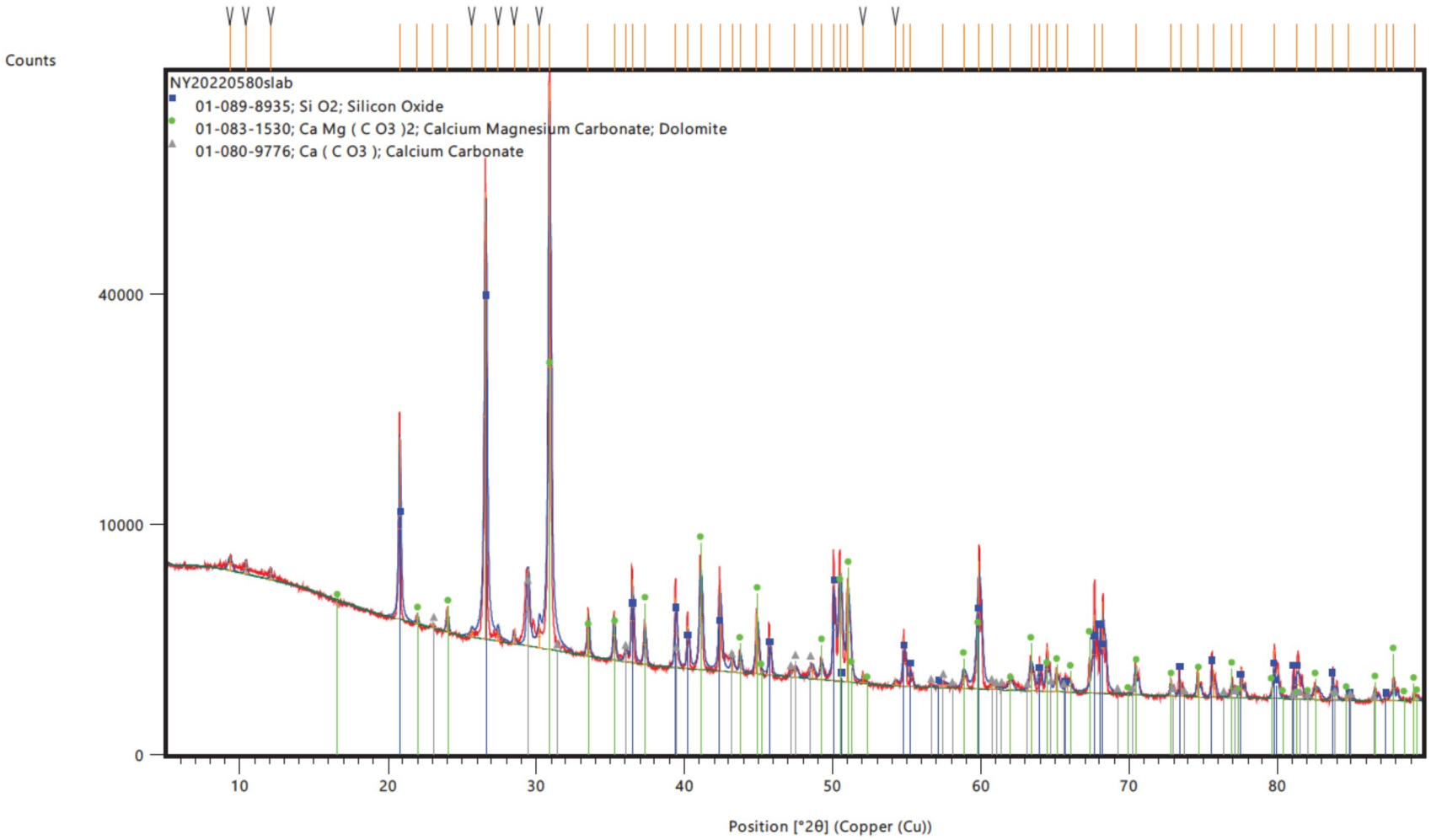
Ref.Code	Compound Name	Chem. Formula	Chem. Name	Mineral Name
00-046-1212	Aluminum Oxide	Al2 O3		Corundum, syn

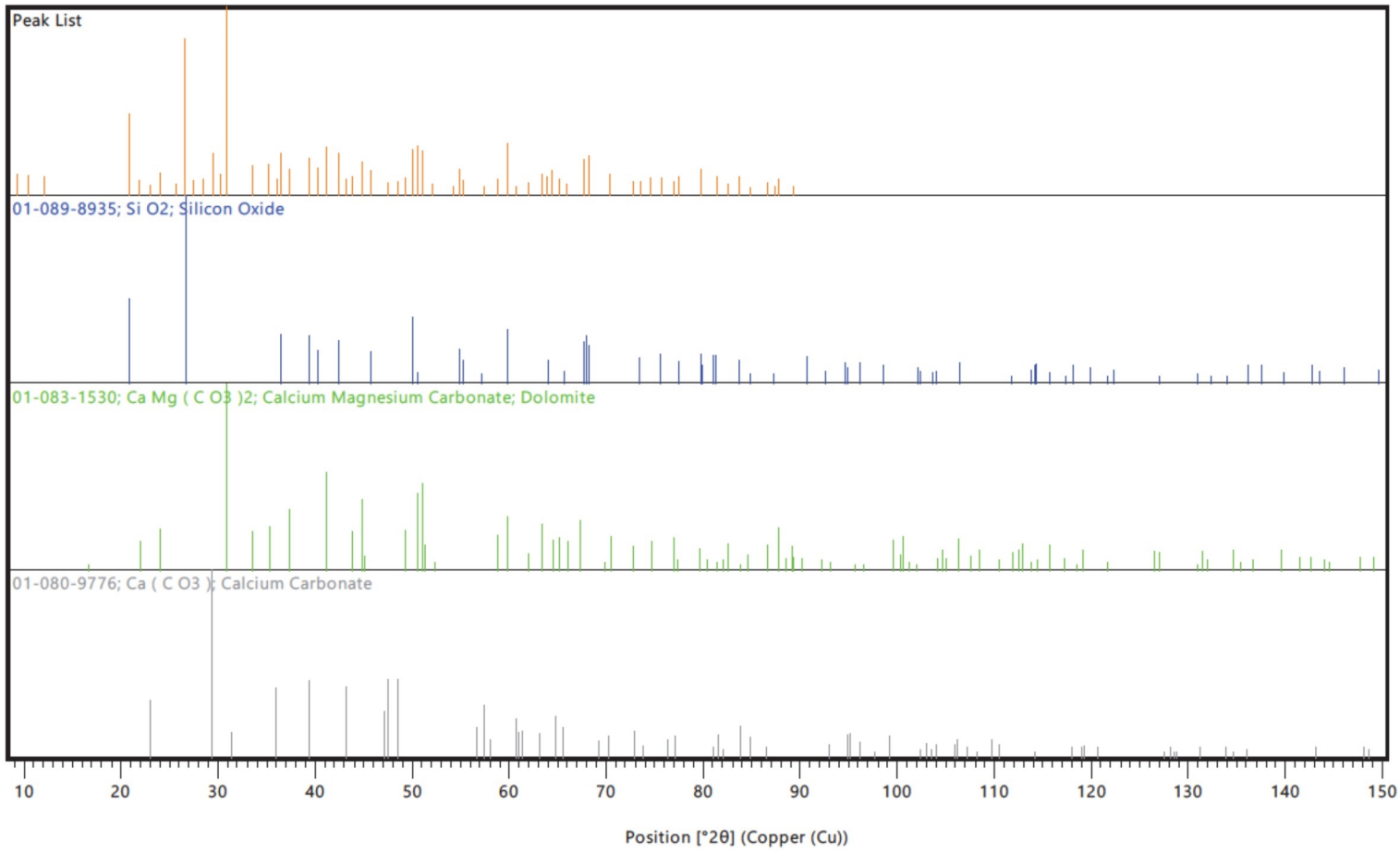

Counts
verification_aluminum_oxide_05-25-2022
00-046-1212; Al2 O3; Aluminum Oxide; Corundum, syn
40000
10000
0
10
20
30
40
50
60
70
80
Position [°2θ] (Copper (Cu))


Peak List
00-046-1212; Al2 O3; Aluminum Oxide; Corundum, syn
30
40
50
60
70
80
90
Position [°2θ] (Copper (Cu))

File name	(b)(7)(E)
Measurement Start Date/Time	5/25/2022 2:34:31 PM
Operator	Lab_User
Start Position [°2θ]	5.0066
End Position [°2θ]	89.9876
Step Size [°2θ]	0.0130

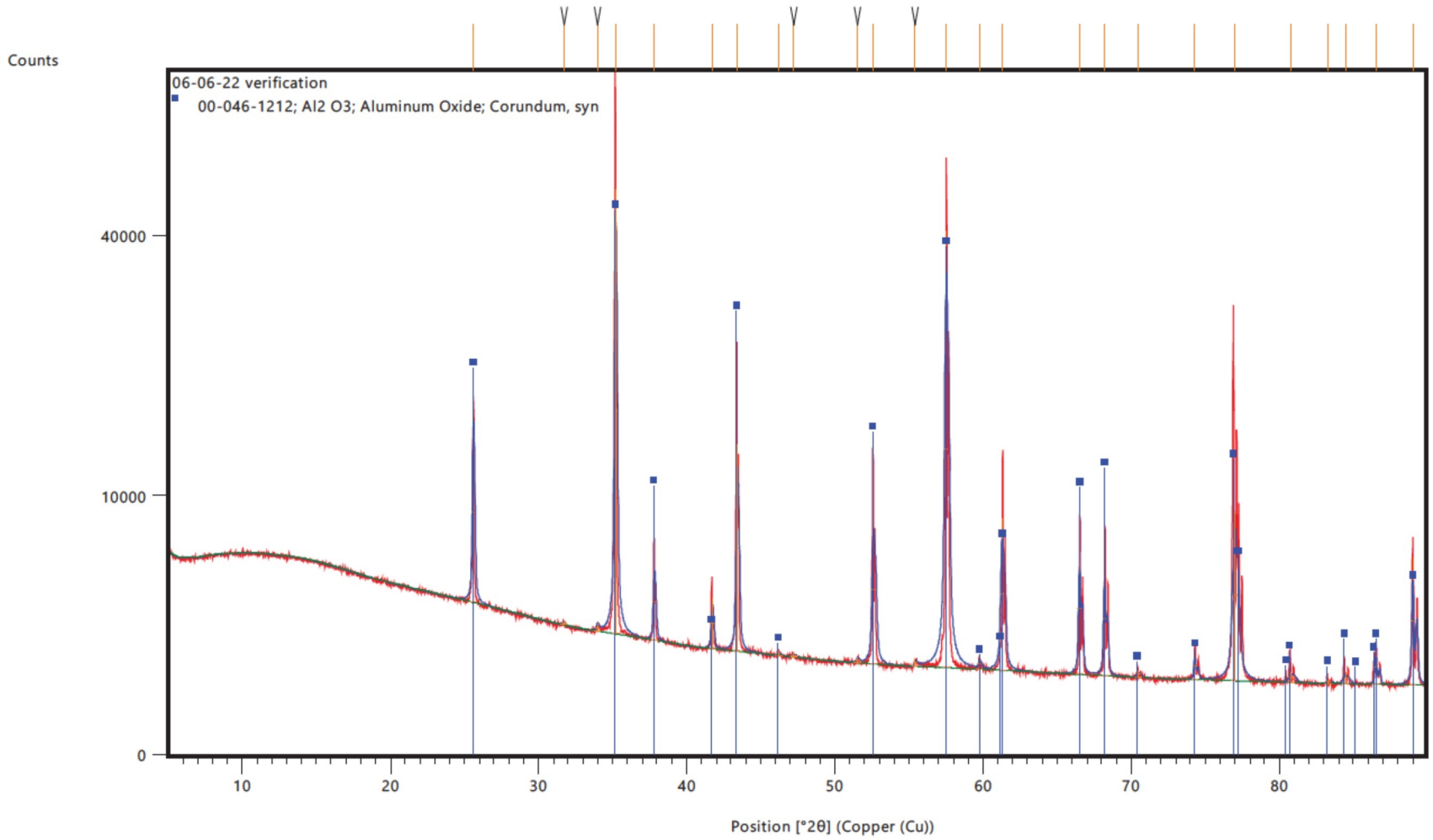
Ref.Code	Compound Name	Chem. Formula	Chem. Name	Mineral Name
01-089-8935	Silicon Oxide	Si O2		
01-083-1530	Calcium Magnesium Carbonate	Ca Mg (C O3)2		Dolomite
01-080-9776	Calcium Carbonate	Ca (C O3)		

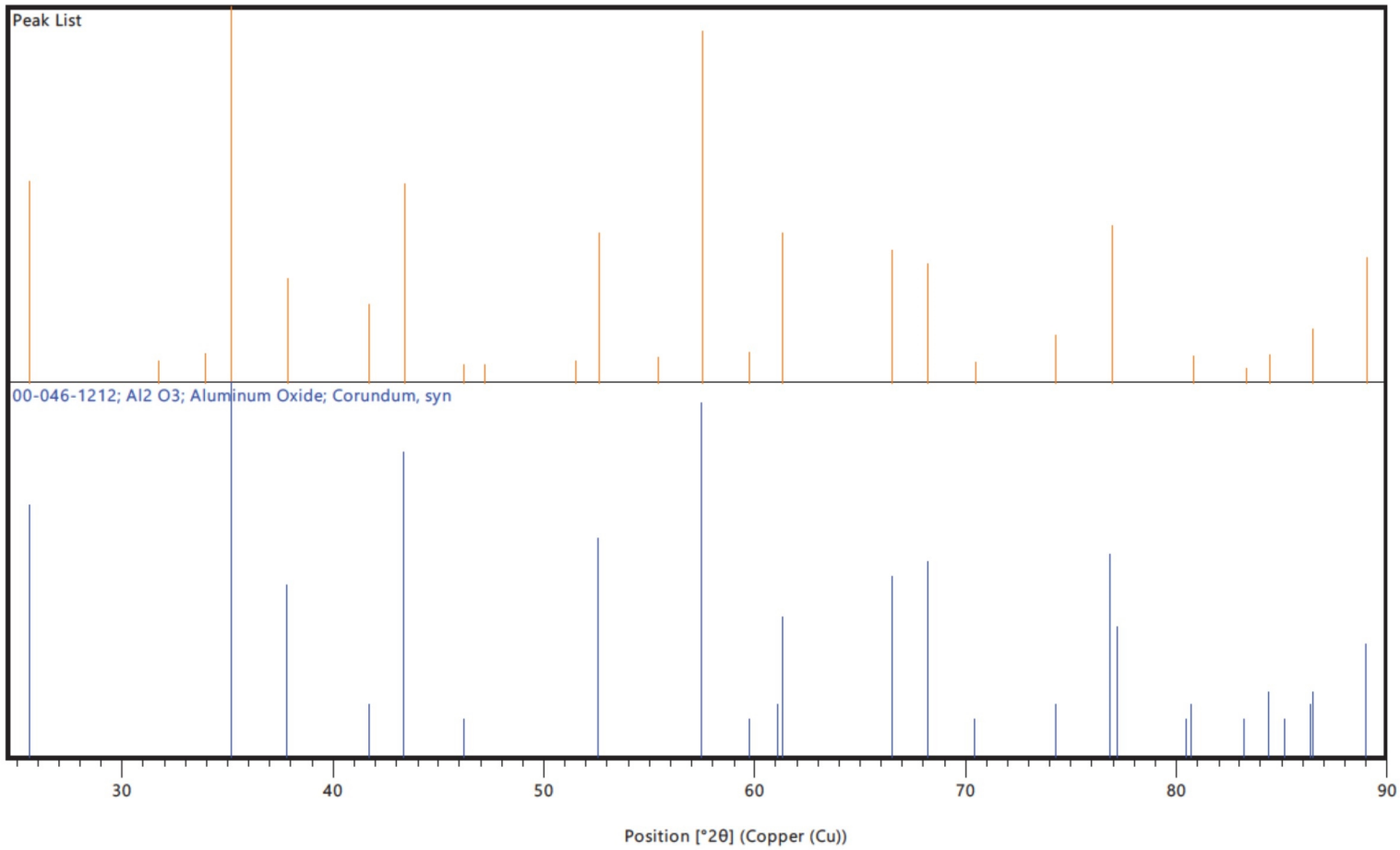

Counts
NY20220580slab
01-089-8935; Si O2; Silicon Oxide
01-083-1530; Ca Mg (C O3)2; Calcium Magnesium Carbonate; Dolomite
01-080-9776; Ca (C O3); Calcium Carbonate
40000
10000
0
10
20
30
40
50
60
70
80
Position [°2θ] (Copper (Cu))


Peak List
01-089-8935; Si O2; Silicon Oxide
01-083-1530; Ca Mg (C O3)2; Calcium Magnesium Carbonate; Dolomite
01-080-9776; Ca (C O3); Calcium Carbonate
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Position [°2θ] (Copper (Cu))

File name	(b)(7)(E)
Measurement Start Date/Time	6/6/2022 8:00:18 AM
Operator	Lab_User
Start Position [°2θ]	5.0066
End Position [°2θ]	89.9876
Step Size [°2θ]	0.0130

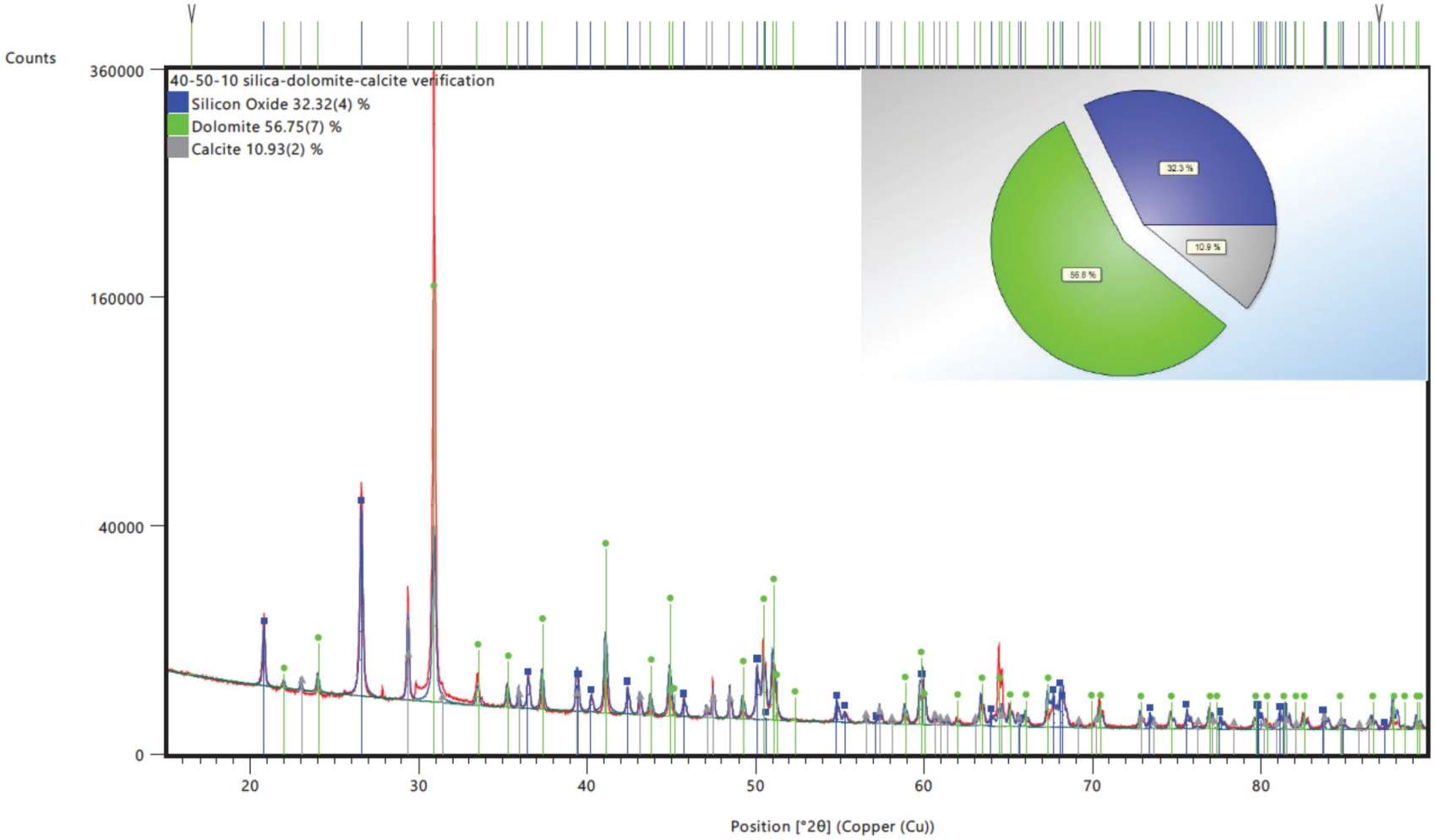
Ref.Code	Compound Name	Chem. Formula	Chem. Name	Mineral Name
00-046-1212	Aluminum Oxide	Al2 O3		Corundum, syn

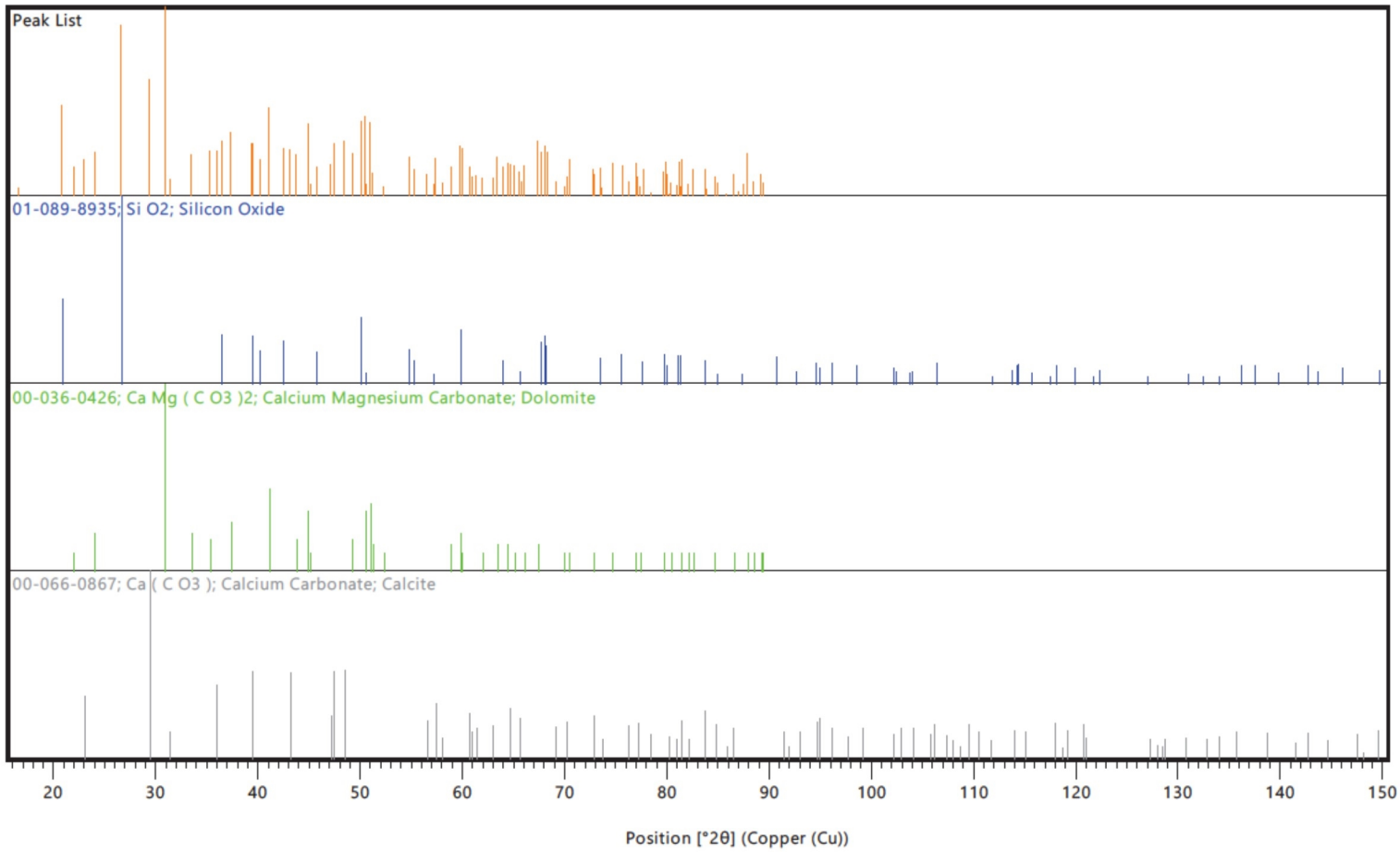

Counts
06-06-22 verification
00-046-1212; Al2 O3; Aluminum Oxide; Corundum, syn
40000
10000
0
10
20
30
40
50
60
70
80
Position [°2θ] (Copper (Cu))


Peak List
00-046-1212; Al2 O3; Aluminum Oxide; Corundum, syn
30
40
50
60
70
80
90
Position [°2θ] (Copper (Cu))

File name	(b)(7)(E)
Measurement Start Date/Time	6/6/2022 9:33:48 AM
Operator	Lab_User
Start Position [°2θ]	15.0066
End Position [°2θ]	89.9906
Step Size [°2θ]	0.0130

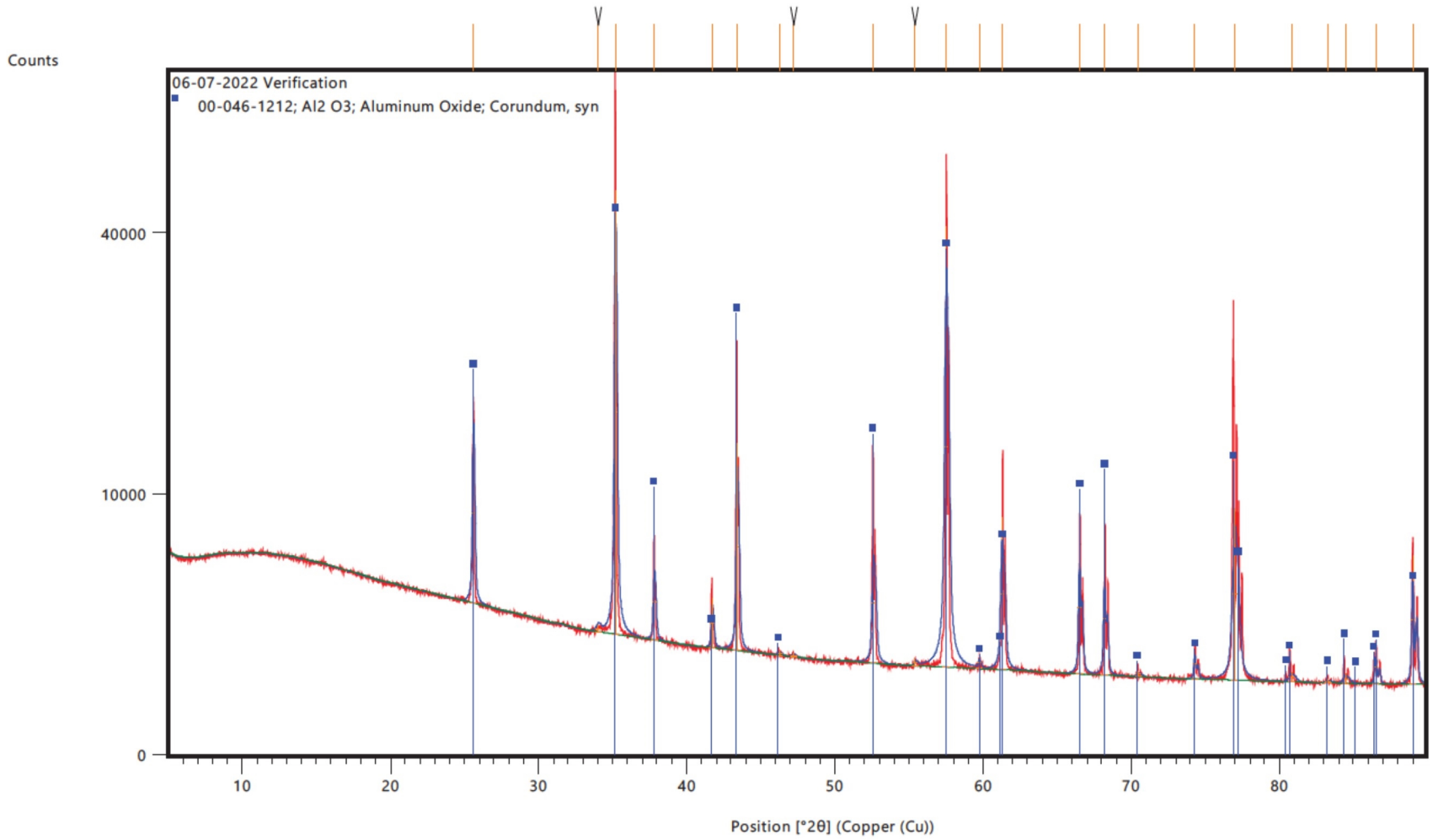
Ref.Code	Compound Name	Chem. Formula	Chem. Name	Mineral Name
01-089-8935	Silicon Oxide	Si O2		
00-036-0426	Calcium Magnesium Carbonate	Ca Mg (C O3)2		Dolomite
00-066-0867	Calcium Carbonate	Ca (C O3)		Calcite

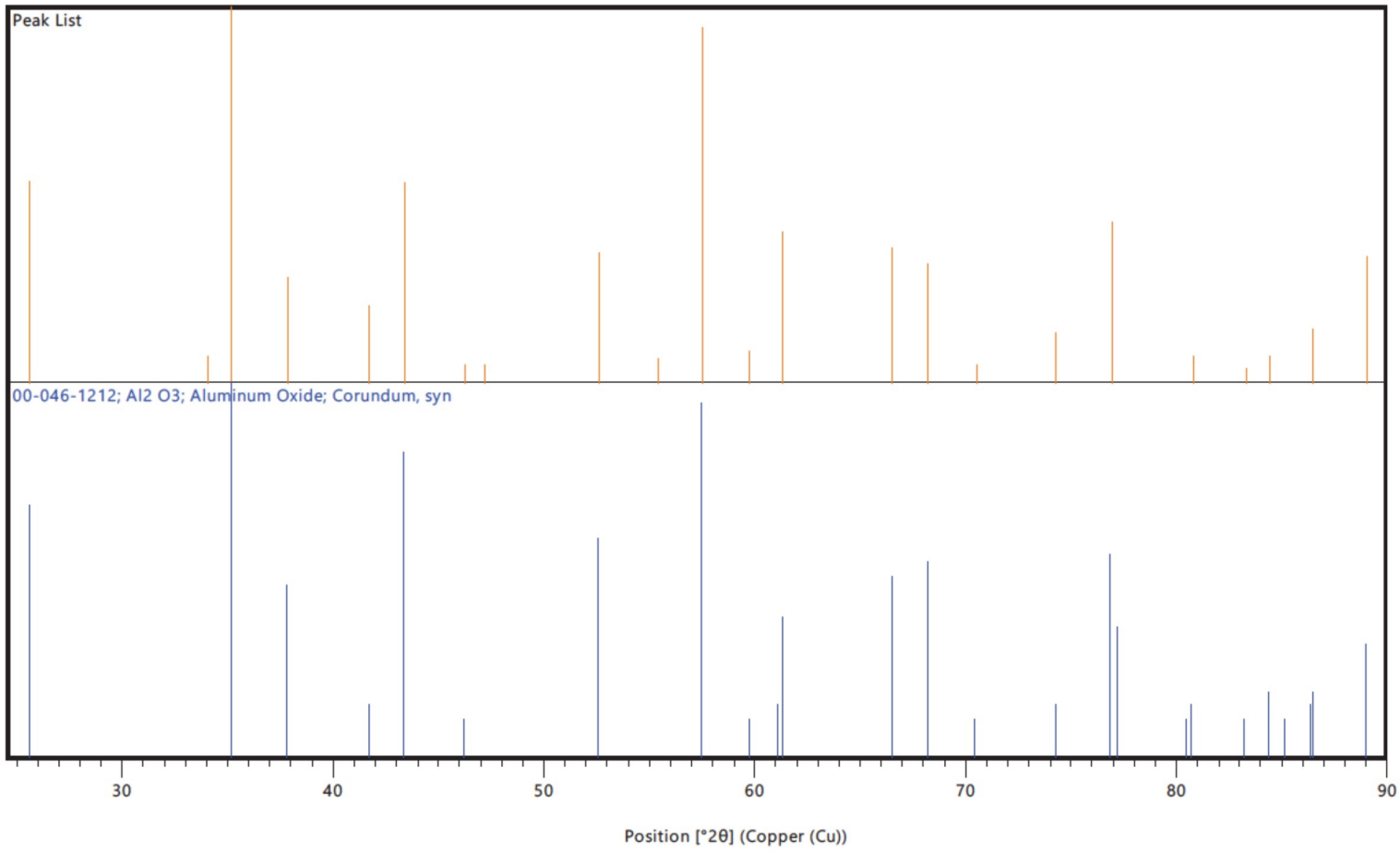

Counts
360000
160000
40000
0
40-50-10 silica-dolomite-calcite verification
Silicon Oxide 32.32(4) %
Dolomite 56.75(7) %
Calcite 10.93(2) %
32.3 %
10.9 %
56.8 %
20
30
40
50
60
70
80
Position [°2θ] (Copper (Cu))


Peak List
01-089-8935; Si O2; Silicon Oxide
00-036-0426; Ca Mg (C O3)2; Calcium Magnesium Carbonate; Dolomite
00-066-0867; Ca (C O3); Calcium Carbonate; Calcite
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Position [°2θ] (Copper (Cu))

File name	(b)(7)(E)
Measurement Start Date/Time	6/7/2022 6:25:03 AM
Operator	Lab_User
Start Position [°2θ]	5.0066
End Position [°2θ]	89.9876
Step Size [°2θ]	0.0130

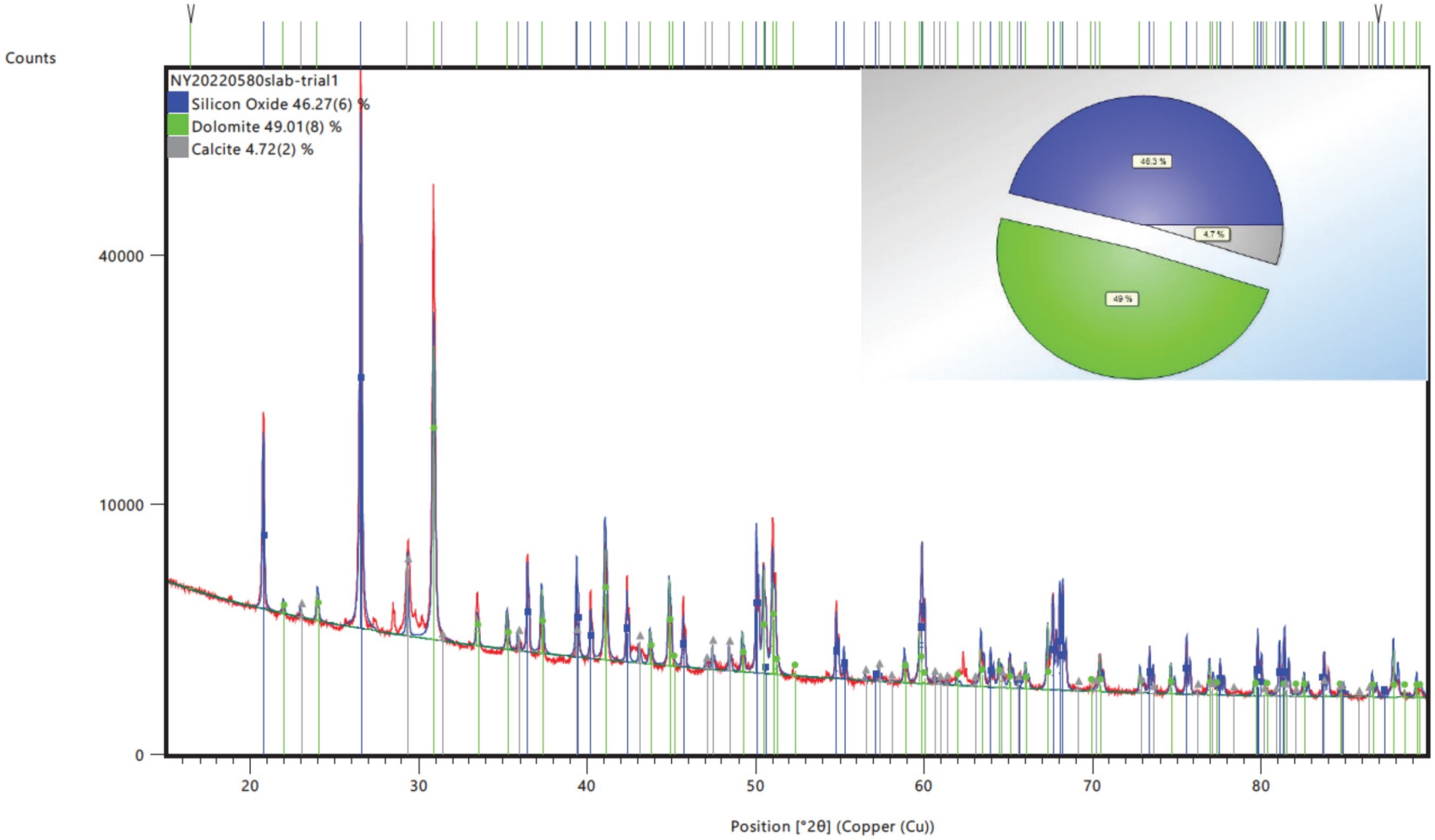
Ref.Code	Compound Name	Chem. Formula	Chem. Name	Mineral Name
00-046-1212	Aluminum Oxide	Al2 O3		Corundum, syn

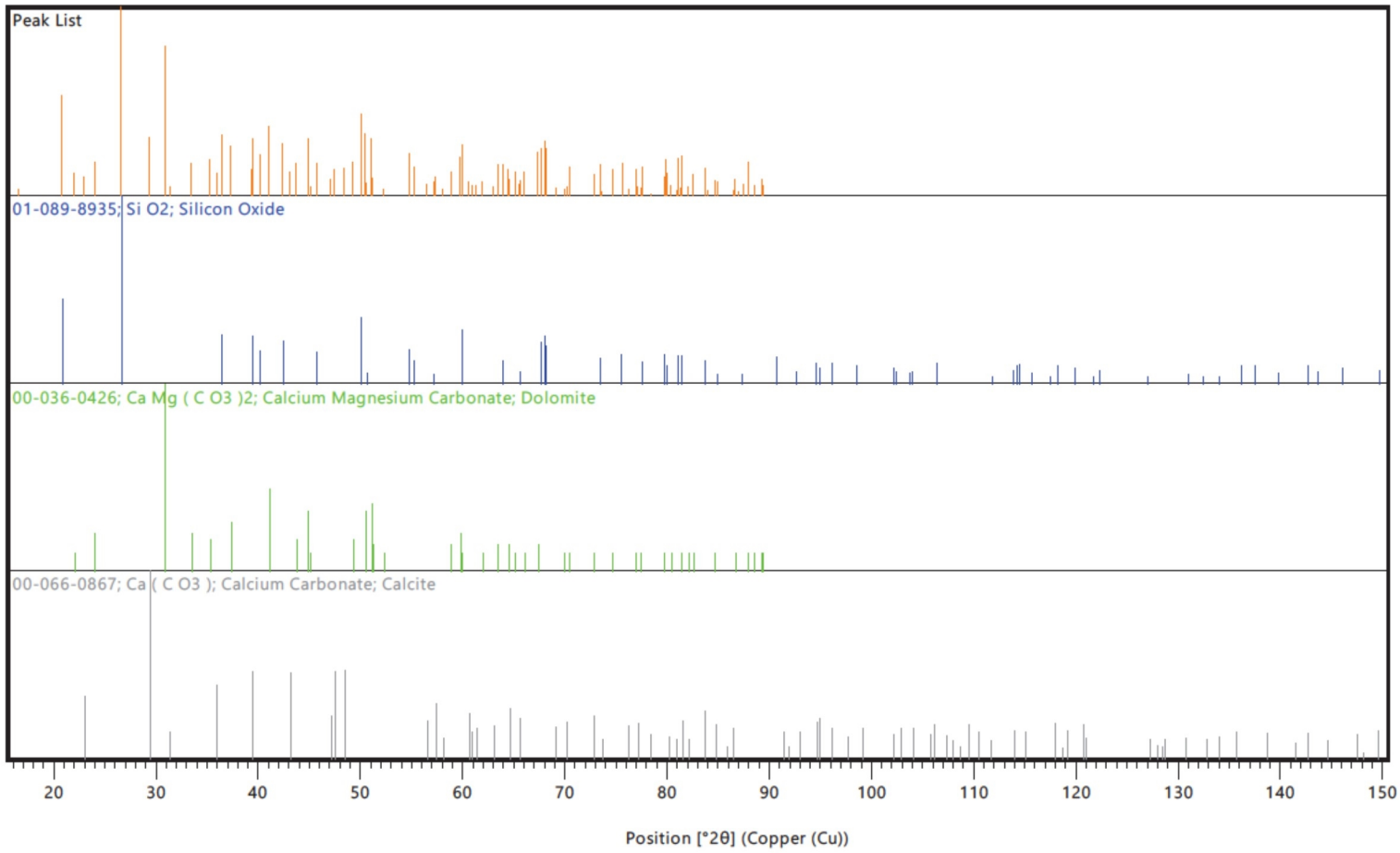

Counts
06-07-2022 Verification
00-046-1212; Al2 O3; Aluminum Oxide; Corundum, syn
40000
10000
0
10
20
30
40
50
60
70
80
Position [°2θ] (Copper (Cu))


Peak List
00-046-1212; Al2 O3; Aluminum Oxide; Corundum, syn
30
40
50
60
70
80
90
Position [°2θ] (Copper (Cu))

File name	(b)(7)(E)
Measurement Start Date/Time	6/7/2022 7:08:34 AM
Operator	Lab_User
Start Position [°2θ]	15.0066
End Position [°2θ]	89.9906
Step Size [°2θ]	0.0130

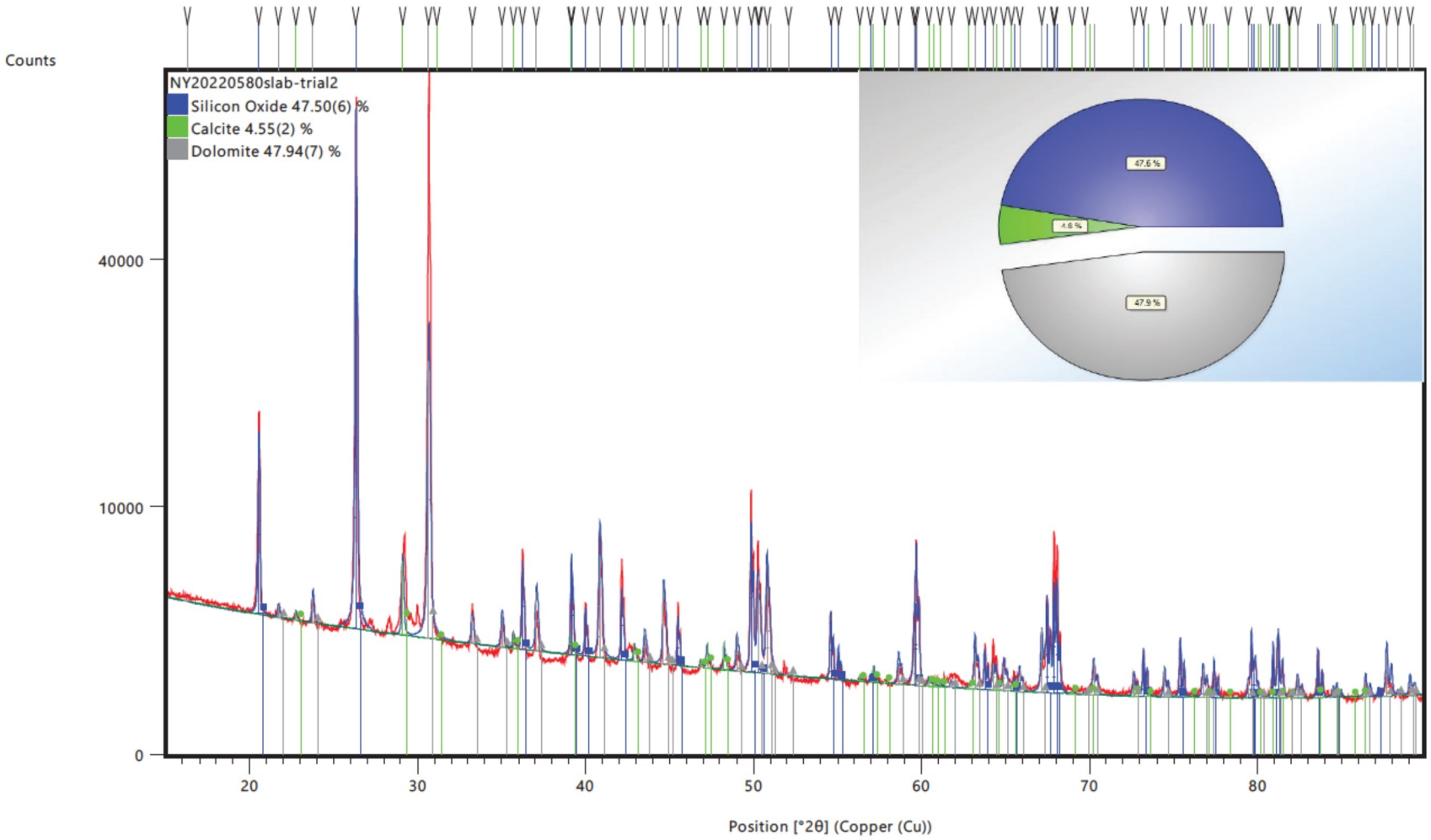
Ref.Code	Compound Name	Chem. Formula	Chem. Name	Mineral Name
01-089-8935	Silicon Oxide	Si O2		
00-036-0426	Calcium Magnesium Carbonate	Ca Mg (C O3)2		Dolomite
00-066-0867	Calcium Carbonate	Ca (C O3)		Calcite

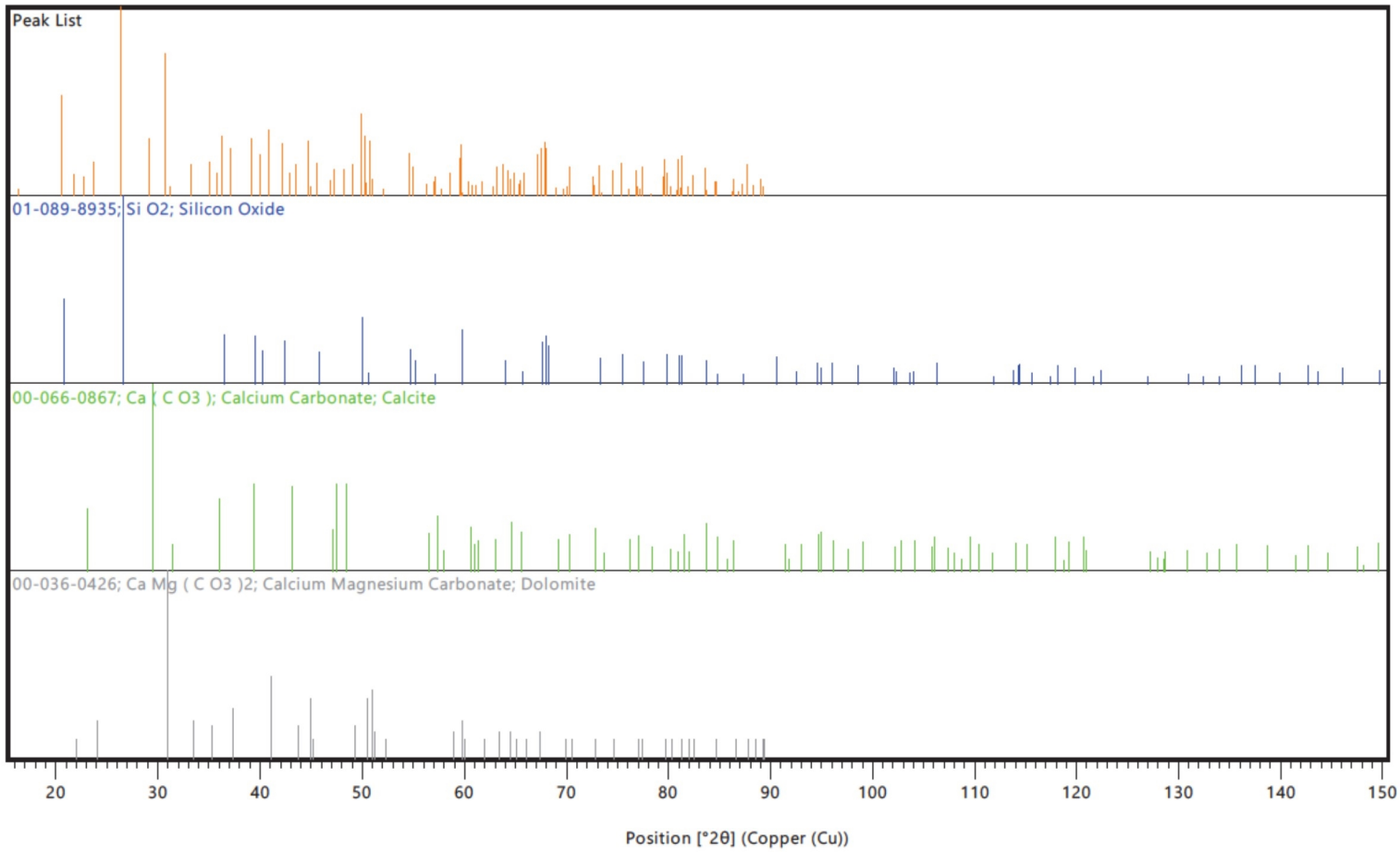

Counts
NY20220580slab-trial1
Silicon Oxide 46.27(6) %
Dolomite 49.01(8) %
Calcite 4.72(2) %
40000
10000
0
20
30
40
50
60
70
80
Position [°2θ] (Copper (Cu))
46.3 %
4.7 %
49 %


Peak List
01-089-8935; Si O2; Silicon Oxide
00-036-0426; Ca Mg (C O3)2; Calcium Magnesium Carbonate; Dolomite
00-066-0867; Ca (C O3); Calcium Carbonate; Calcite
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Position [°2θ] (Copper (Cu))

File name	(b)(7)(E)
Measurement Start Date/Time	6/7/2022 7:46:50 AM
Operator	Lab_User
Start Position [°2θ]	15.0066
End Position [°2θ]	89.9906
Step Size [°2θ]	0.0130

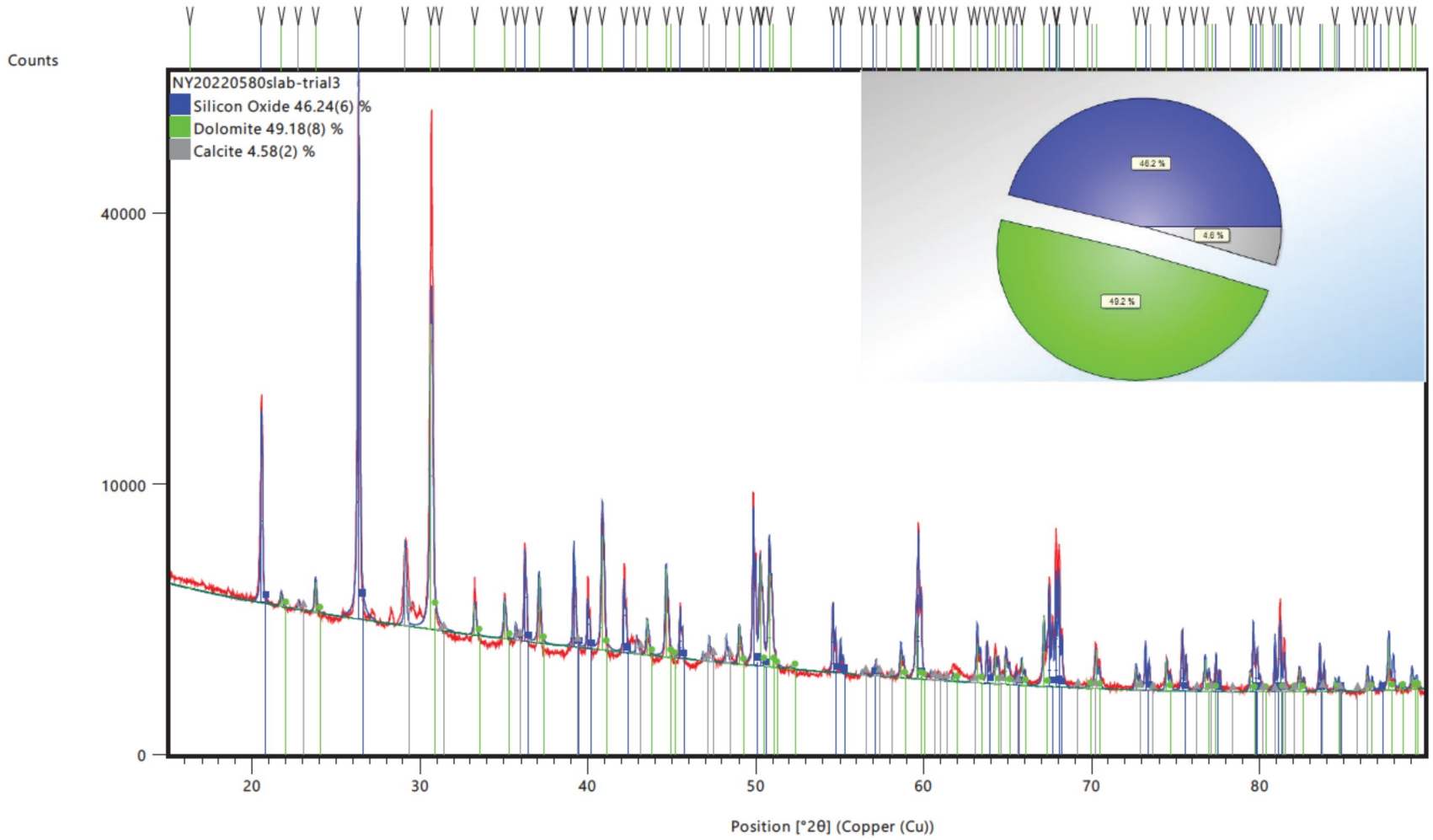
Ref.Code	Compound Name	Chem. Formula	Chem. Name	Mineral Name
01-089-8935	Silicon Oxide	Si O2		
00-066-0867	Calcium Carbonate	Ca (C O3)		Calcite
00-036-0426	Calcium Magnesium Carbonate	Ca Mg (C O3)2		Dolomite

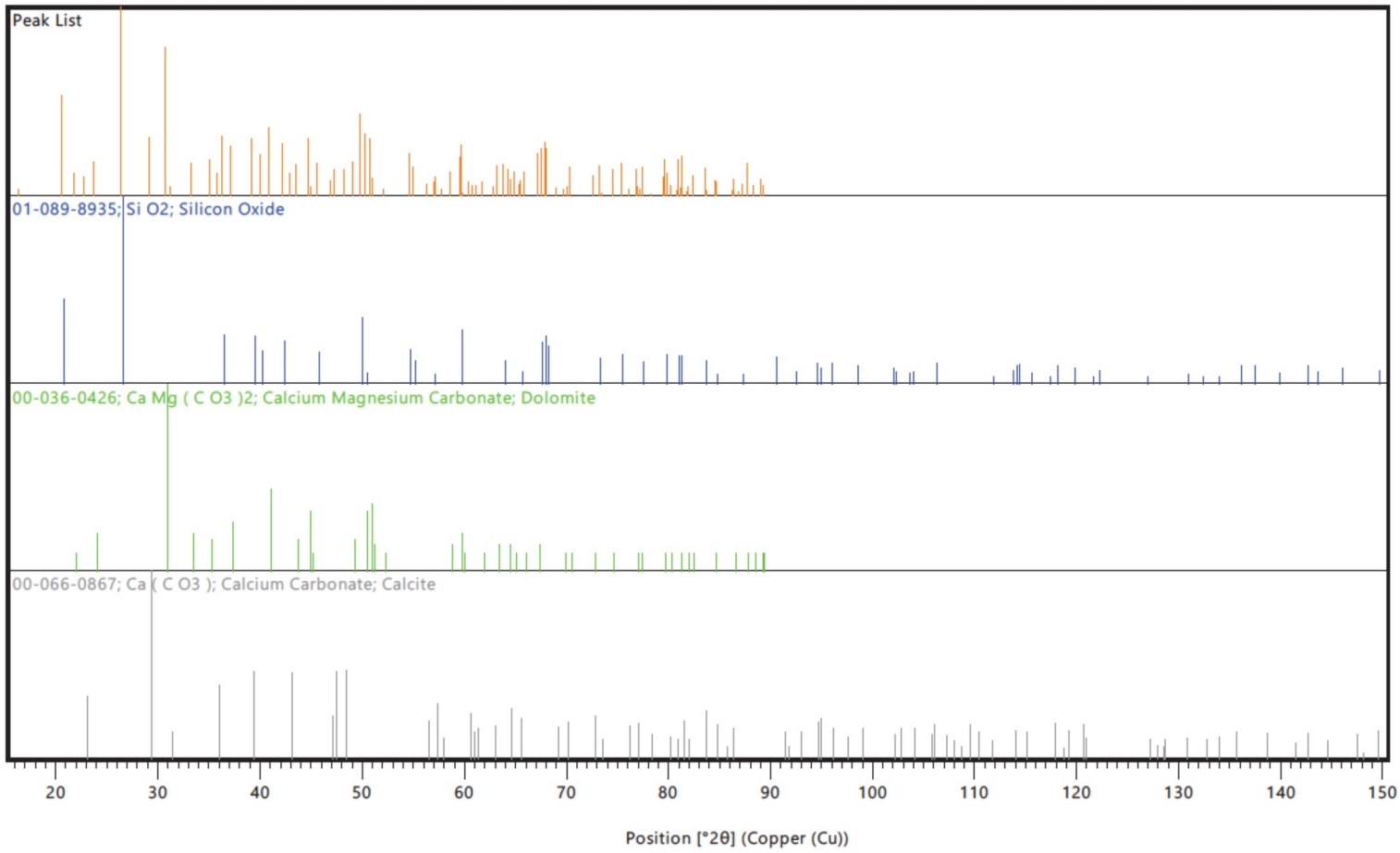

Counts
NY20220580slab-trial2
Silicon Oxide 47.50(6) %
Calcite 4.55(2) %
Dolomite 47.94(7) %
47.6 %
4.6 %
47.9 %
40000
10000
0
20
30
40
50
60
70
80
Position [°2θ] (Copper (Cu))


Peak List
01-089-8935; Si O2; Silicon Oxide
00-066-0867; Ca (C O3); Calcium Carbonate; Calcite
00-036-0426; Ca Mg (C O3)2; Calcium Magnesium Carbonate; Dolomite
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Position [°2θ] (Copper (Cu))

File name	(b)(7)(E)
Measurement Start Date/Time	6/7/2022 8:26:44 AM
Operator	Lab_User
Start Position [°2θ]	15.0066
End Position [°2θ]	89.9906
Step Size [°2θ]	0.0130

Ref.Code	Compound Name	Chem. Formula	Chem. Name	Mineral Name
01-089-8935	Silicon Oxide	Si O2		
00-036-0426	Calcium Magnesium Carbonate	Ca Mg (C O3)2		Dolomite
00-066-0867	Calcium Carbonate	Ca (C O3)		Calcite


Counts
NY20220580slab-trial3
Silicon Oxide 46.24(6) %
Dolomite 49.18(8) %
Calcite 4.58(2) %
40000
10000
0
20
30
40
50
60
70
80
Position [°2θ] (Copper (Cu))
46.2 %
4.6 %
49.2 %


Peak List
01-089-8935; Si O2; Silicon Oxide
00-036-0426; Ca Mg (C O3)2; Calcium Magnesium Carbonate; Dolomite
00-066-0867; Ca (C O3); Calcium Carbonate; Calcite
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Position [°2θ] (Copper (Cu))

40:50:10 Silica:Dolomite:Calcite			**40:50:10 Silica:Dolomite:Calcite**	
Weight of silica	0.8326		Weight of silica	0.8326
Weight of dolomite	1.0908		Weight of dolomite	1.0908
Weight of calcite	0.2049		Weight of calcite	0.2049
Total Weight	B2+B3+B4		Total Weight	2.1283
%Dolomite by weight	(B3/B5)*100		%Dolomite by weight	51.2521731
%Silica by weight	(B2/B5)*100		%Silica by weight	39.12042475
%Calcite by weight	100-B6-B7		%Calcite by weight	9.627402152
%Silica by Rietveld	32.32		%Silica by Rietveld	32.32
%Dolomite by Rietveld	56.75		%Dolomite by Rietveld	56.75
%Calcite by Rietveld	10.93		%Calcite by Rietveld	10.93
%Other by Rietveld	100-B11-B12-B13		%Other by Rietveld	0
Standard Deviation for dolomite	STDEV(B6,B12)		Standard Deviation for dolomite	3.887550686
Standard Deviation for silica	STDEV(B7,B11)		Standard Deviation for silica	4.808626457
Standard Deviation for calcite	STDEV(B8,B13)		Standard Deviation for calcite	0.921075772

Run	**1**	**2**	**3**	
%Silica by Rietveld	46.27	47.5	46.24	
%Dolomite by Rietveld	49.01	47.94	49.18	
%Calcite by Rietveld	4.72	4.55	4.58	
%Other by Rietveld	100-B2-B3-B4	100-C2-C3-C4	100-D2-D3-D4	
CORRECTED FOR ASH				
%Ash (average)	85.8	85.8	85.8	
%Volatile (average)	14.2	14.2	14.2	AVERAGE
%Silica	(B8*B2)/100	(C8*C2)/100	(D8*D2)/100	AVERAGE(B10:D10)
%Dolomite	(B8*B3)/100	(C8*C3)/100	(D8*D3)/100	AVERAGE(B11:D11)
%Calcite	(B8*B4)/100	(C8*C4)/100	(D8*D4)/100	AVERAGE(B12:D12)
%Other	(B8*B5)/100	(C8*C5)/100	(D8*D5)/100	AVERAGE(B13:D13)
Run	**1**	**2**	**3**	
%Silica by Rietveld	46.27	47.5	46.24	
%Dolomite by Rietveld	49.01	47.94	49.18	
%Calcite by Rietveld	4.72	4.55	4.58	
%Other by Rietveld	0	0.01	0	
CORRECTED FOR ASH				
Ash Content (average)	85.8	85.8	85.8	
%Volatile (average)	14.2	14.2	14.2	AVERAGE
%Silica	39.69966	40.755	39.67392	40.04286
%Dolomite	42.05058	41.13252	42.19644	41.79318
%Calcite	4.04976	3.9039	3.92964	3.9611
%Other	0	0.00858	0	0.00286