

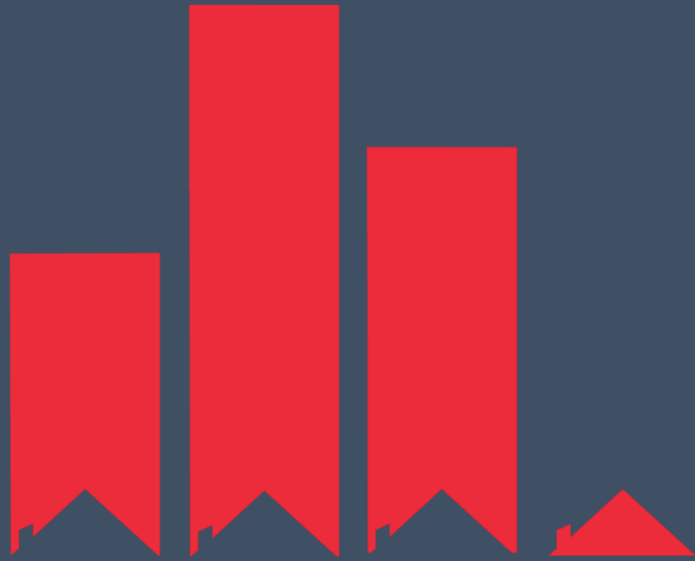
FLY ASH

ASTM C-618



NUKSHI Group Of Companies





NUKSHI OVERVIEW



Contact Information

Mr, Farid Yousaf (Chairman)

NUKSHI STAR SLAG AND FLY ASH

Head Office. 70/A B-Block Small Industrial Estate G-T Road, Rathrian, Jhelum.

<tel:+92315522467> | <tel:+923005522467>

9nukshi@gmail.com

ABOUT US

NUKSHI FLY ASH

NUKSHI FLY ASH was established in 2012.

NUKSHI Fly Ash is certified company, and a name of trust in the production of high quality Fly Ash from Nukshi's manufacturing unit. Nukshi is the supplier of high quality Fly Ash. The quality of pure Slag is according to the ASTM Standard C-618.

Clients / Project



➤ China Machinery Engineering Corporation (TEC-China)

- Civil Work to be done by Transtech Engineering Corporation (TEC) at site of 1263MW Punjab Power Plant, Jhang, Punjab, Pakistan

➤ M/s Sino Hydro NEL JV (China)

- Rehabilitation & Upgrading of Pakpattan Canal, Khadir Branch.
- Islam Link project at Burewala Site.
- Rehabilitation & Upgrading of Sulemanki Headwork.

➤ Power Construction Corporate of China

- 1230 MW Haveli Bahaudr Shah Project, Jhang (Punjab)

➤ Nishan Engineers (Pakistan)

- Rehabilitation of Trimmu barrage Project, District Jhang

➤ HEI – HRL Joint Venture (Pakistan)

- 1223 MW RLNG NGCCPP, Balloki Project, (Punjab)

Map of Few our Clientele



China Machinery Engineering Corporation (TEC)



Civil Work to be done by Transtech Engineering Corporation (TEC) at the site of 1263MW Punjab Power Plant, Jhang, Punjab, Pakistan



M/s Sino Hydro NEL JV



- Rehabilitation & Upgrading of Pakpattan Canal, Khadir Branch.
- Islam Link project at Burewala Site.
- Rehabilitation & Upgrading of Sulemanki Headwork.



Nishan Engineers



- Rehabilitation & Upgrading of Pakpattan Canal, Khadir Branch.
- Islam Link project at Burewala Site.
- Rehabilitation & Upgrading of Sulemanki Headwork.



Power Construction Corporate of China



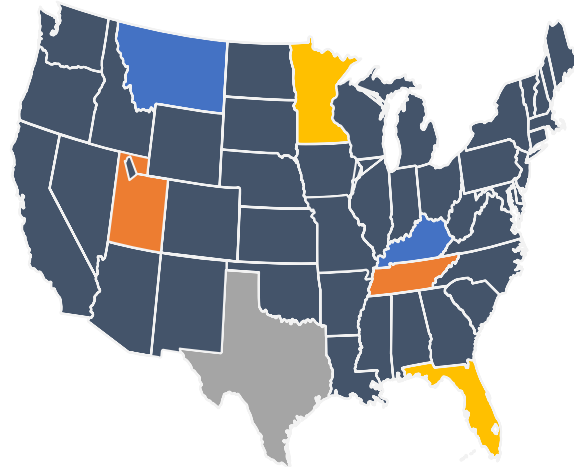
1230 MW Haveli Bahaudr Shah Project, Jhang (Punjab)



**HEI – HRL
Joint Venture**



1223 MW RLNG NGCCPP, Balloki Project, (Punjab)



Quality Management System

ISO 9001:2015

SZUTEST

CERTIFICATE

Quality Management System
CERTIFICATE NO: SZT.2020.SB.2.0.145



Nukshi Star Slag & Fly Ash
70/A, B-Block, Small Industrial Estate, G.T Road, Rathrian, Jhelum, Punjab - Pakistan

ISO 9001:2015

Distributor of Slag, Cement & Fly Ash

EA Code: 29

Szutest confirms with the certificate details given above, that the organization has an appropriate management system complying with the relevant standard principles. This certificate is valid until the date of certification period expiry date only provided that the management system is found successful as a result of surveillance audits.

| | |
|--------------------|------------|
| First Issue Date | 27.07.2020 |
| Issue Date | 27.07.2020 |
| Expiry Date | 26.07.2021 |
| Period Finish Date | 26.07.2023 |



Manager of System Certification

This certificate can be examined by scanning the square codes on the certificate with a mobile device or by verifying the numbers on the square code from the <http://public.szutest.com.tr>

FR.SB.74 R:6

SZUTEST UYGUNLUK DEĞERLENDİRME A.Ş.
Tatlısu Mahallesi, Akif İnan Sk. No:1 Ümraniye 34774 İSTANBUL / TÜRKİYE
Szutest.com.tr



Environment Management System

ISO 14001:2015

SZUTEST

CERTIFICATE

Environment Management System
CERTIFICATE NO: SZT.2020.SB.2.1.034

Nukshi Star Slag & Fly Ash
70/A, B-Block, Small Industrial Estate, G.T Road, Rathrian, Jhelum, Punjab - Pakistan

ISO 14001:2015

Distributor of Slag, Cement & Fly Ash

EA Code: 29

Szutest confirms with the certificate details given above, that the organization has an appropriate management system complying with the relevant standard principles. This certificate is valid until the date of certification period expiry date only provided that the management system is found successful as a result of surveillance audits.

| | |
|--------------------|------------|
| First Issue Date | 27.07.2020 |
| Issue Date | 27.07.2020 |
| Expiry Date | 26.07.2021 |
| Period Finish Date | 26.07.2023 |

IAF MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT
IAS ACCREDITED Management System Certification Body MSCB-114

Manager of System Certification

This certificate can be examined by scanning the square codes on the certificate or via a mobile device or by verifying the numbers on the square code from the <http://public.szutest.com.tr>.

FR.SB.74 R:6

SZUTEST UYGUNLUK DEĞERLENDİRME A.Ş.
Tatlısu Mahallesi, AKF İnönü Sk. No:1 Umranıye 34774 İSTANBUL / TÜRKİYE
Szutest.com.tr



Occupational Health and Safety Management System

OHSAS 18001:2007

SZUTEST

CERTIFICATE

Occupational Health and Safety Management System
CERTIFICATE NO: SZT.2020.SB.2.3.019

Nukshi Star Slag & Fly Ash
70/A, B-Block, Small Industrial Estate, G.T Road, Rathrian, Jhelum, Punjab - Pakistan

OHSAS 18001:2007

Distributor of Slag, Cement & Fly Ash

EA Code: 29

Szutest confirms with the certificate details given above, that the organization has an appropriate management system complying with the relevant standard principles. This certificate is valid until the date of certification period expiry date only provided that the management system is found successful as a result of surveillance audits.

| | |
|--------------------|------------|
| First Issue Date | 27.07.2020 |
| Issue Date | 27.07.2020 |
| Expiry Date | 26.07.2021 |
| Period Finish Date | 12.09.2021 |

IAS
ACCREDITED
Management System
Certification Body
MSCB-114

Manager of System Certification

This certificate can be examined by scanning the square codes on the certificate with a mobile device or by verifying the numbers on the square code from the <http://pub.szutest.com.tr>.

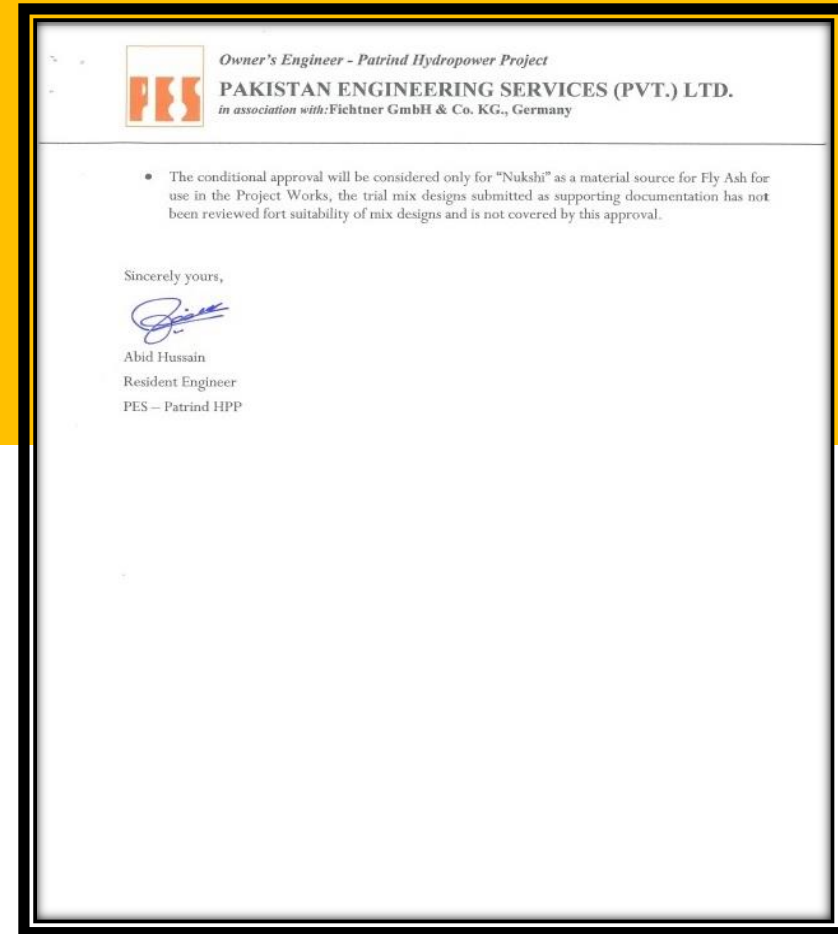
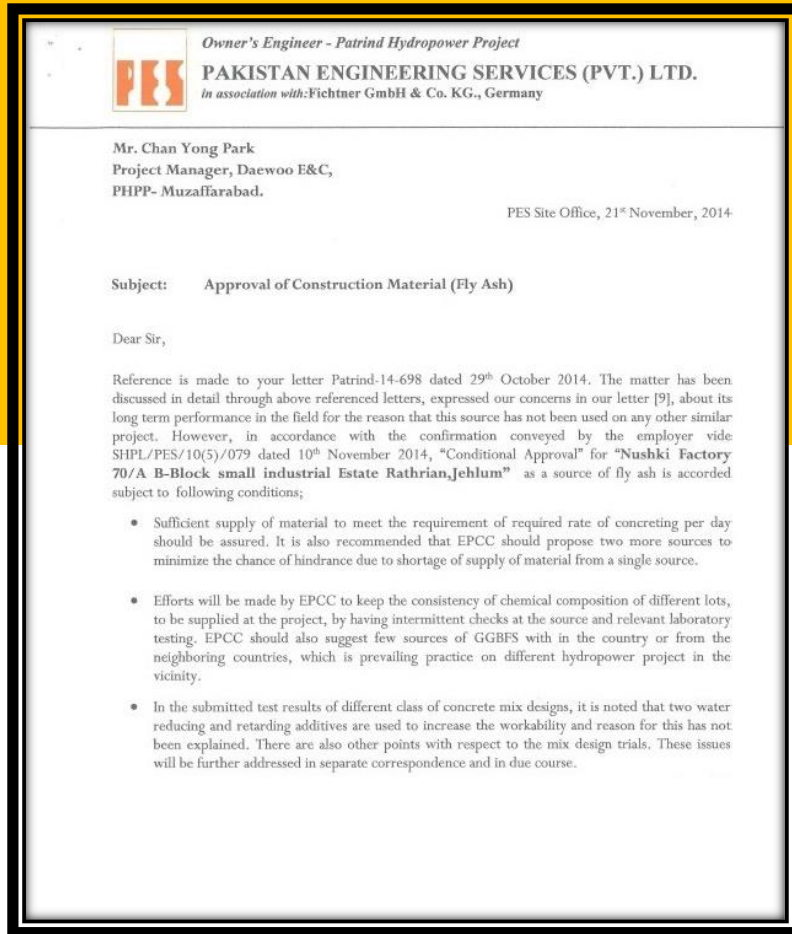
FR.SB.74 R:6

SZUTEST UYGUNLUK DEĞERLENDİRME A.Ş.
Tatlısu Mahallesi, Akşifinlar SK, No:1 Umranıye 34774 İSTANBUL / TÜRKİYE
Szutest.com.tr




NUKSHI GROUP OF COMPANIES

Recommendations and Approval of Fly Ash Material by Pakistan Engineering Services



NUKSHI GROUP OF COMPANIES

Feedback of our Clients



SINOHYDRO--NISHAN Joint Venture
Dated May 3, 2018

To Whom It May Concern

This is to certify that M/s Nukshi is supplying us Fly Ash for works of **Rehabilitation and Upgrading of Pakpattan Canal Khadir Branch & Pakistan Islam Link**.

M/s Nukshi during this turnaround deserves great appreciation by his excellent and professional participation and prompt reaction to our requirement, and we never face any problem on quality of Fly Ash, which enable us to execute concrete activities smoothly and on time.

We recommend M/s Nukshi to continue for truly professional presence in our future project.


Shi Bo
Project Manager,
SINOHYDRO-NEL J.V.


Habib Rafiq (Pvt.) Limited
PROJECT MANAGEMENT DIVISION (PMD)
37 Block-II, Gali-Band-e-Nawab, Lahore-Pakistan
Tel: (+92-42) 35711811, 35711716
Fax: (+92-42) 35762274, 35797542, 35710890
E-mail: info@habibrafiq.com - URL: www.habibrafiq.com

04th June, 2018

TO WHOM IT MAY CONCERN

This is to certify that we are dealing with Nukshi Star Slag and Fly Ash for the supplying of Fly Ash for our project of **1223 MW RLNG CCPP Balloki Power Plant Project Pattoki, Punjab**.

Ever since we have engaged you have provided the highest quality products with better customer services. Deliveries were often earlier than we expected which have resulted in completing our project well in time.

On behalf of my company, I would like to acknowledge and appreciate your services and hope that you will continue with your excellent services in many years to come.

We wish you our best of luck & success and look forward to many more to come.

This certificate has been issued upon request of the vendor for reference purpose.

Thank you once again for your contribution to this industry.

Sincerely,

Rana Muhammad
Senior Manager (Purchasing)
Habib Rafiq Pvt Ltd.




Nishan Engineers (Pvt) Ltd.
CONTRACTORS ENGINEERS DESIGNERS

TO WHOM IT MAY CONCERN

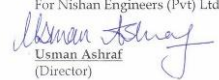
Date: 04th June, 2018

It is privilege to acknowledge the efforts of Nukshi Star Slag and Fly Ash who is involved for the supplying of Fly Ash for main works of **Rehabilitation & Upgrading of Canal, Khadir Branch, Pakpattan Islam Link Site, Burewala Site Rehabilitation & Upgrading of Sulemanki Headwork**.

Nukshi Star Slag and Fly Ash during this turnaround deserve great appreciation by putting excellent and professional participation and prompt reaction to our requirements, and we never face any problem on quality of Fly Ash. We sincerely appreciate your role in the success. We wish that you would keep good work in future too sure also we recommended for our future projects.

The result of his thesis works seems to be useful to our company and we are going to implement them. We are highly benefited by his work.

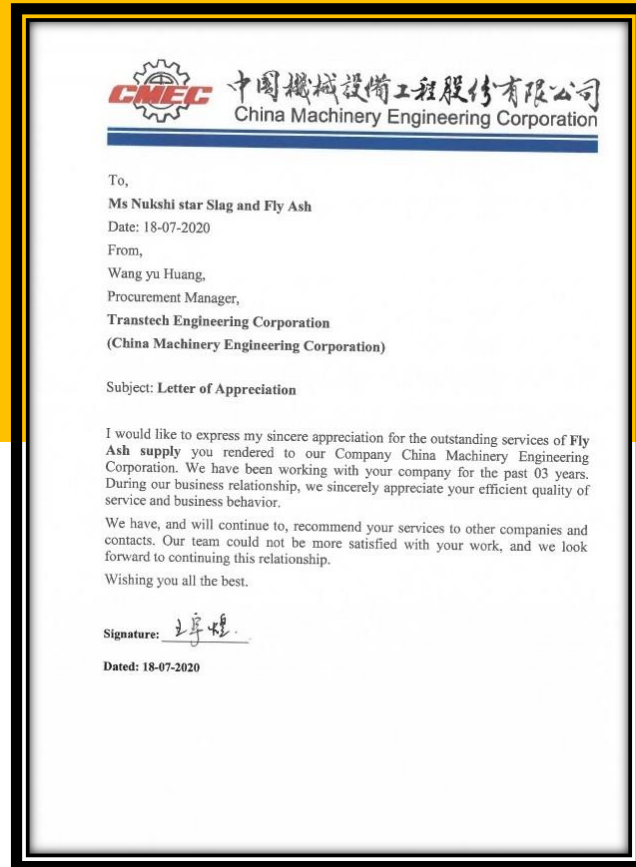
We wish him every success for his future life.

Yours truly,
For Nishan Engineers (Pvt) Ltd.

Usman Ashraf
(Director)



NUKSHI GROUP OF COMPANIES

Feedback of our Clients



Company Description

Quality is our First priority

WELCOME TO COMPANY

NUKSHI Fly Ash was established in 2012 and it was fully operational by producing/providing superior Ordinary Fly Ash was introduced.

Fly Ash is the most widely used supplementary cementations material in concrete, is a byproduct of the combustion of pulverized coal in electric power generating plants. Fly Ash is primarily silicate glass containing silica, alumina, iron, and calcium.

We collect the Fly Ash from various sources and process it to obtain the required properties as per ASTM C 618 (AASHTO M 295) Class F which is commonly used as pozzolanic admixture for general purpose concrete as well as high strength concrete.

Brief description of Fly Ash C-618.

1. Classification of Fly Ash
2. Nature of Fly Ash
3. Properties of Fly Ash
4. Water Requirements & Heat of Hydration
5. Workability
6. Finishing and Curing
7. Economical Advantages
8. Environmental Advantages



CLASSIFICATION OF FLY ASH

CLASS F

This class of Fly Ash is normally produced from burning of superior quality coal i.e. Anthracite or Bituminous, that meets the applicable requirements for this class as given herein. This class of Fly Ash has pozzolanic properties.

NOTE: Some Class C Fly Ashes may contain lime contents higher than 10 %.



Nature of Fly Ash

Fly Ash is a pozzolanic material. It is a finely-divided amorphous, aluminosilicate with varying amounts of calcium, which when mixed with Portland cement and water, reacts with the calcium hydroxide released by the hydration of Portland cement to produce various calcium-silicate hydrates

(C-S-H) and calcium-aluminate hydrates.

Some Fly Ashes with higher amounts of calcium will also display Cementitious behavior by reacting with water to produce hydrates in the absence of a source of calcium hydroxide.

These pozzolanic reactions are beneficial to the concrete in the way that they increase the quantity of the Cementitious binder phase (C-S-H) and, to a lesser extent, calcium-aluminate hydrates, improving the long term strength and reducing the permeability of the concrete. Both of these mechanisms enhance the durability of the concrete.

Properties of Fly Ash

The relative density (specific gravity) of our Fly Ash generally ranges between 2.3 and 2.8 and the color is generally gray or tan.

Often used at dosages of 20% to 30% by mass of cementations material.

Generally low in lime, usually under 15 percent, and contains a greater combination of silica, alumina and iron (greater than 70 percent).

Most effectively moderates heat gain during concrete curing and is therefore considered an ideal cementations material in mass concrete and high strength mixes. For the same reason, Class F is the solution to a wide range of summer concreting problems.

Provides sulfide and sulfate resistance equal or superior to Type V cement.

Class F is often recommended for use where concrete may be exposed to sulfate ions in soil and ground water.

Water Requirements & Heat of Hydration

Concrete mixtures containing Fly Ash generally require less water for a given slump than concrete containing only Portland cement. Higher dosages can result in greater water reduction. Fly Ash reduces water demand in a manner similar to liquid chemical water reducers.

Fly Ash has lower heat of hydration than Portland cement; consequently its use will reduce the amount of heat built up in a concrete structure. This reduction in temperature rise is especially beneficial when used for massive structures.

Workability

The use of good quality Fly Ash with a high fineness and low carbon content reduces the water demand of concrete.

Use of Fly Ash permit the concrete to be produced at a lower water content when compared to a Portland cement concrete of the same workability.

A gross approximation is that each 10% of Fly Ash allow a water reduction of at least 3%.

A well-proportioned Fly Ash concrete mixture shall have improved workability when compared with a Portland cement concrete of the same slump.

Finishing and Curing

The use of Fly Ash can lead to some retardation of the setting time, which means that finishing operations may be delayed.

At normal temperatures, the rate of the pozzolanic reaction is slower than the rate of cement hydration, and Fly Ash concrete needs to be properly cured if the full benefits of its incorporation are to be realized. When high levels / percentage of Fly Ash are used, it is generally recommended that the concrete should be water cured for a minimum period of 7 days.

Economical Advantages

It is a by product and so its cheaply available.

Its use however highly reduces the cost of Cementitious material and hence profit margin of constructors can be increased.

With high replacements more properties advantages can be achieved.

Environmental Advantages

Diverts material from waste stream.

Reduces the energy investment as well as the cost in processing raw materials.

Conserves raw materials.

Reduces pollution.

Quality Control System

Why our customers prefer our products?

Our excellent quality control system ensures good quality of products.



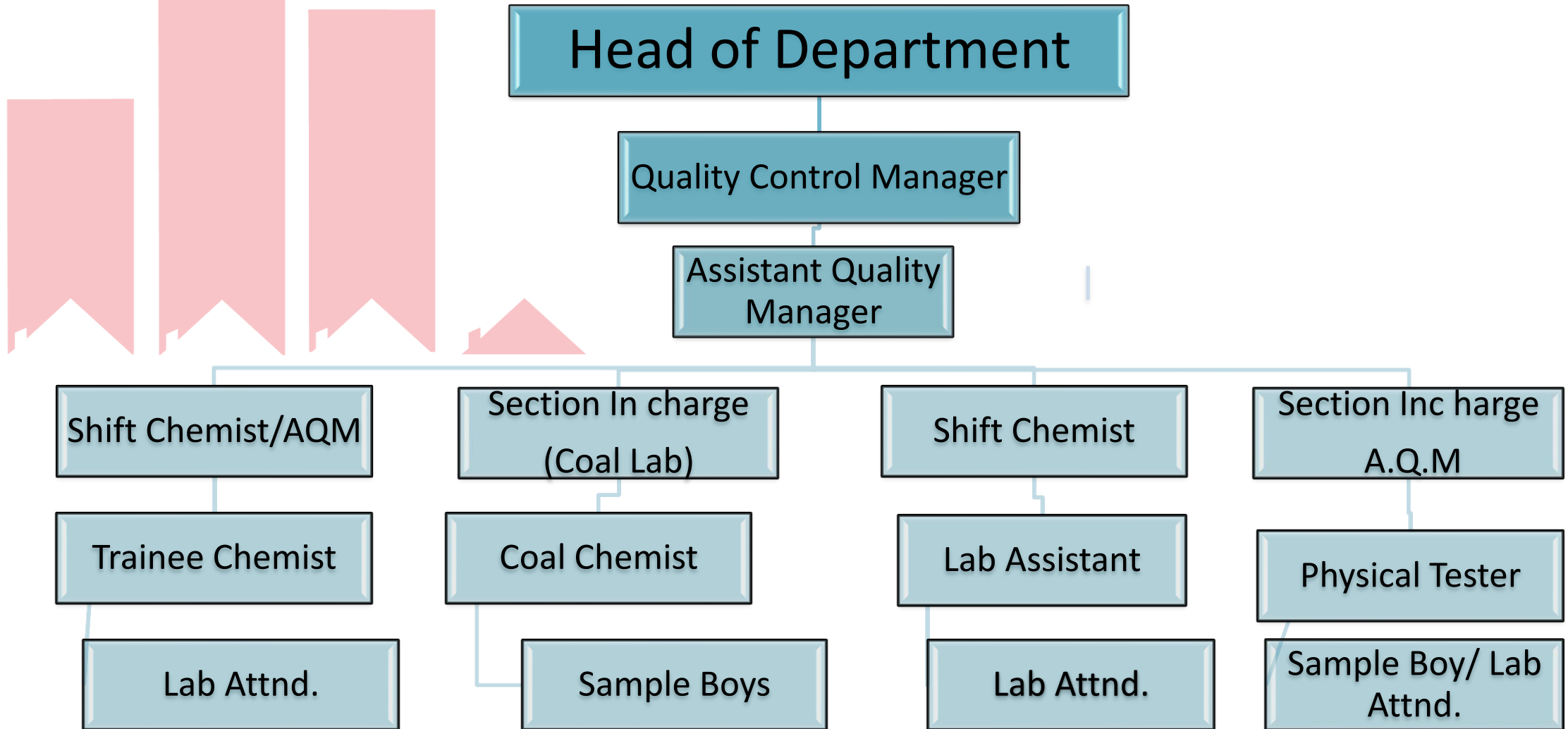
State of the art fully equipped quality control laboratory ensures round the clock supervision and control of all processes of Fly Ash manufacturing.



X-Ray analyzer assures quality control at every stage of Fly Ash production.




QUALITY CONTROL MANAGEMENT SYSTEM



TEST REPORTS

NUKSHI TEST REPORTS



Date: -26th March, 2020

TEST REPORT
FLY ASH ASTM C-618

| CHEMICAL REQUIREMENT | UNIT | RESULTS | CLASS F | CLASS C |
|---|------|---------|---------------|---------------|
| Moisture | % | 01.54 | MAX 3.00 | MAX 3.00 |
| WI (Loss on ignition) | % | 5.88 | MAX 6.00 | MAX 6.00 |
| SiO ₂ (Silica) | % | 48.07 | Not Specified | Not Specified |
| Al ₂ O ₃ (Alumina) | % | 37.10 | Not Specified | Not Specified |
| Fe ₂ O ₃ (Iron Oxide) | % | 0.95 | Not Specified | Not Specified |
| CaO (Lime) | % | 5.90 | Not Specified | Not Specified |
| MgO (Magnesia) | % | 0.94 | Not Specified | Not Specified |
| S03 (Sulphuric Anhydride) | % | 3.50 | MAX 5.00 | MAX 5.00 |

ASH ACTIVITY INDEX


| Days | % | 75.00 | 75.00 |
|---------|--------|-------|-------|
| 7-DAYS | 93.95 | 75.00 | 75.00 |
| 28-Days | 103.05 | 75.00 | 75.00 |

RESIDUE

| RESIDUE (325#) | % | 34.00 | 34.00 |
|----------------|-------|-------|-------|
| RESIDUE (325#) | 25.10 | 34.00 | 34.00 |

NOTE: (ASTM C-618)

- SiO₂+Al₂O₃+Fe₂O₃ Should be Min 70% for Class F and 50% for Class C
- LOI up to 12% may be approved on acceptable performance or when Lab results are made available.

Quality Control Manager 

Head Office: -70/A B-Block Small Industrial Estate G T Road, Rathrian, Jhelum E-mail: 9nukski@gmail.com



Date: -5th September, 2019

TEST REPORT
FLY ASH ASTM C-618

| CHEMICAL REQUIREMENT | UNIT | RESULTS | CLASS F | CLASS C |
|---|------|---------|---------------|---------------|
| Moisture | % | 1.31 | MAX 3.00 | MAX 3.00 |
| WI (Loss on ignition) | % | 5.50 | MAX 6.00 | MAX 6.00 |
| SiO ₂ (Silica) | % | 49.55 | Not Specified | Not Specified |
| Al ₂ O ₃ (Alumina) | % | 33.55 | Not Specified | Not Specified |
| Fe ₂ O ₃ (Iron Oxide) | % | 0.95 | Not Specified | Not Specified |
| CaO (Lime) | % | 5.44 | Not Specified | Not Specified |
| MgO (Magnesia) | % | 0.60 | Not Specified | Not Specified |
| S03 (Sulphuric Anhydride) | % | 3.20 | MAX 5.00 | MAX 5.00 |

ASH ACTIVITY INDEX

| Days | % | 75.00 | 75.00 |
|---------|--------|-------|-------|
| 7-DAYS | 87.45 | 75.00 | 75.00 |
| 28-Days | 104.30 | 75.00 | 75.00 |

RESIDUE


| RESIDUE (325#) | % | 34.00 | 34.00 |
|----------------|-------|-------|-------|
| RESIDUE (325#) | 24.91 | 34.00 | 34.00 |

NOTE: (ASTM C-618)

- SiO₂+Al₂O₃+Fe₂O₃ Should be Min 70% for Class F and 50% for Class C
- LOI up to 12% may be approved on acceptable performance or when Lab results are made available.

Quality Control Manager 

Head Office: -70/A B-Block Small Industrial Estate G T Road, Rathrian, Jhelum E-mail: 9nukski@gmail.com



Date: -27th April, 2018

TEST REPORT
FLY ASH ASTM C-618
SAMPLE NO-068

| CHEMICAL REQUIREMENT | UNIT | RESULTS | CLASS F | CLASS C |
|---|------|---------|---------------|---------------|
| Moisture | % | 1.22 | MAX 3.00 | MAX 3.00 |
| WI (Loss on ignition) | % | 5.35 | MAX 6.00 | MAX 6.00 |
| SiO ₂ (Silica) | % | 49.55 | Not Specified | Not Specified |
| Al ₂ O ₃ (Alumina) | % | 33.95 | Not Specified | Not Specified |
| Fe ₂ O ₃ (Iron Oxide) | % | 0.95 | Not Specified | Not Specified |
| CaO (Lime) | % | 5.45 | Not Specified | Not Specified |
| MgO (Magnesia) | % | 0.60 | Not Specified | Not Specified |
| S03 (Sulphuric Anhydride) | % | 3.20 | MAX 5.00 | MAX 5.00 |

ASH ACTIVITY INDEX


| Days | % | 75.00 | 75.00 |
|---------|--------|-------|-------|
| 7-DAYS | 87.25 | 75.00 | 75.00 |
| 28-Days | 101.75 | 75.00 | 75.00 |

RESIDUE

| RESIDUE (325#) | % | 34.00 | 34.00 |
|----------------|-------|-------|-------|
| RESIDUE (325#) | 24.90 | 34.00 | 34.00 |

NOTE: (ASTM C-618)

- SiO₂+Al₂O₃+Fe₂O₃ Should be Min 70% for Class F and 50% for Class C
- LOI up to 12% may be approved on acceptable performance or when Lab results are made available.



Quality Control Manager 

Head Office: -70/A B-Block Small Industrial Estate G T Road, Rathrian, Jhelum E-mail: 9nukski@gmail.com



TEST REPORTS

THIRD LABORATORY REPORTS

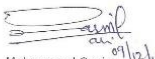
 


M/S NUKSHI
Ref. No. NUK-CRDI-16 dated December 01, 2014
FLY ASH SAMPLE No.15
(Manufacture By M/S NUKSHI)

WORK ORDER NO.3873



| CHEMICAL REQUIREMENTS | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|---------------------------|------|---------|---------------|---------------|---------------|
| Moisture | % | NIL | MAX 3.00 | MAX 3.00 | MAX 3.00 |
| LOI (Loss on ignition) | % | 5.87 | MAX 10.00 | MAX 6.00* | MAX 6.00 |
| SiO2 (Silica) | % | 50.10 | Not Specified | Not Specified | Not Specified |
| AL2O3 (Alumina) | % | 33.98 | Not Specified | Not Specified | Not Specified |
| Fe2O3 (Iron Oxide) | % | 0.42 | Not Specified | Not Specified | Not Specified |
| CaO (Lime) | % | 4.23 | Not Specified | Not Specified | Not Specified |
| MgO (Magnesia) | % | 2.10 | Not Specified | Not Specified | Not Specified |
| SO3 (Sulphuric Anhydride) | % | 2.44 | MAX 4.00 | MAX 5.00 | MAX 5.00 |

NOTE: (ASTM C-618)
SiO2+Al2O3+Fe2O3 Should be MIN 70% for Class N&F and 50% for Class C.
* LOI up to 12% may be approved on acceptable performance or when Lab results are made available.


Muhammad Qasim
Manager (CR&D)



Cement Research and Development Institute
Ministry of Industries and Production
State Cement Corporation Building, Kot Lakhpat, Lahore 54770, Pakistan
Tel: (+92)-42-111-000-143 Fax: (+92)-42-35121658, 35145792 www.tusdec.org.pk
A company set up under Section 42 of the Companies Ordinance, 1984 having share capital

M/S NUKSHI
Ref. No. NUK-CRDI-15 dated September 13, 2014
NUKSHI FLY ASH SAMPLE No.12
Sample jointly collected by M/S Daewoo E & C Representative
Patind Hydro Power Project

WORK ORDER NO.3768-69

| CHEMICAL REQUIREMENTS | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|---------------------------|------|---------|---------------|---------------|---------------|
| Moisture | % | 1.35 | MAX 3.00 | MAX 3.00 | MAX 3.00 |
| LOI (Loss on ignition) | % | 4.29 | MAX 10.00 | MAX 6.00* | MAX 6.00 |
| SiO2 (Silica) | % | 46.44 | Not Specified | Not Specified | Not Specified |
| AL2O3 (Alumina) | % | 29.25 | Not Specified | Not Specified | Not Specified |
| Fe2O3 (Iron Oxide) | % | 1.10 | Not Specified | Not Specified | Not Specified |
| CaO (Lime) | % | 6.73 | Not Specified | Not Specified | Not Specified |
| MgO (Magnesia) | % | 1.05 | Not Specified | Not Specified | Not Specified |
| SO3 (Sulphuric Anhydride) | % | 3.88 | MAX 4.00 | MAX 5.00 | MAX 5.00 |

ASH ACTIVITY INDEX

| | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|---------|------|---------|---------|---------|---------|
| 7-DAYS | % | 80.87 | MIN 75 | MIN 75 | MIN 75 |
| 28-Days | % | 91.26 | MIN 75 | MIN 75 | MIN 75 |

RESIDUE(325#)

| | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|--|------|---------|---------|---------|---------|
| | % | 28.59 | MAX 34 | MAX 34 | MAX 34 |

WATER REQUIREMENT

| | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|--|------|---------|---------|---------|---------|
| | % | 68.18 | MAX 115 | MAX 105 | MAX 105 |

Soundness

| | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|---------------------------|------|---------|----------|----------|----------|
| Autoclave Expansion Ratio | % | 0.0458 | MAX 0.80 | MAX 0.80 | MAX 0.80 |

Specific Gravity

| | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|--|-------|---------|---------------|---------------|---------------|
| Setting Time (OPC FAUJI 75%+Fly Ash 25%) | Ratio | 2.68 | Not Specified | Not Specified | Not Specified |


SETTING TIME (OPC FAUJI 75%+Fly Ash 25%)

| | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|---------|---------|---------|---------------|---------------|---------------|
| Initial | minutes | 115 | Not Specified | Not Specified | Not Specified |
| Final | minutes | 160 | Not Specified | Not Specified | Not Specified |

Heat Of Hydration (OPC FAUJI 75%+Fly Ash 25%)

| | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|---------|---------|---------|---------------|---------------|---------------|
| 07-Days | Kcal/Kg | 51.86 | Not Specified | Not Specified | Not Specified |
| 28-Days | Kcal/Kg | 59.79 | Not Specified | Not Specified | Not Specified |

NOTE: (ASTM C-618)
SiO2+Al2O3+Fe2O3 Should be MIN 70% for Class N&F and 50% for Class C.
* LOI up to 12% may be approved on acceptable performance or when Lab results are made available.


Muhammad Qasim
Manager (CR&D)

Cement Research and Development Institute
Ministry of Industries and Production
State Cement Corporation Building, Kot Lakhpat, Lahore 54770, Pakistan
Tel: (+92)-42-111-000-143 Fax: (+92)-42-35121658, 35145792 www.tusdec.org.pk
A company set up under Section 42 of the Companies Ordinance, 1984 having share capital

M/S NUKSHI FLY ASH INDUSTRIES
Ref. No. NUK-CRDI-17 dated February 11, 2015
NUKSHI FLY ASH SAMPLE No.17

WORK ORDER NO.4029

| CHEMICAL REQUIREMENTS | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|---------------------------|------|---------|---------------|---------------|---------------|
| Moisture | % | 0.21 | MAX 3.00 | MAX 3.00 | MAX 3.00 |
| LOI (Loss on ignition) | % | 4.77 | MAX 10.00 | MAX 6.00* | MAX 6.00 |
| SiO2 (Silica) | % | 52.72 | Not Specified | Not Specified | Not Specified |
| AL2O3 (Alumina) | % | 23.40 | Not Specified | Not Specified | Not Specified |
| Fe2O3 (Iron Oxide) | % | 1.50 | Not Specified | Not Specified | Not Specified |
| CaO (Lime) | % | 9.87 | Not Specified | Not Specified | Not Specified |
| MgO (Magnesia) | % | 2.10 | Not Specified | Not Specified | Not Specified |
| SO3 (Sulphuric Anhydride) | % | 3.87 | MAX 4.00 | MAX 5.00 | MAX 5.00 |

ASH ACTIVITY INDEX

| | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|---------|------|---------|---------|---------|---------|
| 7-DAYS | % | 80.01 | MIN 75 | MIN 75 | MIN 75 |
| 28-Days | % | 93.75 | MIN 75 | MIN 75 | MIN 75 |

RESIDUE(325#)

| | UNIT | RESULTS | CLASS N | CLASS F | CLASS C |
|--|------|---------|---------|---------|---------|
| | % | 23.24 | MAX 34 | MAX 34 | MAX 34 |

NOTE: (ASTM C-618)
SiO2+Al2O3+Fe2O3 Should be MIN 70% for Class N&F and 50% for Class C.
* LOI up to 1 % may be approved on acceptable performance or when Lab results are made available.


Muhammad Qasim
Manager (CR&D)



Cement Research and Development Institute
Ministry of Industries and Production
State Cement Corporation Building, Kot Lakhpat, Lahore 54770, Pakistan
Tel: (+92)-42-111-000-143 Fax: (+92)-42-35121658, 35145792 www.tusdec.org.pk
A company set up under Section 42 of the Companies Ordinance, 1984 having share capital





Manufacturing PROCESS



Raw Material



Grinding



Laboratory Testing



Packing





Raw Material







Grinding







Laboratory Testing







Packing







Loading



Weighing Bridge



Dispatch





NUKSHI
LOGISTICS COMPANY

The logo features a large, stylized red letter 'N' above a grey graphic of a road or path curving to the right. Below this, the word 'NUKSHI' is written in a bold, blue, sans-serif font, and 'LOGISTICS COMPANY' is written in a smaller, white, sans-serif font.

NUKSHI
STAR SLAG AND FLY ASH



NUKSHI
LOGISTICS COMPANY



35 Ton



60 Ton



68 Ton





Loading







Weighing Bridge







Dispatch





FLY-ASH

GRINDING / PACKING FACILITY

Current FLY-ASH
Dispatches / Packing
facility is capable of
800 TPD.

Future Plans

Separate Vertical Roller Mill (VRM)
dedicated to FLY-ASH coupled with
existing facilities the production
capacity would be enhanced to 240
TPD.



THANK YOU

