DRYCOTEC

MARCH 2025 EDITION
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DRYCOTEC DIARIES

Avebe

Veendam, Netherlands

Starch Ethers for Dry Mortars

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- Large Format Tiles
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  Bounce-Back Reduction, Anti-Sag, etc
- Skim Coat (putty)
  Workability, Stickiness Reduction, etc
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Applications : Cement	Benefits : Cement	Applications : Gypsum	Benefits : Gypsum
Skim Coat & Putty	Workability	Manual Plaster	Anti-sag
Tile Adhesive	Anti slip / Anti-Sag	Finishing plaster	Thickening
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Spray Renders	Open time	Joint filler	Working time
Repair Mortar	Adjustment time	EIFS	Smoothness
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	Bounce back reduction		Reduce chalking
	Application Speed		Application Speed




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* Benefits are also dependent on quality of ingredients, formulation and optimisation of blend.

Editor's Page

THE MAHA KUMBH

The Modis, The Amit Shahs, The Ambanis, everybody seem to be there taking the dip in the largest gathering on earth. During certain astrological alignments, these waters become charged with divine energy. Bathing is said to cleanse one's sins and lead to spiritual enlightenment.

MY PERSONAL VIEWS

No scientific evidence, but these rivers have enormous potential to give growth to all the flora & fauna. The purity deteriorates. Conducted test at Prayagraj. Results will make you jump.

> The only way to wash sins is to do more good deeds, help others, donate efforts, work for the distressed. There are no short cuts and no quickly dippable solutions.

My wife who is currently overseeing my writing says that God will punish me. Some of my dear friends took the 10-hour traffic jam & 8 kms walk, to reach the Sangam. I did not see them become divine. They are still the same.

THINK ABOUT IT

Those of you who have seen the famous Aamir Khan movie "PK", have witness a classic explanation. Team Raju Hirani & Aamir Khan express the concept very nicely. I totally believe in it. There are two gods. One that created this universe and all of us. We have no idea, no clue and no knowledge about this god. But we know that this god exist, because we can see & feel creation. The second god is man made, just like us, with terms and conditions, provides VIP darshan, superfast solutions to wash sins without any repentance or Prayaschita.

> What is Prayaschita, the instance you regret, the process of atonement begins. If there is no such realization, taking the dip is just a wash in the polluted waters. The only effect: waterborn illness.

I am a firm believer of the god that created us. I always pray to this superpower and try to do good deeds, which may not be always possible. There is no fear in my mind because I do not believe in the second God which is made by us.

BELIEVE IT OR NOT

Whatever happens, happens for the best. If you are happy, it is good, if you are unhappy, take it as an experience & learning. Making a mistake is not wrong. Not accepting a mistake is the actual problem. I am absolutely fine with all those who totally disagree with my views, because I respect all beliefs and if it makes you happy, we are all happy.

> **Let us together take a dip in the river of knowledge & wash away our ignorance to achieve path of information, which is the base to Artificial Intelligence, and the future of our world.**

Dr. Mandar Chitre
Editor & Founder – Drycotec Diaires
& Drycotec Drymortar Association

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Partner in Process Technologies

DRY MIX MORTAR PLANT

Mortar | Grout | Tile Adhesive | Black Box | Putty | Green Sand

INTENSIVE MIXER

PLOUGH SHEAR MIXER

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CARBON CAPTURE & STORAGE REVOLUTIONIZING CEMENT INDUSTRY'S EMISSIONS

Prof (Dr.) Mainak Ghosal
Honr'y Chairman, All India Valuers Association, West Bengal Centre
BSc, B. Tech, MSc (Real Estate Valuation), MBA, Honr'y PhD (Valuation & Structural Engineering)
PhD Scholar, School of Advanced Materials, Green Energy & Sensor Systems
IIEST, Shibpur

Drycotec Diaries brings you a very interesting article on the concept of Carbon Capture and Storage. A piece of brilliant work done by Dr. Mainak Ghosal and previously published in the CMA journal. I am very keen to promote this concept to manufacturers of dry mortars & our readers.

Q. Why is Cement manufacturing associated with Carbon generation & what are the effects of more Carbon getting generated on our planet ?

A. The cement industry is a critical component of global infrastructure, yet it is also a significant contributor to greenhouse gas emissions, mainly CO2. Cement production is responsible for approximately 8% of global CO2 emissions (IEA, 2020). Emissions arise from two primary sources:

1. The combustion of fossil fuels during the calcination process and
2. The chemical transformation of limestone (CaCO3) into lime (CaO), which releases Co2.

Increased CO2 generation, primarily from human activities, leads to climate change, causing global warming, rising sea levels, extreme weather events, shifts in ecosystems & wildlife.

Q. How to capture Carbon ?

A. Carbon Capture Technologies : A variety of technologies can be employed for carbon capture in cement plants:

- **Post-Combustion Capture:** By far the most researched method, it involves amine scrubbing or other solvents to capture CO2 from flue gas. Studies by Gaffney et al. (2021) demonstrate the efficiency of the process in capturing around 90% of CO2 from cement kiln emissions.
- **Pre-Combustion Capture:** This method involves removing CO2 before combustion. It requires significant process changes and is less common in cement production. However, research proves its effectiveness when integrated with gasification processes (Friedrich et al., 2019).
- **Oxy-Fuel Combustion:** This technique involves using pure oxygen instead of air for combustion, thereby producing concentrated CO2. While promising, it is still in the developmental stage for cement operations (Khan et al., 2020).

Q. How to Store this Carbon ?

A. Once captured, CO2 must be securely stored. The literature identifies several geological formations suitable for CO2 storage, including:

- **Depleted Oil and Gas Reservoirs:** These are well-understood structures that can potentially hold large volumes of CO2 (Gérard et al., 2017).
- **Deep Saline Aquifers:** These formations are widespread and can offer substantial storage capacity but pose challenges regarding monitoring and have leakage risks (Bachu, 2000).
- **Mineralization:** Some studies suggest using mined products to chemically convert CO2 into solid minerals, thereby providing a permanent storage solution (Krevor et al., 2019).

Q. Why is it not been done on a large scale yet ?

A. The implementation of CCS in the cement industry faces economic hurdles. Initial capital investments for retrofitting existing plants are high, leading to calls for government incentives and support (IEA, 2021). Regulatory frameworks are also essential in guiding CCS deployment, as highlighted by the analysis of various global policies encouraging carbon pricing and emissions trading schemes (Chadwick et al., 2019).

Q. Where is India currently on this issue ?

A. India's scenario regarding Carbon Capture and Storage (CCS) in the cement industry is quite promising and evolving. Here are some key points:

Commitment to Net Zero: India has committed to achieving net-zero emissions by 2070. This ambitious goal necessitates significant reductions in greenhouse gas emissions from major industries, including cement.

CCS Initiatives: The Global Cement and Concrete Association (GCCA) and other organizations are actively working to accelerate the deployment of CCS in India. This includes developing CO2 hubs and storage facilities to capture and store emissions from cement plants.

Potential Storage Sites: India has several potential storage sites for captured Co2, including sedimentary basins like the Krishna-Godavari Basin, Mumbai Offshore Basin, and the Cambay Basin. These sites offer significant storage capacity for medium to large-scale CCS projects.

Technological Advancements: There are ongoing efforts to integrate CCS technology into cement production processes. This includes using alternative fuels, improving energy efficiency, and adopting new technologies to reduce the carbon footprint of cement manufacturing.

Policy Support: The Indian government, through initiatives like NITI Aayog, is providing policy support and frameworks to promote the adoption of CCS in the cement industry. This includes financial support,

Carbon Capture and Storage technology has the potential to revolutionize the cement industry by significantly reducing emissions and promoting sustainability. While challenges remain, ongoing research, investment, and collaboration among stakeholders can pave the way for successful implementation. As the world strives for a low-carbon future, CCS could play a crucial role in transforming the cement industry and achieving climate goals. India's outlook for CCS in the cement industry shows cautious optimism, with significant potential for reducing emissions and contributing to global climate targets.

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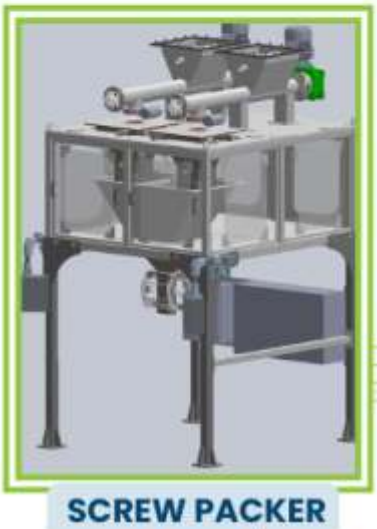
VTC SCREW PACKER & ECO BAG PALLETIZER



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- Accurate **Net Weighing Technology**
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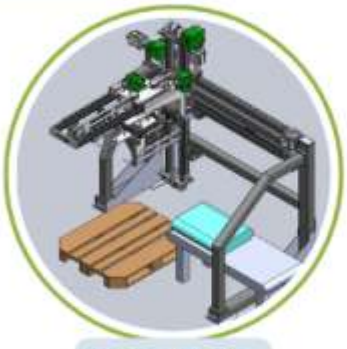

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My Technical Support Diaries : A Structured Guide to Troubleshooting (Part One)

This article has been given by Anupam Shil, Head - Technical & Marketing Services, STP Limited (A Berger group company). Anupam is a technical leader with 30 years of experience into Business Development & tech support in Construction Chemicals, Coatings, Lubricants, Seals, Valves and Industrial Consumables. In this article, he gives a very nice and practical guide to troubleshooting while using the various products and services in Construction Chemicals. This is the second part.

An investigation expert has to look into several aspects during troubleshooting. For example,

COMMON CHECKS

- Substrate Condition – Wet/Dry; Smooth/Undulated; Seamless/Cracked; Rigid/Hollow
- Surface Preparation – For any application work, surface preparedness is important
- Temperatures – Atmospheric and Substrate temperature for suitability of application
- Mixing Tools – Whether power tools are being used OR stuck to crude manual methods
- Intermittent Time – Whether the time between each task is appropriate or erroneous
- Skill – Worker skill and knowledge always plays an important role
- Structure Condition – Overall health of the structure should be considered whether ongoing or completed project so as to understand if its solidity is intact
- Storage Conditions – Poor warehousing may adversely affect the product quality

MEMBRANE & COATINGS

- Priming – Selection and priming method
- Deposition – Per coat application quantity
- Detailing – Proper detailing at corners, outlets, edges, overlapping joints, etc.

SEALANTS

- Sealant Placement versus Groove Size – Width x Depth
- Priming – Selection and priming method
- Separation – Ensuring that there is no bottom side adhesion

GROUTS

- Mix Ratio – Power to Water Ratio
- Curing – Method and material of curing
- Volume of a Single Pour – L x B x H

PERCEPTION

This is a phenomenon that is completely beyond our influence, however, can be brought into control with the help of knowledge sharing through effective communication.
'Your product is too thick. I am used to a low viscosity product'
'We are always using a stick/rod to mix other products, but same not happening with yours'
'Please send some Technical person, I don't want to deal with a Sales Team'
'Why is the product still wet? I want a material which cures rapidly'
'We never use primer for this application. Why should I do now?'

These are questions and challenges that we face on a day-to-day basis. Customers / Applicators are at times less or wrongly informed. At the same time, it is difficult to get labour teams to break free from their cultivated habits. It is a challenge as well as objective of a company representative to overcome this barrier and win confidence of the user team which asks for onsite coworking with the Applicator's team at ground level.

PRODUCTION

Usually, this is the last step to be reckoned, when the product does not fit into the format of any other gap category even after thorough evaluation. This shall require revisiting the entire process, from conceptualization to production, in order to isolate the root cause. Each product is conceived based on available market inputs inside a R&D lab, tested with lab equipment, sometimes through live mock up and its final recipe freezes. Its bulk manufacturing is planned based on available information and the same is scaled up on the production shop floor. Deviation from the benchmark is checked, rechecked, corrected and repeated until a desired output is achieved. This completes the journey of creating a new product by freezing its formulation, production SOP and QC checklist of the finished good. The process is repeated and revised each time there is a change in raw material supplier or improvisation for better efficiency or economy. Given below is a simplified example on the manner and direction in which such an investigation may have to be carried out by the concerned department/s of an organization.

FORMULATION	• Change of RM source • Change of PM source / type
PRODUCTION SOP	• New Equipment installation • New Manpower addition
QUALITY CONTROL	• Short term tests of RM, Semi-FG & FG • Long term tests RM, Semi-FG & FG

TEAM ASSIGNMENT

Once the category assessment exercise is over, it is very important that one of the team/s takes its ownership and gives it a conclusive end, with an objective that there is less likelihood of such a situation to reoccur in future. Category wise ownership guidelines are stated below

SELECTION	• Sales	• Tech. Support
TRANSPORTATION	• Logistics	• Factory
APPLICATION	• Tech. Support	• Sales
PERCEPTION	• Tech. Support	• Sales
PRODUCTION	• QC / R&D	• Factory

COMPENSATION

Lastly, whether we like or not, the most logical outcome of Product Complaint is Compensation – either to support the 'process of analysis' or at times immediate replenishment of the supplied goods to avoid work disruption, incurring a direct loss to the organisation. By following a definitive set of rules with a clear objective and sharing of responsibilities, every troubleshooting case can be resolved in least possible time, resulting in upgradation of prevailing practices of an organization for better efficiency and economy. Lastly, the most important point – Sustenance, Growth and Prosperity of any organization is a direct function of all its employees focused on a single goal Customer Satisfaction.

MCON PAINTS

BREAKING NEWS

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My Legal Diaries :
ADVOCATE PANKAJ BANDEKAR,
PVB ASSOCIATES

ADVOCATE PANKAJ BANDEKAR has expertise in RERA, Family Disputes, Consumer Law, Trademarks, Copyrights, Design, Taxation, Criminal Law, Cyber Law, Domestic Violence, Drafting of Agreements & complex documents, Written Legal Opinion in respect of any law, co-operative societies, Environment Law Litigation & Legal Metrology advisory & is also a qualified Arbitrator.

All our readers, who are mostly in the business of manufacturing, trading or application of building materials would need some quick tips on the legal matters. Drycotec Diaries is starting a new page which will help our readers understand the concepts and take the right actions.

Drycotec Diaries : What Happens When a Cheque Bounces?

Adv. Pankaj : Under Section 138 of the Negotiable Instruments Act, if a cheque is returned due to insufficient funds, the person who issued the cheque can face criminal action. The law presumes that any cheque issued is for enforceable debt and also any person issuing the cheque for another is deemed to be bound by such debt. However, this is only presumption and not a conclusion. Presumptions can be rebutted and could create highly contested cases.

Drycotec Diaries : What are Unauthorized Cheques ?

Adv. Pankaj : When you receive a cheque for a payment, it's important to ensure that the cheque is issued by the person or entity to whom you have supplied goods or provided services. Accepting a cheque from someone who is not a party to the transaction can lead to serious complications if the cheque bounces.

Drycotec Diaries : Suggest some good business practises ?

Adv. Pankaj :
Some Best Practices

- **Confirm the Source:** Always verify that the cheque comes directly from the person or entity with whom you have a contractual agreement or such understanding in writing.
- **Demand Clarity:** If a third party issues a cheque on behalf of your client, get written confirmation or evidence that they have the authority to do so.
- **Be Cautious with Third-Party Cheques:** Recognize that even if the cheque is legally presumed to discharge a debt, enforcing it against an unauthorized drawer can be difficult if the cheque is dishonoured.

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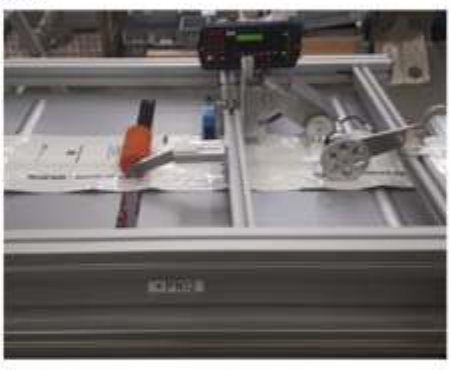
FROM THE TUBULAR FILM TO THE PERFECT PALLET

①

The tubular film

The polyethylene bags are delivered as film (PE side gusseted tubular film) on rolls, picked up on a carrier and fed manually into the machine.

②



The printing

The versatile marking systems ensure reliable and positionally accurate printing with your individual marking. We adapt this process step exactly to the speed requirements of the machine. Empty bag printing with laser (CO_2 + fiber laser), thermal transfer or labeler and full bag printing with inkjet is optionally available.

③

The bag-scanner

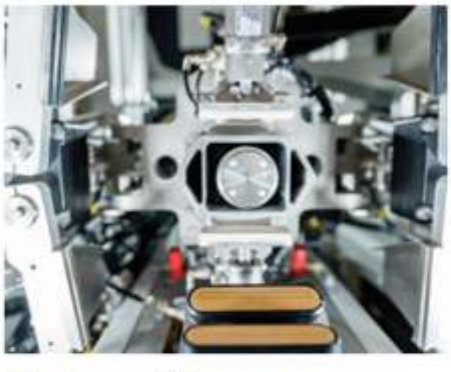
The optional bag scanner scans the QR code printed on the film to ensure that the machine operator is using the correct bag roll selected for the product to be filled. QR Codes can additionally be used for product and bag tracing.

④

The bag manufacturing: corner welding and bottom seam welding

Due to the diagonal welding of the side gussets, the bag bottoms are optimally formed. Among the advantages of corner welding are improved bag geometry, higher bag strength and very good stackability. This attractive positioning options on pallets, both in terms of storage positioning options on pallets. The machine automatically adjusts to different bag lengths as soon as the corresponding data have been entered. The system variably compensates for the bag lengths. Separated by a knife the bag is open at the top.

⑤



The hexagon filling spout

The bag gripper clamps the bag chest tight to the hexagonal filling spout, resulting in a clean filling process.

⑥

The filling and bag closure

The combined MEC® control and weighing electronics – a development of HAVER & BOECKER – ensures exact filling quantities. Product compaction inside the bag is a fundamental requirement for achieving a clean and efficient final result. Inner and outer vibration compactors provide the required product compaction. The contents of the bags are efficiently compacted during filling. This reduces costs: compacted bag contents mean less volume and therefore less film.

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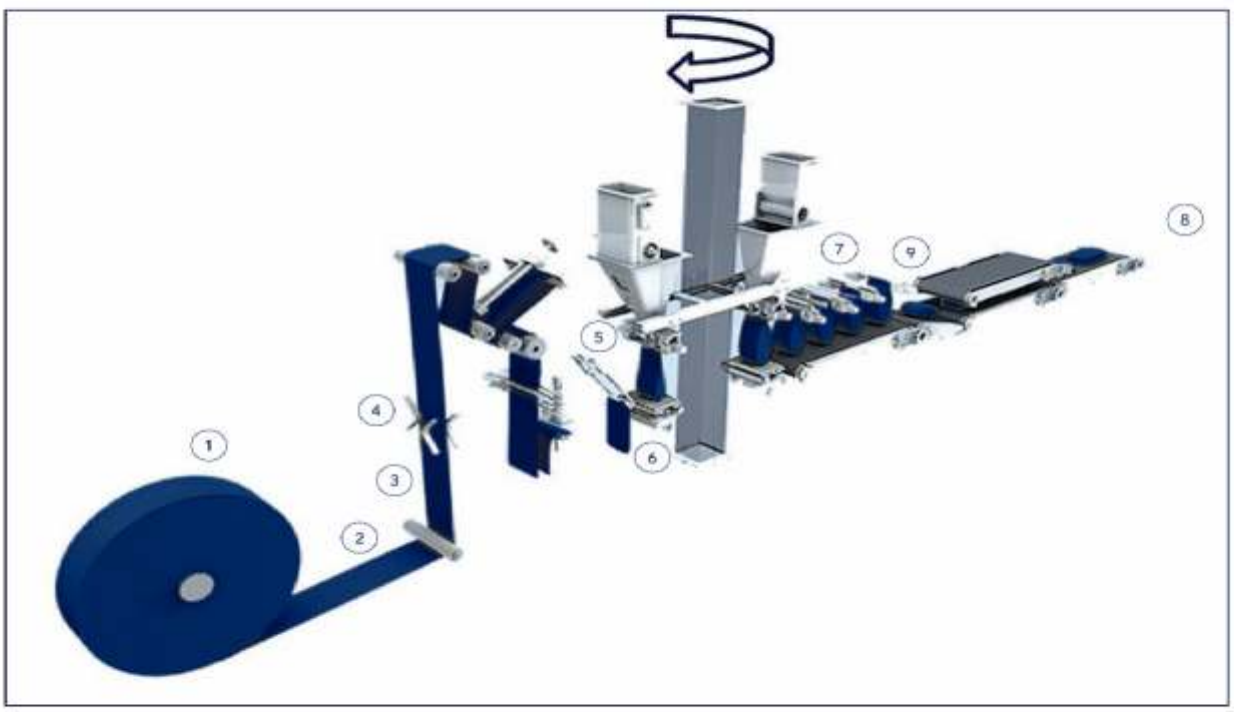

7

The full-bag transport

The filled bags are forwarded in an upright position, closed and placed on the conveyor belt.

8

The quality control

The check-weigher for the „bag-check" with weight and closure control.

9

The bag forming section

The belt conveyor consists of various adjustable elements, that ensure proper filling and increase process reliability. By using a pressing belt, the filled and sealed bags are formed precisely and can thus be palletized perfectly.

For more information get in touch with us at c.gundigara@haveribauindia.com

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- SAND - QUARTZ
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- POWDER - DOLOMITE
- POWDER - BENTONITE
- POWDER - BARYTES
- POWDER - CALCITE
- POWDER - SLATE
- POWDER - SILICA
- POWDER - TALC
- POWDER - QUARTZ
- POWDER - WHITENING
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My Cement Diaries : Shaktishali Cement Pvt Ltd.

Drycotec Diaries speaks to **Ashwani Sharma, Director, Shaktishali Cement Private Limited**, a passionate entrepreneur, staying in Moga, Punjab, India.Ashwani Sharma is currently associated with Shaktishali Cement Private Limited appointed as Director. In this interview he speaks to us about a decision taken by them on the packing systems.

Drycotec Diaires : Tell us about yourself and your company ?

Ashwani Sharma : Shaktishali Cement was incorporated in the year 1999, we are a well known company involved in grinding high quality clinkers. We manufacturer a wide range of products which include Porttand Pozzaolana Cement (PPC), Shakti Shali Cement 50 Kg, Shakti Shali Cement 150 Kg, Shakti Shali Cement 500 Kg and Shakti Shali Cement 1000 Kg. Our popularity and product quality have made us customers first choice.

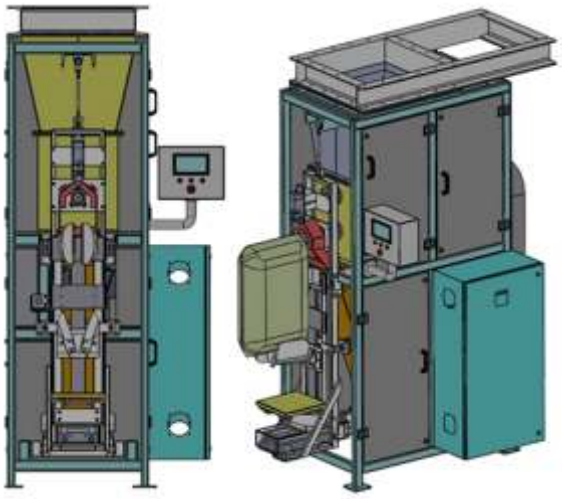
Drycotec Diaries : Tell us why you purchased packing systems from R.S. Enterprises ?

Ashwani Sharma : There are many manufacturers of packing systems & we have been using some other brands. The problems keep occurring in the machine and affects the accuracy of the weight. The excess weight can be detrimental to business & lesser weight can create legal issues as well as damage the brand's perception.

Drycotec Diaries : Can you elaborate on the experience with R.S. Enterprises ?

Ashwani Sharma : The only thing that we would like to say is that we have replaced all our packing machines of other brands with R.S. Enterprises. Their products are certainly value for money and we are very happy with their service. For any customer, the most important point is the uptime of the machines. A company with good and reliable service can ensure maximum uptime of packing so that the plant runs smoothly & continuously.

Another very important point is the cost of spare parts. All companies increase the parts pricing and the overall cost of maintenance increases. However the cost of parts for R.S. Enterprises are very resonable and acceptable. As a cement making company, we will definitely recommend Satish Kumar Jangid and his products made under the R.S. Enterprise brand.



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ASHWANI SHARMA

R.S. ENTERPRISES

Protecting what builds the World

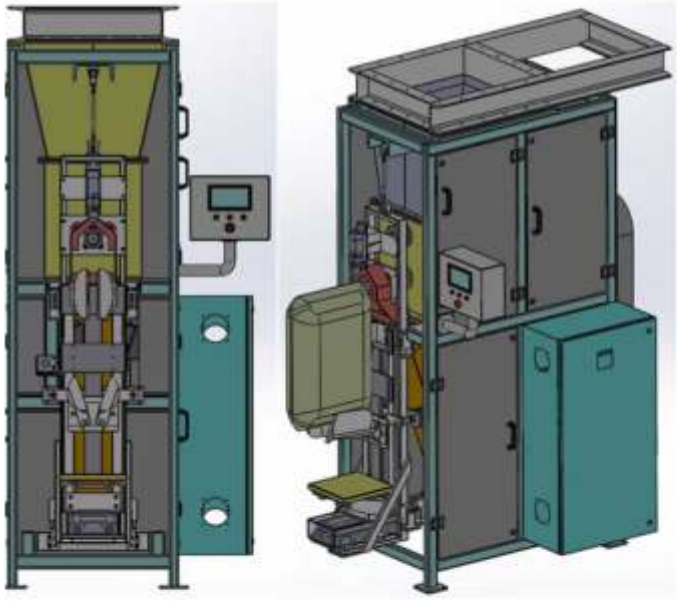
ISO 9001:2015 ● www.rsesolution.com ● November 2024 Highlights

Director's Interview at World of Concrete 2024

Key Takeaways from the Interview

- *"Automation is not just about speed, it's about creating value".*
  – Mr. Satish Kumar Jangid, Director
- **Industry Insights:** Emerging trends in automated packaging systems and their applications in construction material industries.
- **Future Vision:** Commitment to sustainable and efficient technologies.

Packaging Machines & Automation Innovations



Electronic Screw Packer

Designed for efficiently packaging free-flowing, powdery bulk materials into valve bags, while weighing the materials in capacities ranging from 20kg to 50kg.

- **Feed Rate:** 300 bags/hour
- **Accuracy:** ±0.5% S.D
- **Application:** Gypsum, Chemicals, Limestone, Bentonite, China clay, Readymix, Wall Putty, Mineral Talc, etc.

Ongoing Developments

1. **Gravity Feed Type Packaging Machine**
2. **Jumbo Packaging Machine**
3. **Impeller Type Rotary Packaging Machine**
4. **Automatic Truck Loading Machine**
5. **Screw Lite Packaging Machine for 1kg to 5kg**

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My Mineral Diaries : SANJAY CHITNIS

Sanjay Chitnis, Retired Sr. Vice President (Technical Services), JK Lakshmi cement Ltd has almost four decades of experience in the field of cement. He is an engineer from the COEP college in Pune, has done his MDI program from Indian Institute of Management, Calcutta, Indian Institute of Management, Lucknow & Indian Institute of Management Ahmedabad. He has also done his MBA from Annamalai University.

In this article we are going to discuss about ULTRA FLY ASH.

The use of finer pozzolanic materials in production of concrete especially of higher grades (M 60 and above) is progressively increasing in India. Keeping this trend in view and to meet the requirement of the construction Industry, bureau of Indian standard has published IS 19058 : 2024 Ultrafine Fly Ash — Specification.

Fly ashes are the most important by-product of coal combustion. Ultra-fine fly ash is a super fine powder consisting of mainly spherical particles composed of Alumino-silicate glass. The pozzolanic properties of ultra-fine fly ash enable it to react with lime released during cement hydration to form further cementitious phases.

Fly ash characteristics are determined by the origin and processing of the burned coal, the combustion technology and the fly ash precipitator technology. The fineness or particle size distribution is one of the main fly ash properties affecting its performance in Portland cement and concrete.

Ultra-fine fly ash (UFA) prepared using different techniques may exhibit various characteristics, which will affect their performance as cementitious material. UFA prepared through Separation-- consisted mainly of spherical particles & was superior in enhancing the fluidity of Portland Cement and alkali-activated material AAM.

Most commonly used in classifying fly ashes are air classifiers or sieves where they classify particle sizes down to about 5–10 μm. The enhanced reactivity of the fine fly ashes resulted in modifications of the hydration kinetics and hydration product proportions in hardened blended cement pastes. Fine fly ashes had a stronger filler effect and resulted in more rapid hydration of C3S by increasing and prolonging the main hydration peak.

Due to the fine size of ultrafine fly ash particles, it has more reactive surface area, which helps to achieve higher early strength and lower permeability to the concrete mix due to mechanical packing effect of well graded fine particles.

BENEFITS

- Reduced water demand for the same workability
- Reduction of segregation and bleeding
- Cohesiveness of concrete increases
- Reduced early age temperature rise
- Longer-term strength development
- Reduction in permeability of concrete, improvement in resistance against chloride and sulphate penetration

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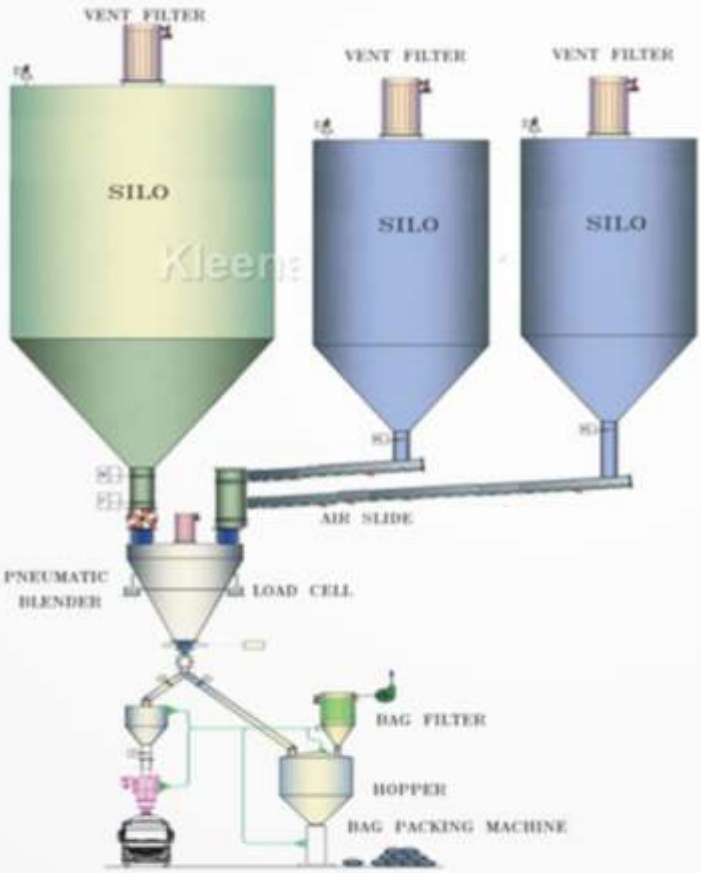

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