



Application and efficiency of *WALKING FLOOR*[™] across multiple industries



BIOMASS



AGGREGATES



WASTE

KEITH - COMPANY OVERVIEW

WHO IS KEITH ?

- An American Company, known for the invention of it's WALKING FLOOR technology.
- Products are being used in over 3000+ cities Globally, by everyone, from individual owners to Fortune 100 companies across various industries to handle bulk and palletized material.
- The company has sold WALKING FLOOR units around the globe and holds over 250 patents.

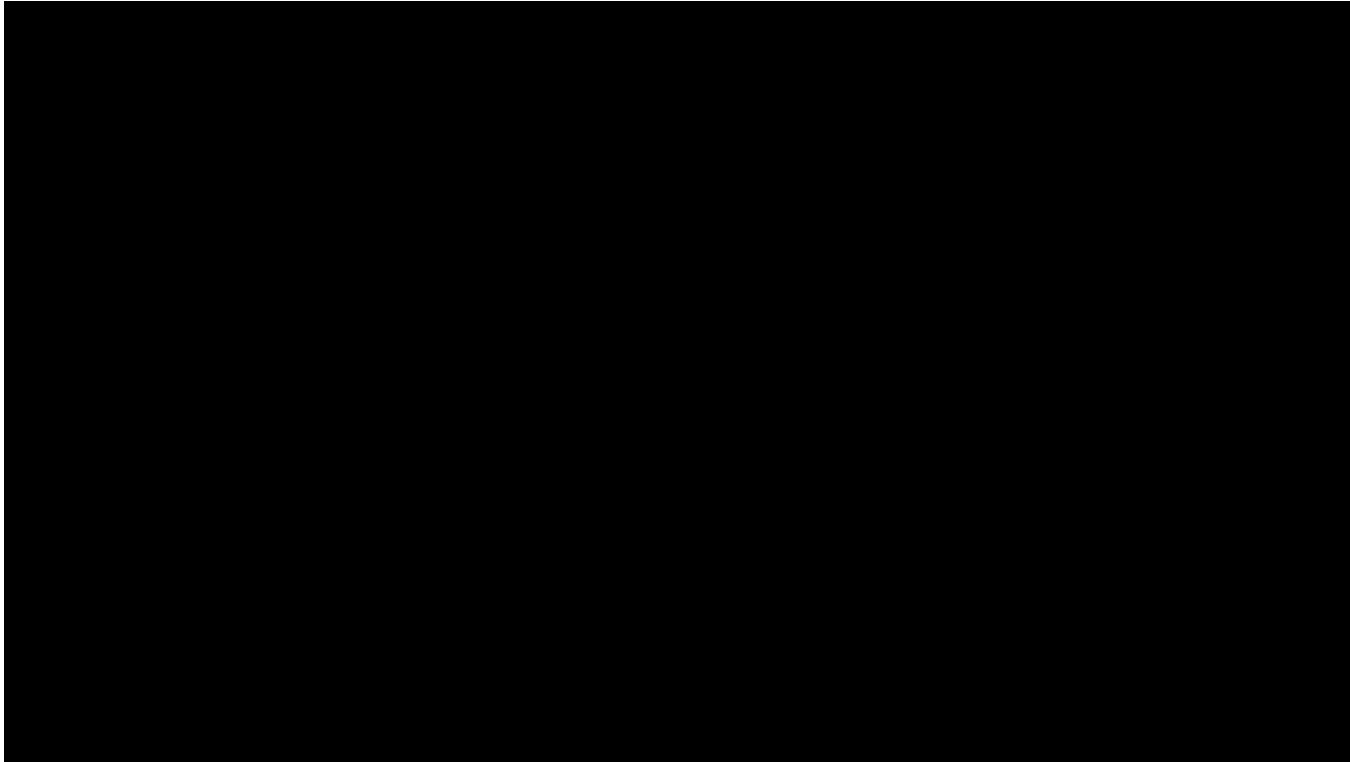


WHAT WE DO ?

- Provides hydraulic technologies to automatically unload bulk material in the most efficient and profitable way.
- Manufactures systems and provides expertise to end users, fleet owners, and vehicle builders.
- Helps to focus on profitability, speed and safety in material handling operation.



WALKING FLOOR VEHICLES UNLOADING DRY WASTE



[Click here for the unloading video](#)

HOW IT WORKS





KEITH
MANUFACTURING CO



HOW IT WORKS

[Click here for the unloading video](#)

WHO USES US AND WHY

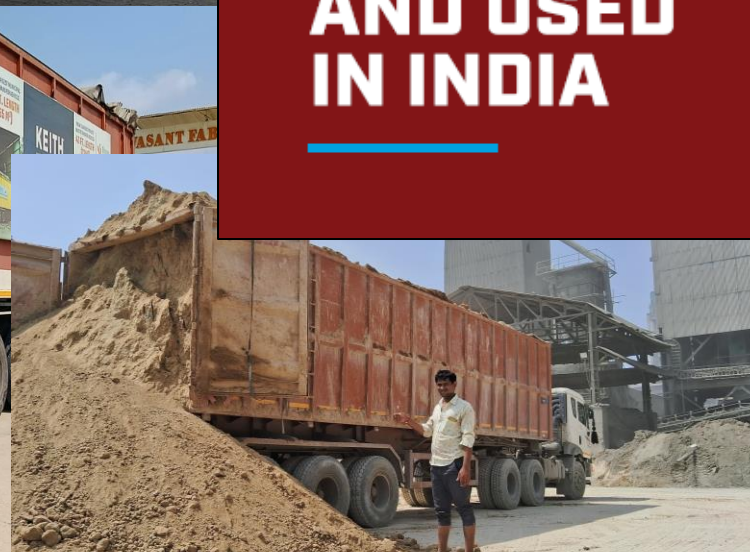
Who	Why
 <p data-bbox="324 279 823 317">CEMENT & MINING COMPANIES</p> <p data-bbox="108 399 954 434">Numerous cement companies across the globe such as:</p> <ul data-bbox="63 478 765 601" style="list-style-type: none"><li data-bbox="63 478 353 511">• Shree Cement<li data-bbox="63 525 407 601">• Holcim Lafarge in 11 countries<li data-bbox="475 478 765 511">• Dalmia cement	<ul data-bbox="1025 465 1837 770" style="list-style-type: none"><li data-bbox="1025 465 1647 497">• Highest payload on highway possible<li data-bbox="1025 530 1837 563">• 1/3rd operational cost & 1/5th maintenance cost<li data-bbox="1025 596 1789 628">• Largest vehicle with self unloading technology<li data-bbox="1025 661 1537 694">• Reduction in carbon footprint<li data-bbox="1025 727 1319 760">• Absolute safety
 <p data-bbox="372 669 846 751">BIOMASS AND AGRICULTURAL COMMODITY USERS</p> <ul data-bbox="475 794 884 962" style="list-style-type: none"><li data-bbox="475 794 629 827">• Cargill<li data-bbox="475 863 884 896">• Reliance Industries Ltd.<li data-bbox="475 929 581 962">• ITC	

WHO USES US AND WHY

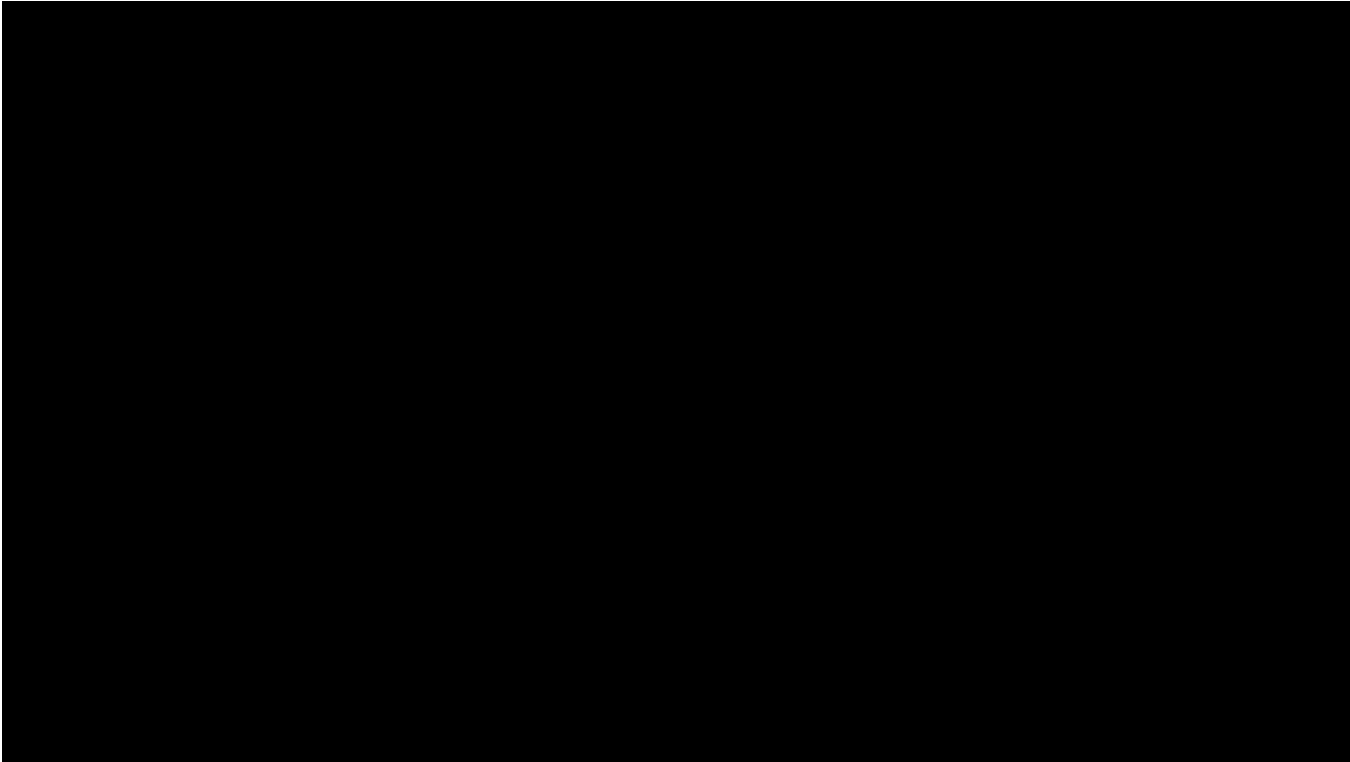
Who	Why
 <p>MUNICIPAL CORPORATION</p> <p>3000+ Municipalities across the Globe such as:</p> <ul style="list-style-type: none"> • Pune • Cairo • Seattle • Colombo • New York • London 	<ul style="list-style-type: none"> • Cheapest transfer station concept • 80% savings in fuel • 1/3rd operational cost & 1/5th maintenance cost • Largest waste transfer vehicle • Reduction in carbon footprint • Absolute safety
 <p>INDIVIDUAL FLEET OWNERS OR TRANSPORTERS</p>	<ul style="list-style-type: none"> • Save unloading cost • Avoid manual intervention • Higher payload • Faster turnaround time • Flexibility in range of materials for backhaul



LOVED AND USED IN INDIA



WALKING FLOOR VEHICLES UNLOADING R.D.F



[Click here for the unloading video](#)

EFFICIENTLY HANDLING R.D.F IN CEMENT PLANTS



Excavators used to unload from trucks



Unloading RDF automatically in sheds/storage yards



Multiple transfers done with smaller vehicles to unload RDF into hoppers



Unloading RDF directly into hoppers from large trucks

Turn Around Time Data for RDF movement seen in a Cement Plant

Description	Time taken for a regular Trailer	Time taken for a Walking Floor Trailer	Possible optimization
Time taken at the Loading Location	1-2 hours	1-2 hours	Can be optimized by the company
Travel time for a loaded vehicle	4-5 hours	4-5 hours	
Paperwork at the unloading site	1-4 hours	1-4 hours	Can be optimized by the cement company
Unloading time at the yard	1 – 3 hours	4 - 10 mins	A Walking Floor truck can unload straight into a hopper avoiding multiple handling.
Loading materials into smaller vehicle and unloading into the hopper			
Waiting line created due to Auxiliary equipment used for unloading	4-8 hours	Minimal	
Travel time for empty vehicle	4 hours	4 hours	
Total time taken per trip	15 - 26 hours	10 – 15 hours	

- In the above scenario, the major steps consuming maximum time is paperwork at the unloading locations and waiting line created due to auxiliary equipment & multiple handling.

REGULAR VEHICLES USED TO HANDLE RDF VS WALKING FLOOR VEHICLES

Vehicle Type	GVW (Ton)	Volume (m ³)	Payload (Ton) (Legal limit)	Payload (Ton)	Unloading Process	Unloading Time
36ft trailer	49	32	31	20-25	Excavator & Labor	30 – 40 mins
40ft trailer	55	73	37	33-34	KEITH Walking Floor	8 -12 mins



36 ft trailer



40 ft trailer

REGULAR VEHICLES USED TO HANDLE RDF VS WALKING FLOOR VEHICLES

Vehicle Type	GVW (Ton)	Volume (m ³)	Payload (Ton) (Legal limit)	Payload (Ton)	Unloading Process	Unloading Time
22ft (12wheel) Tipper	37	26	23	14	Tipping, excavator & Labor	20 – 30 mins
28ft (14 wheel) Rigid body	42	55	28	27.3	KEITH Walking Floor	8 -10 mins



19 ft tipper



28 ft rigid body truck

WALKING FLOOR® VEHICLES AT RAMKY FOR RDF HANDLING



28ft Walking Floor trucks



Unloading RDF directly into the hopper

ReSustainability, Hyderabad has deployed Walking Floor trucks that cumulatively transport over 1000 tons of RDF per day to their Waste to energy plant.

MULTIPLE WALKING FLOOR VEHICLES UNLOADING TOGETHER



[Click here for the unloading video](#)

BENEFITS OF WALKING FLOOR FOR RDF HANDLING



Unloading MSW, RDF

- ✓ **Automatic unloading in a few minutes**
Walking Floor vehicles can complete the unloading operations in 10mins while it takes 30-40mins when RDF is unloaded with auxiliary equipment.
- ✓ **Savings on Unloading cost**
As there is no dependance on auxiliary equipment for unloading, minimal unloading cost is incurred, which is fuel consumed by the truck.
- ✓ **Higher capacity planning is possible with the Walking Floor**
Since the operational time in the plant will be reduced with the Walking Floor, quantum of materials that can be handled is high
- ✓ **Absolute Safety**
Since the equipment unloads horizontally, there is absolute safety while unloading.
- ✓ **Low Maintenance cost**
Minimal maintenance is required

WALKING FLOOR VEHICLE UNLOADING BAGASSE



[Click here for the unloading video](#)

REGULAR VEHICLES VS WALKING FLOOR VEHICLES IN THE BIOMASS INDUSTRY



Regular trucks with manual unloading

Walking Floor Trucks

No. Of trips

- 1 complete trip in 2 days

- 2 trips in 24 hours

Reason for time taken in the turn around time

- High time taken during manual unloading (3 to 4 hours)
- Resulting waiting line caused due to manual unloading
- Difficulty in getting work permits in the night for manual unloading

- The customer uses Walking Floor trucks to automatically unload biomass with no barrier in timings and keeps 2 drivers in 1 truck to get 2 trips per day.

*The above data and comparison is based on a customer’s operations on deploying his Walking Floor trucks for handling woodchips.

EFFICIENTLY HANDLING BIOMASS



Manually unloading Rice husk



Automatically unloading Rice husk



Tipper unable to unload Wood Mulch



Unloading Wood Mulch with a Walking Floor

REGULAR VEHICLES USED TO HANDLE BIOMASS VS WALKING FLOOR VEHICLES

Vehicle Type	GVW (Ton)	Volume (m ³)	Payload (Ton) (Legal limit)	Payload (Ton)	Unloading Process	Unloading Time
32ft Rigid body	25	95	15	13-15	Manual Labor	2 - 3 hours
34ft Rigid body	25	95	15	13-15	KEITH Walking Floor	8 - 10 mins



32 ft rigid body



34 ft rigid body

BENEFITS OF WALKING FLOOR IN THE CEMENT INDUSTRY



Unloading bulk loose materials

- ✓ **Largest payload for hard to move materials**
Walking Floor vehicles can give the maximum possible payloads for numerous materials being used in the cement industry.
- ✓ **No dependence on auxiliary equipment**
Sticky, hard to handle materials can be easily unloaded with Walking Floor, which are traditionally unloaded using auxiliary equipment such as excavators etc.
- ✓ **Damage of trailer/truck bodies due to excavators avoided**
Truck/trailer bodies get damaged due to usage of auxiliary equipment, which is avoided on using Walking Floor, hence giving more life for the bodies.
- ✓ **Absolute Safety**
Since the equipment unloads horizontally, there is absolute safety while unloading.
- ✓ **Low Maintenance cost**
Minimal maintenance is required

AMONG THE LARGEST WALKING FLOOR® VEHICLES



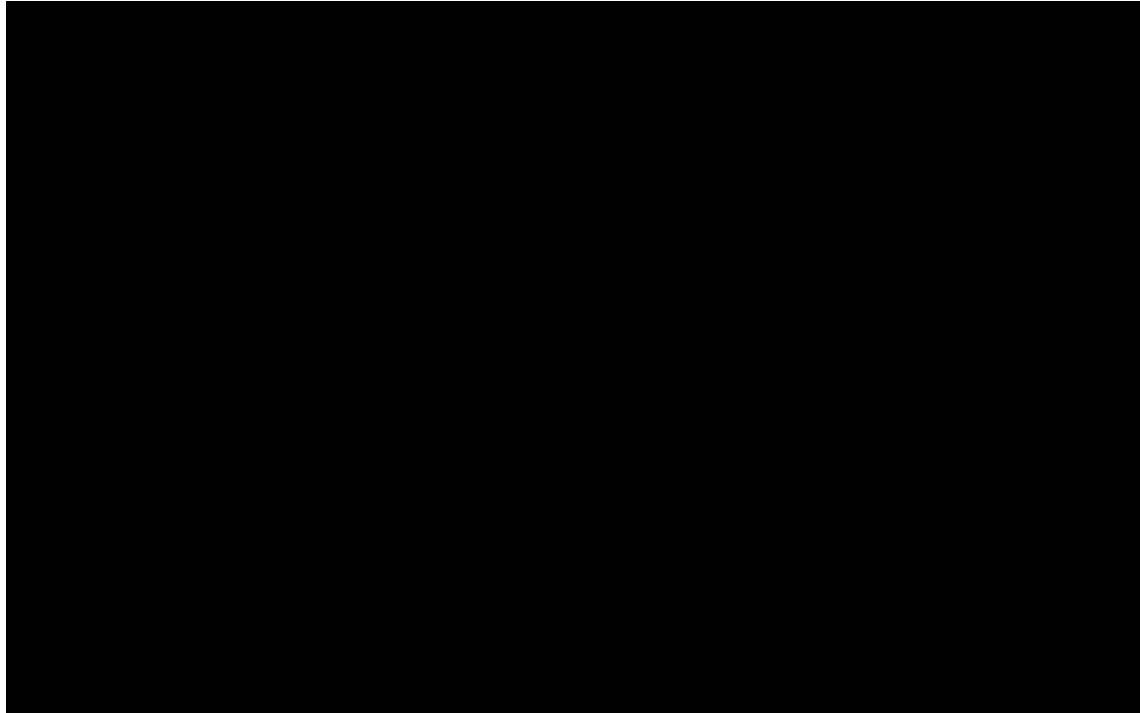
Flyash Handling: A 40ft Walking Floor trailer is used in Shree Cement, where flyash is loaded from a silo and unloaded into a hopper directly.



RDF Handling: Largest Transfer trailer for RDF in India used by Shree Cement

Walking Floor vehicles are the Largest vehicles with self-unloading technology that can be used to handle a variety of materials in the cement industry.

WALKING FLOOR VEHICLE UNLOADING MATERIALS IN THE CEMENT INDUSTRY



[Click here for the unloading video](#)

REGULAR TIPPERS VS WALKING FLOOR VEHICLES FOR INTERNAL MOVEMENT



Auxiliary equipment required for tippers



Complete Cleanout using a Walking Floor



Unloading using a Walking Floor

Vehicle Type

Tipper

Walking Floor truck (Rigid Body)

Walking Floor Trailer

Vehicle Capacity

16m³

55m³

75m³

Number of Trips

25

25

20

Quantity per Trip

18 to 20 T

38 to 50 T

50 to 70 T

Total Quantity moved per day

~500 T

~950 to 1250 T

~1000 to 1400 T

WALKING FLOOR VEHICLE USED AT A CEMENT PLANT FOR INTERNAL MOVEMENT



Residue left after unloading in tippers



Unloading Synthetic Gypsum



Cleanout after unloading Gypsum

WALKING FLOOR VEHICLES USED TO HANDLE STICKY AND HARD TO UNLOAD MATERIALS



Material : Marble Slurry
Unloading using excavator
Unloading Time : 30 – 40 mins



Material : Marble Slurry
Unloading with KEITH Walking Floor
Unloading Time : 3 – 6 mins

WALKING FLOOR USED TO HANDLE HUGE VOLUMES OF GYPSUM



Tippers unable to unloading Synthetic Gypsum



Unloading high payloads of synthetic gypsum



Auxiliary equipment used to unload Gypsum



Complete Cleanout after unloading Synthetic Gypsum

EFFICIENT HANDLING OF FLYASH WITH WALKING FLOOR



Loading Flyash from a Silo



Trailer with hatches to enable loading from Silo



Unloading flyash directly into hoppers from large vehicles

OUR CUSTOMERS' RIGID BODY VEHICLES ON DIFFERENT BRANDS



KEITH on a Mahindra



KEITH on a Ashok Leyland



KEITH on a Bharat Benz



KEITH on a Eicher



KEITH on a Fuso

Dimension (Ft)	28 x 7.8 x 8.5	28 x 8.1 x 8.5	31.5 x 8.1 x 8.5	32 x 8.2 x 8.5	32 x 7.5 x 8.5
Cubic capacity (m³)	38	55	62	62	57

OUR CUSTOMERS' TRAILERS ON DIFFERENT BRANDS



KEITH on a SCANIA



KEITH on a BHARAT BENZ



KEITH on a TATA



KEITH on an ASHOK LEYLAND



KEITH on a MAN

Dimension (Ft)	28 X 8 X 4	32 x 8 x 4	32 x 8 x 5	40 X 8 X 8.03	45 x 8 x 8.85
Cubic capacity (m³)	25	28	35	73	90

SOME OF OUR CUSTOMERS IN INDIA



SHREE CEMENT LIMITED



LARGEST WALKING FLOOR® VEHICLE IN UAE FOR RDF HANDLING



MSW to RDF facility in Dubai



90 cum capacity Walking Floor vehicle

In Dubai, the Walking Floor vehicle is used to haul RDF, providing a cubic capacity of about 90 cubic meter and the next vehicle planned would have a cubic capacity over 100 cubic meter.

FEW MATERIALS HANDLED IN THE CEMENT INDUSTRY



Unloading SCF



Unloading directly into the hopper



Unloading Coal from a 40ft trailer automatically



Automatically unloading biomass

MAKING END USERS SUCCESSFUL



**Increasing
operational efficiency**



**Collaborating with end
users, body builders and
corporations**



**Sharing global
experience in material
handling**



**Providing operations-
oriented support**



www.keithwalkingfloor.in