

STEER INTO A NEW AGE!

India's Largest Integrated
ELT Material Recycler



ABOUT US

- ▶ **HERITAGE** of 40 years in the rubber business
- ▶ **LARGEST** ELT (End-of-Life-Tyre) material recycler
- ▶ **INTEGRATED** operations from sourcing to providing world-class recycled rubber materials
- ▶ **ONLY** material recycling company to have a strong presence in both, road and non-road applications

Our Vision

To continuously innovate and apply environment-friendly technologies for conversion of waste into value-added products with the aim to maximise stakeholder value

Our Mission

To become the largest fully-integrated waste tyre recycling company in India and amongst the top 10 in the world by 2025



THE JOURNEY SO FAR



Our Locations

- Panipat
- New Delhi
- Haldia
- Wada
- Gummidipoondi
- Oman

● Corporate Office
● Tyre Crumbing, Reclaim Rubber & Steel Abrasives Plants

PROCESS HIGHLIGHTS AND CERTIFICATIONS



The **advanced recycling technologies** employed at **Tinna** ensure that **100%** of the tyre is **deconstructed** into new raw materials.

01

Completely Environment Friendly Process

04

100% Recovery from Tyres (Zero Waste)

02

No Effluent Gases/ Zero Liquid Discharge (ZLD)

05

Global Supply Chain for ELTs Collection

03

No Fumes Generated



PRODUCT PORTFOLIO - NON-ROAD SECTOR

- ▶ ALL TYPES OF TYRES
- ▶ RUBBER CONVEYOR BELTS
- ▶ RUBBER MOULDED PRODUCTS



a. Rubber Granules & Rubber Powder*

Tinna Rubber Crumb Granules are 100% recycled material recovered from end-of-life tyres. Tinna's granules are free from foreign matter which ensure consistent quality of the end product as well. Whereas, the Rubber Powder is the fine, dry and powdered rubber that is comparatively, finer than the granules.

Specifications

Grades	ASH	Acetone Extract	Carbon	Specific Gravity	Polymer	Sieve Passing
5 Mesh	6-7%	12-18%	24-32%	1.13-1.15	Natural Rubber	As per ASTM D-5644
10 Mesh	6-7%	12-18%	24-32%	1.13-1.15	Natural Rubber	As per ASTM D-5644
20 Mesh	6-7%	12-18%	24-32%	1.13-1.15	Natural Rubber	As per ASTM D-5644
30 Mesh	7-8%	12-18%	24-32%	1.13-1.15	Natural Rubber	As per ASTM D-5644
40 Mesh	8-9%	12-18%	24-32%	1.13-1.15	Natural Rubber	As per ASTM D-5644
ASTM Method	D297-15	D297-15	D297-15	D1817		D-5644

Product Application Matrix

Industry	Application	Grades		
		5-20 Mesh	30 Mesh	40 Mesh
Tyres	Tyre Treads			
	Tyre Side Wall			•
	Flaps			•
	Solid Tyres		•	•
	Cycle Tyre		•	•
Industrial	Conveyor Belts		•	•
	Roads (Blending with Bitumen)		•	•
	Hoses & Auto Parts		•	•
	Insulation Sheets	•		
	Rubber Lining	•	•	•
	Rubber Reclamation	•	•	•
Consumer	Sheeting/Matting/Rubber Tiles	•	•	•
	Playground Surface	•	•	•
	Carpet Backing	•	•	•
	Footwear			•



*5-10 mesh - rubber granules & 10-40 mesh - rubber powder

b. Micronized Rubber Powder-(MRP) (80 mesh-170 mesh)

It is a finely powdered rubber processed from 100% used truck/bus radial tyres. This is manufactured using a highly indigenous technology which gives high structure to the rubber particles enabling an enhanced bonding with the polymer. It delivers excellent reinforcing properties in all kinds of rubber compounds. In order to get a uniform dispersion, the MRP is added in the early stage of mixing.

Specifications

Grades	Sieve Passing (min)	Ash	Acetone Extract	Carbon	Specific Gravity	Polymer
Tinna 3R 175	85%	11-12.5%	12-18%	24-32%	1.13-1.15	Natural Rubber
Tinna 3R 125	80%	12-14%	12-18%	24-32%	1.13-1.15	Natural Rubber
Tinna 3R 100	80%	14-16%	12-18%	24-32%	1.13-1.15	Natural Rubber
Tinna 3R 75	90%	14-16%	12-18%	24-32%	1.13-1.15	Natural Rubber
ASTM Method		F-2308	F-2646	F-2304	F-2309	

Product Application Matrix

Industry	Application	Grades			
		Tinna 3R 175	Tinna 3R 125	Tinna 3R 100	Tinna 3R 75
Tyres	Tyre Treads	•	•	•	•
	Tyre Side Walls	•	•	•	•
	Radial Tyres	•	•	•	•
	Solid Tyres	•	•	•	•
	Cycle Tyres				
	Re-treads	•	•	•	•
Industrial	Conveyor Belts	•	•	•	•
	Pipes and Tubes	•	•	•	•
	Insulation Sheets	•	•	•	•
	Rubber Lining/EPDM Compounds		•	•	•
	Moulded Components	•	•	•	•
Consumer	Sheeting/Matting	•	•	•	•
	Playground Surface				
	Carpet Backing	•	•	•	•
	Footwear	•	•	•	•



c. Reclaim Rubber

It is grain less and free from foreign matter which helps as a replacement to virgin polymer, thus contributing in cost savings without compromising on the quality of end product. It is 100% strained and free from carcinogenic materials. Tinna makes use of 100% used truck/bus radial tyres and produces crumb rubber in-house, without compromising on any aspect of quality and by complying with all norms. This is an important raw material which is used in the production of reclaim rubber, thus ensuring consistency as well as good quality of the final product.

Specifications

Sl. No.	Parameters	Grades				Test Method
		TINNA R100	TINNA R200	TINNA R300	TINNA R400	
Chemical Properties						
1.	Ash Content %	Max. 10	Max. 10	Max. 10	Max. 10	D 297-18
2	Acetone Extract %	12-20	12-20	12-20	12-20	D 297-18
3	Specific Gravity	1.13±0.02	1.13±0.02	1.13±0.02	1.13±0.02	D 297-93
4	Carbon Black %	27±2	27±2	27±2	27±2	E 1131
5	RHC by Difference %	48-52	48-52	48-52	48-52	E 1131
Rubber Physical Properties						
1	Tensile Strength (MPA)	5-6	6-7	7-8	8-9	D 412
2	Elongation at Break (%)	Min. 200	Min. 220	Min. 240	Min. 240	D 412
3	Hardness (Shore A°)	Min. 60	Min. 60	Min. 60	Min. 60	D 2240
4	Moony Viscosity ML ₁₊₄	30-50	40-60	40-70	40-80	D 1646

Product Application Matrix

Industry	Application	Grades			
		TINNA R100	TINNA R200	TINNA R300	TINNA R400
Tyres	Tyre Treads				
	Tyre Side Walls	•			
	Tyre Bead Compound				•
	Flaps		•	•	•
	Solid Tyres		•	•	•
	Cycle Tyres	•	•		
	Re-tread				•
Industrial	Conveyor Belts		•	•	•
	Pipes and Tubes			•	•
	Impact Modification			•	•
	Insulation Sheets	•	•	•	•
	Rubber Lining	•	•		
	Cable Compounds			•	
	Moulded Components			•	•
Consumer	Sheeting/Matting	•	•	•	•
	Playground Surface	•	•	•	•
	Carpet Backing	•	•	•	•
	Footwear	•	•		



PRODUCT PORTFOLIO - ROAD SECTOR

- ▶ HIGHWAYS & EXPRESSWAYS
- ▶ RURAL ROADS



a. Crumb Rubber Modifier (CRM)

Tinna has pioneered the concept of rubberised Bitumen in India and had laid 48 test tracks across India in 1998. Tinna is the largest producer of CRM which has been used to build 2 Lac lane kilometres of roads across the nation.

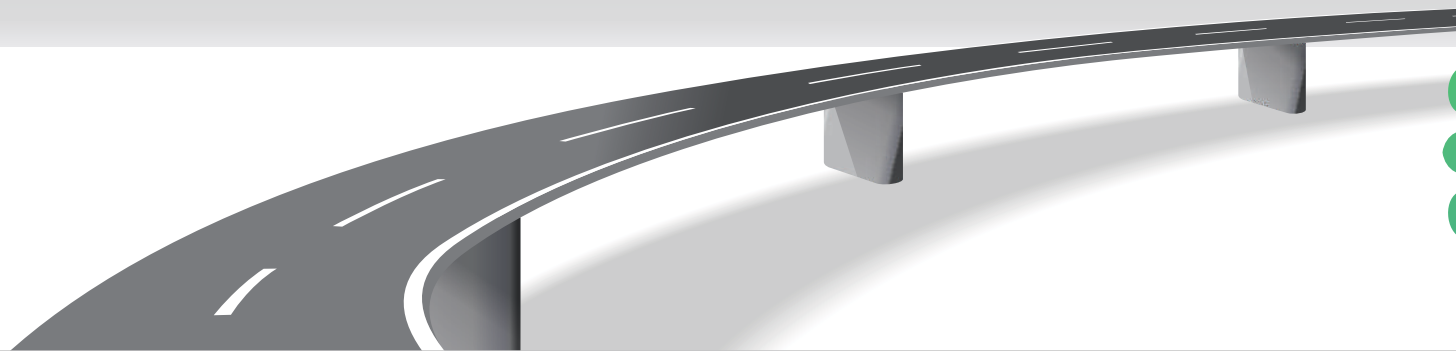


b. Crumb Rubber Modified Bitumen (CRMB)

The Crumb Rubber Modified Bitumen (CRMB) is a blend of CRM with Bitumen in a specified ratio which offers sustainable & long lasting roads. This not only helps in saving natural resources but also is a prime example of circular economy.

Advantages of Using CRMB

- ▶ It increases resistance to degradation at high and low temperatures
- ▶ It maintains its properties during storage, application and in service
- ▶ It is suitable to withstand all weather conditions in highways, dense traffic roads and more
- ▶ Roads made with CRMB do not oxidise fast and hence, they remain black for a longer period



c. Bitumen Emulsion

Tinna Rubber & Infrastructure Ltd. is distinguished for its wide range of high quality bituminous products. Tinna has state-of-the-art fully computerised sophisticated plant capable of producing 12 TPH Bitumen Emulsion of a very high quality. The plant is imported from ENH Engineering, Denmark-World leaders in asphalt modification machinery manufacturing.

- ▶ **Cold-mix Emulsions**
- ▶ **Micro Surfacing Emulsion**
- ▶ **Green Pave Rapid Setting Emulsion**
- ▶ **Recycling Grade Emulsion**

Tinna introduces the following products for environmental friendly and economical cold mix technology meeting the requirements of National Rural Road Development Authority (NRRDA) specifications and IRC: SP: 100

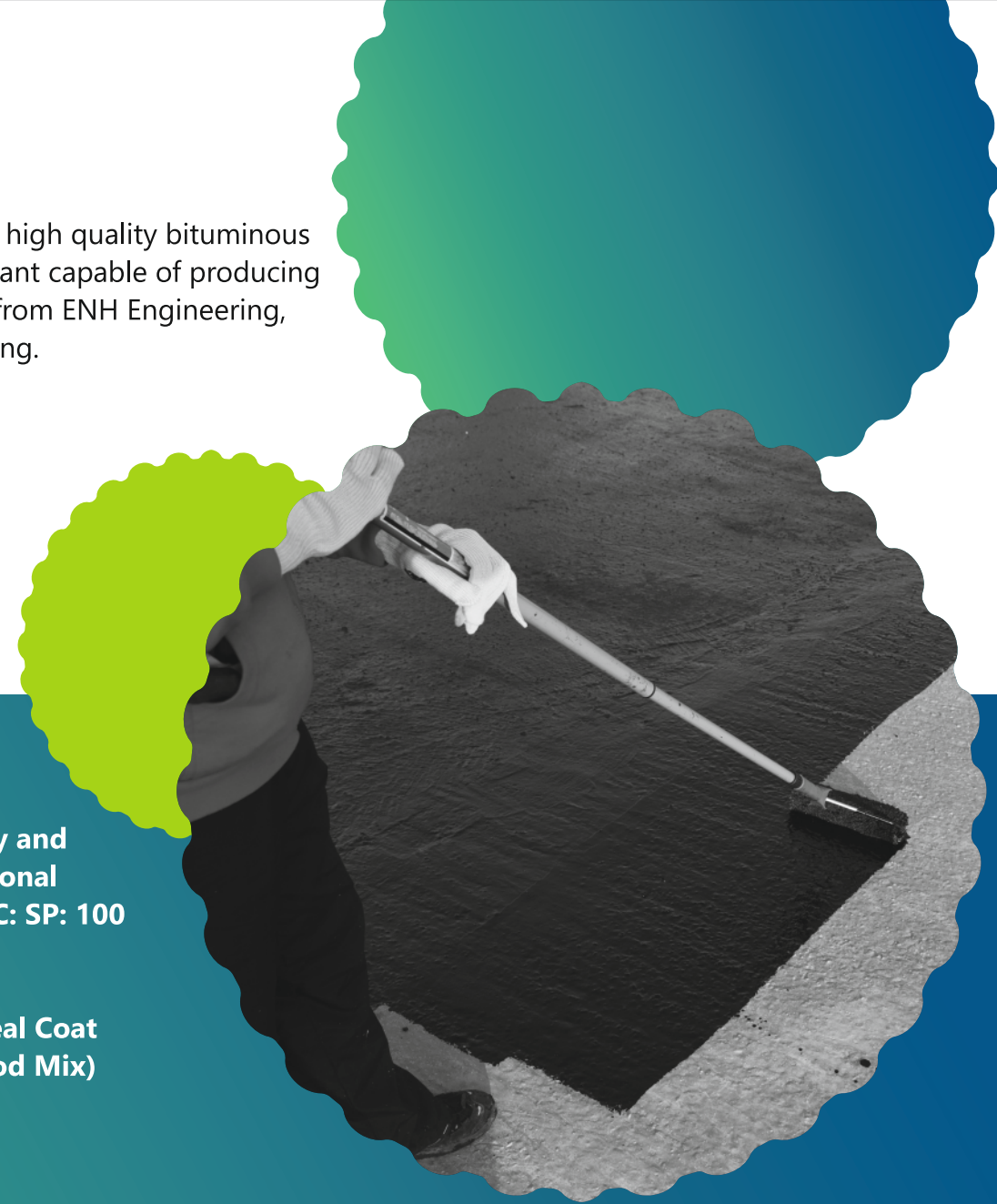
RS-1 Grade Cationic Bitumen Emulsion for Tack Coat

RS-2 Grade Cationic Bitumen Emulsion for Surface Dressing and Seal Coat

MS Grade Cationic Bitumen Emulsion for Open Graded Pre-Mix (Cod Mix)

SS-1 Grade Bitumen Emulsion for Prime Coat

SS-2 Grade Bitumen Emulsion Cold Mixes (BM and SDBC)

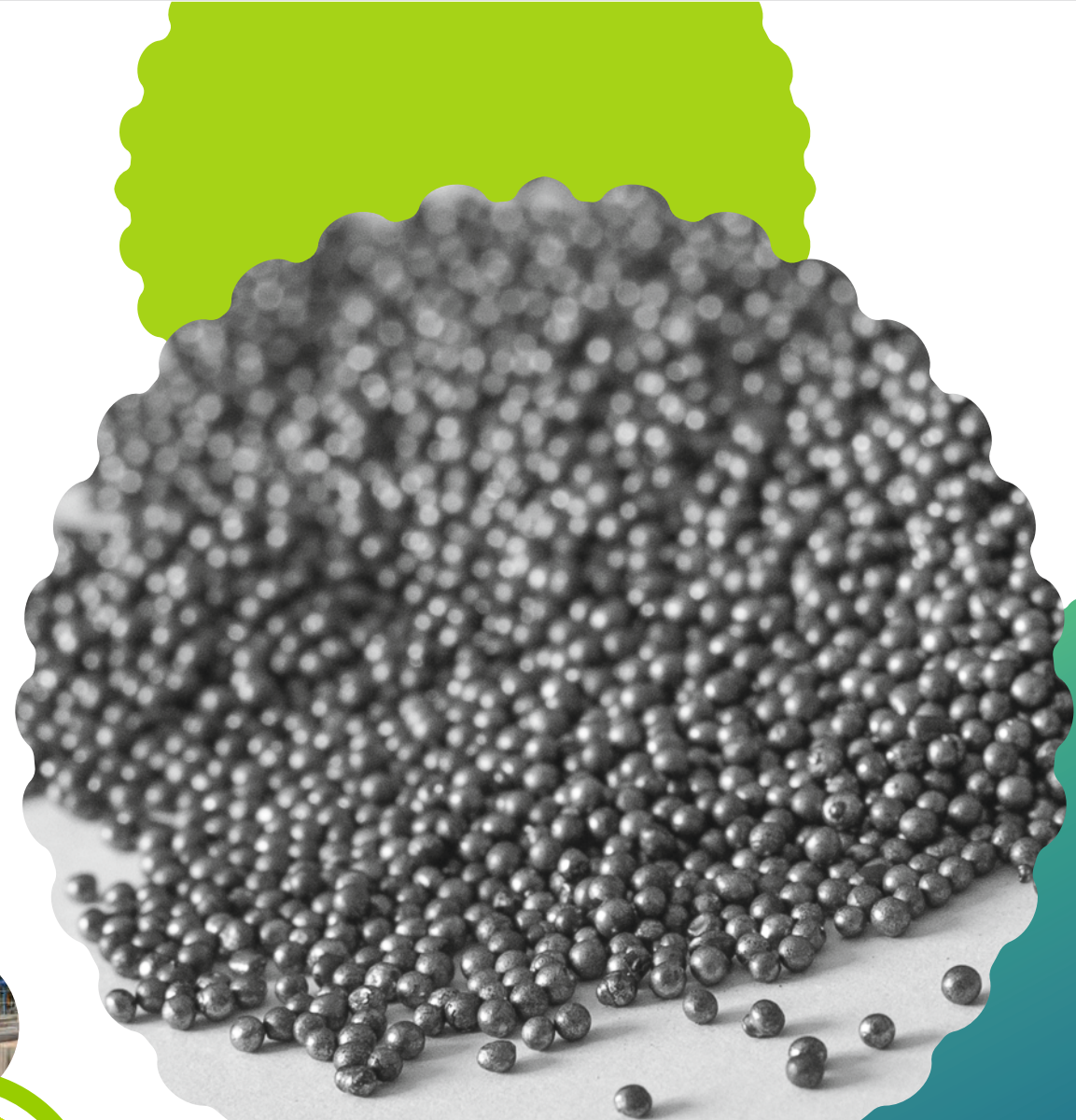
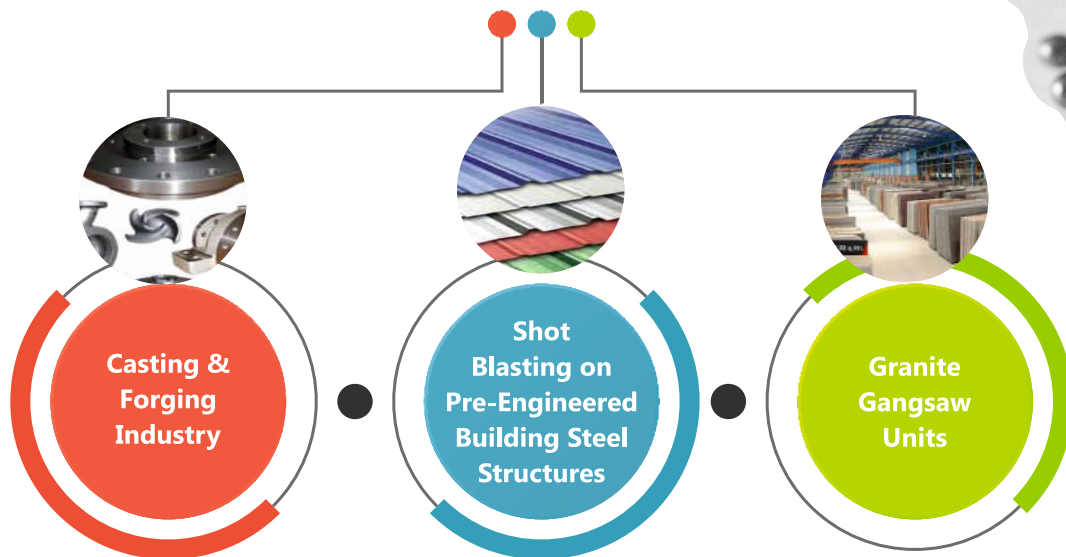


STEEL PRODUCTS

Steel is an integral part of waste tyre, which is being converted into a value-added product. It is used for surface preparation and in casting & forging industry for shot blasting.

APPLICATIONS OF STEEL

Steel Wires Cleaned and
Converted into Cut Wire Shots



CARING FOR ENVIRONMENT



4 MILLION TYRES
saved from illegal oil extractions by
Tinna in FY-23*



**REDUCED
300,000 TONS**
approx. CO₂ emission by recycling of
waste tyres supplied by Tinna in FY-23*



15,000 LANE KM
have been laid using recycled materials
supplied by Tinna in FY-23



TINNA GROUP OF COMPANIES

Annual revenue of approx. USD 100 million

Employing over 1200 people



Trading Agriculture Commodities

- ▶ Leading trader in grains, pulses and Oilseeds
- ▶ Over 100,000 MT of agriculture product under management



Vineyards and Winery at Akuj, Maharashtra

- ▶ 2nd largest Indian wine brand
- ▶ 260 acre vineyard estate

FRATELLI



Innovative Chemicals for Construction

- ▶ Technical tie-up with **Nippon Shokubai, Japan**
- ▶ Specialise in new edge product PCE based Plasticisers





Tinna[®]
Caring for Environment

Tinna Rubber and Infrastructure Limited

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