



SATRIND

SHREDDING SOLUTIONS since 1982

Engineering , manufacturing and installation
of industrial shredders

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About ourselves

Our numbers

- ❑ **27** years of experience
- ❑ **55** employees
- ❑ **5.000** m² of surface
- ❑ Models from **10** to **400** Hp
- ❑ **75** different models
- ❑ From **150** to **200** shredders manufactured every year
- ❑ Over **3.000** shredders installed
- ❑ Turnover around **14** mln €
- ❑ Present in **5** continents with **40** dealers
- ❑ **ISO 9001** certified



Our strong points

- ❑ Experience
- ❑ Competence
- ❑ Innovation
- ❑ R&D
- ❑ Leadership
- ❑ Technology
- ❑ Know how
- ❑ Market knowledge
- ❑ Quality
- ❑ Credibility
- ❑ Competitive

About ourselves

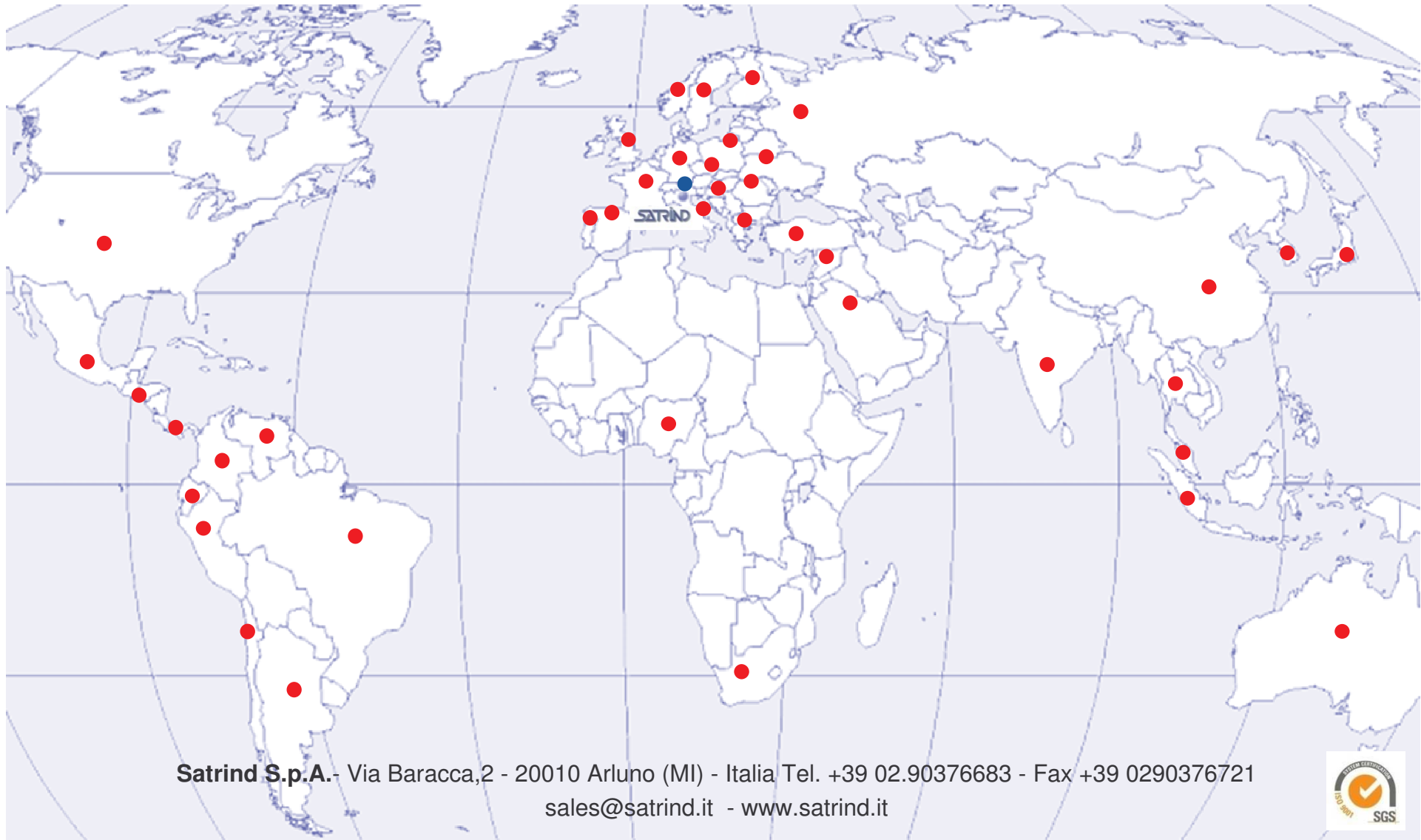
Satrind's Mission

Our winning formula is to work together with partners which are experts in their field of application.

By cooperating with specialized companies and by integrating our know-how and consolidated experience, jointly, we can offer innovative technical solutions for complete systems that satisfy very specific requirements.

About ourselves

Satrind worldwide network



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About ourselves

Satrind's solutions

Shredders designed for complete tailored solutions for the collection, transport or inertization of any type of waste.

From the machines ..



.. To complex plants designed to process industrial waste and municipal solid waste.

Our products

Satrind's shredders

- ❑ Single shaft shredder
- ❑ Two shaft shredder
(electric and hydraulic models)
- ❑ Three shaft shredder
(electric and hydraulic models)
- ❑ Four shaft shredder
- ❑ Waste crusher

And the shredder components:
blades, shafts and the electronic
control system



Our products

Single shaft shredder

Innovative single rotor, two strokes ram design developed to obtain uniform pieces of small dimensions, suitable to light materials.

Very high cutting force.

Easy cleaning and low maintenance.



High speed rotor with fixed blades



Our products

Electric two shaft shredder

**F410, F515, K25
and K30**



Technical Details

- ❑ **Shredding surface:** from 368x500 mm to 1.258x850 mm
- ❑ **Output:** from 10 to 150 mm
- ❑ **Capacity:** up to 2 t/h depending on the material type
- ❑ **Power(e-motor):** from 7,5 to 22kW
- ❑ **Rotor speed:** from 8 to 20rpm
- ❑ **Weight:** from 650 to 4.400Kg

Principal applications

- ❑ Plastic
- ❑ Rubber
- ❑ Hospital waste
- ❑ Catering waste
- ❑ Plastic drums

Our products

Hydraulic two shaft shredder

**K50, 2R75, 2R100SD,
2R150SD, 2R150,
2R220 and 2R300**



Technical Details

- ❑ **Shredding surface:** from 758x850 mm to 1.960x1.100 mm
- ❑ **Output:** from 30 to 200 mm
- ❑ **Capacity:** up to 40 t/h depending on the material type
- ❑ **Power (hydraulic transmission):** from 37 to 235 kW
- ❑ **Rotor speed:** from 11 to 20 rpm
- ❑ **Weight:** from 3.000 to 12.000 Kg

Principal applications

- ❑ Car and truck tires
- ❑ Municipal solid waste
- ❑ Industrial waste
- ❑ Hazardous waste
- ❑ Bulky waste
- ❑ Steel drums

With additional seal front-walls separated from the main flanges in order to have most important and expensive components better protected from wear and tear

Our products

Two shaft shredder details



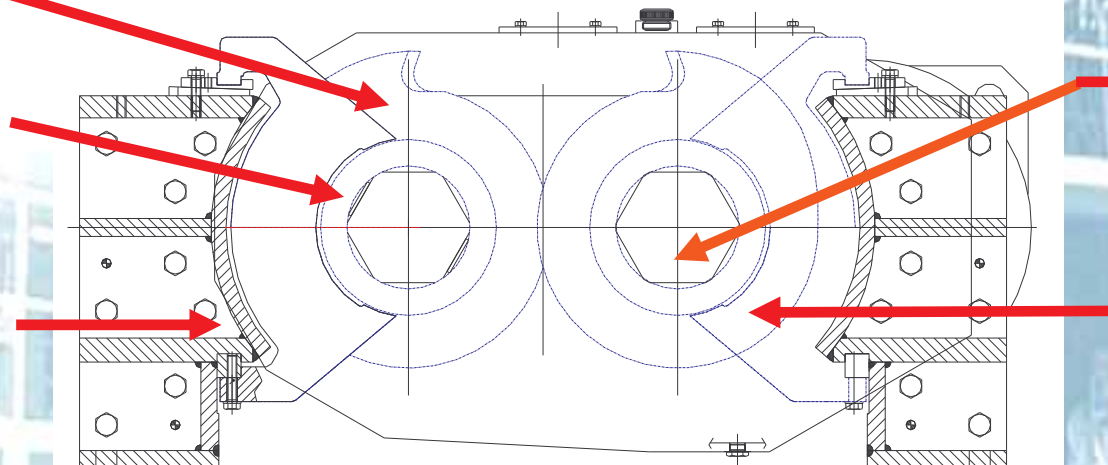
Blades

Cleaning
fingers

Contoured
sidewall

Hexagonal
shaft

Spacers



Our products

Electric three shaft shredder

3K30 and 3k60 with selection screen



Technical Details

- ❑ **Shredding surface:** from 488x525 mm to 1.250x760 mm
- ❑ **Output:** specific size from 15 to 90 mm
- ❑ **Capacity:** up to 1,5 t/h depending on the material type
- ❑ **Power (e-motor):** from 22 to 44 kW
- ❑ **Rotor speed:** from 11 to 41 rpm
- ❑ **Weight:** from 1.400 to 7.200 Kg

Principal applications

- ❑ Plastic
- ❑ Rubber
- ❑ WEEE
- ❑ Refrigerators
- ❑ Plastic drums

Incorporating a screening system designed to guarantee a specific final shred size.

Our products

Hydraulic three shaft shredder

**3K80,3R125 and
3R320** with selection
screen



Technical Details

- ❑ **Shredding surface:** from 750x760 mm to 1.950x1.250 mm
- ❑ **Output:** specific size from 30 to 150 mm
- ❑ **Capacity:** up to 20 t/h depending on the material type
- ❑ **Power (hydraulic transmission):** from 37 to 235 kW
- ❑ **Rotor speed:** from 17 to 30 rpm
- ❑ **Weight:** from 7.000 to 16.000 Kg

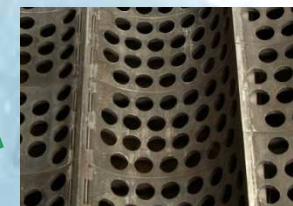
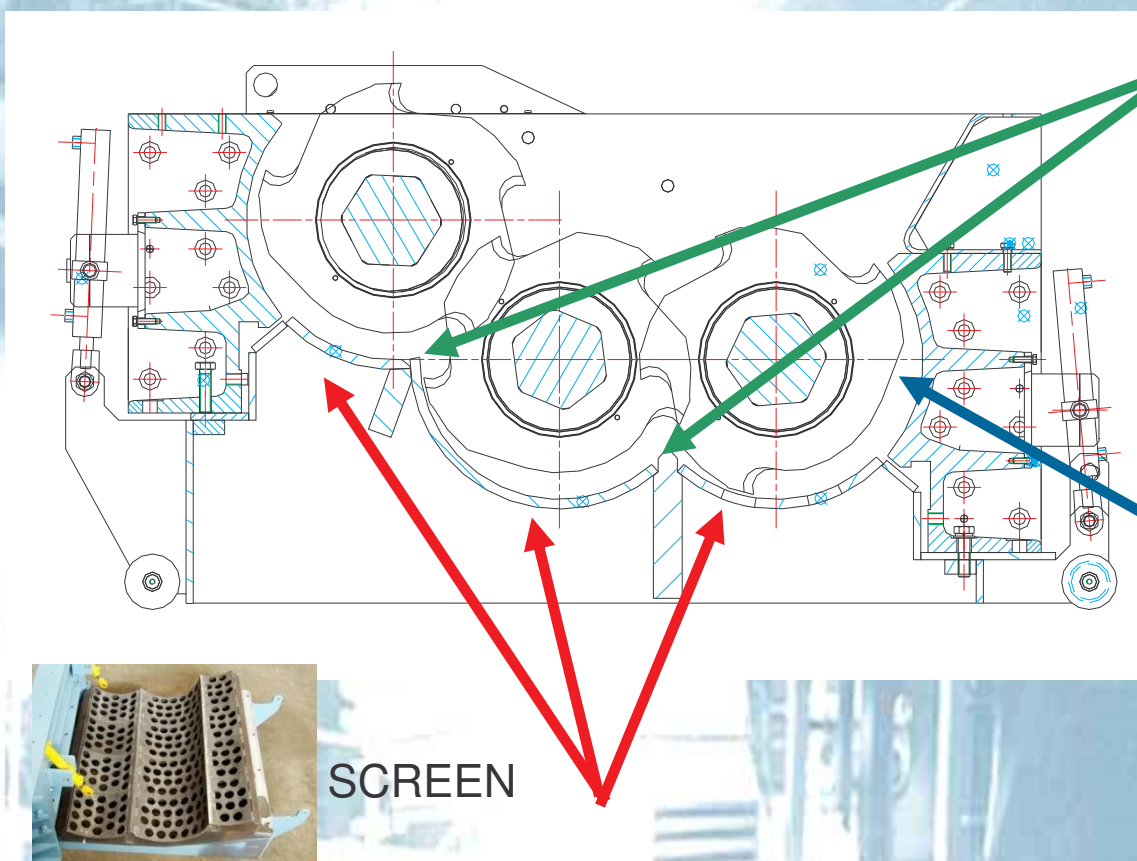
Principal applications

- ❑ Municipal solid waste
- ❑ Hazardous waste
- ❑ WEEE
- ❑ Industrial waste
- ❑ Refrigerators

**Incorporating a screening
system designed to
guarantee a specific final
shred size.**

Our products

Three shaft shredder details



COUNTER-BLADES



BLADES



SCREEN

Our products

Four shaft shredder

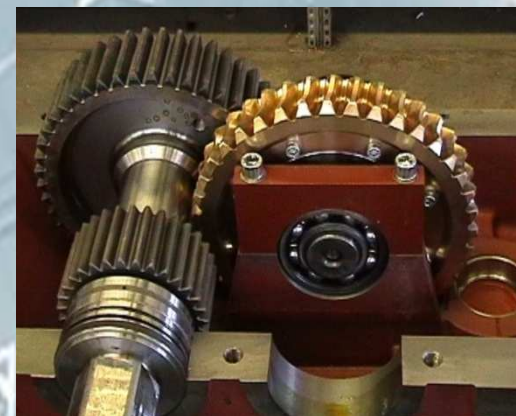
High volume
shredding



Slow speed, high torque
shredder

Our products

Other components of Satrind's shredder



Our products

Waste crusher

T20/200 and T30/400



Technical Details

- ❑ **Shredding surface:** from 2.000x1.500 mm to 2.700x1.500 mm
- ❑ **Output:** from 100 to 400 mm
- ❑ **Capacity:** up to 100 t/h depending on the material type
- ❑ **Power (hydraulic transmission):** from 132 to 264 kW
- ❑ **Rotor speed:** from 25 to 40 rpm
- ❑ **Weight:** from 12.000 to 24.000 Kg

Principal applications

- ❑ Municipal solid waste
- ❑ Bulky waste
- ❑ Industrial waste
- ❑ Hazardous waste

High-capacity feeding hopper, easily detachable for a quick disassembling of the shafts which guarantees a quick and easy maintenance.

Our products

Waste crusher components

All the carpentry is made of solid steel, designed to withstand the heavy mechanical stresses generated during shredding.

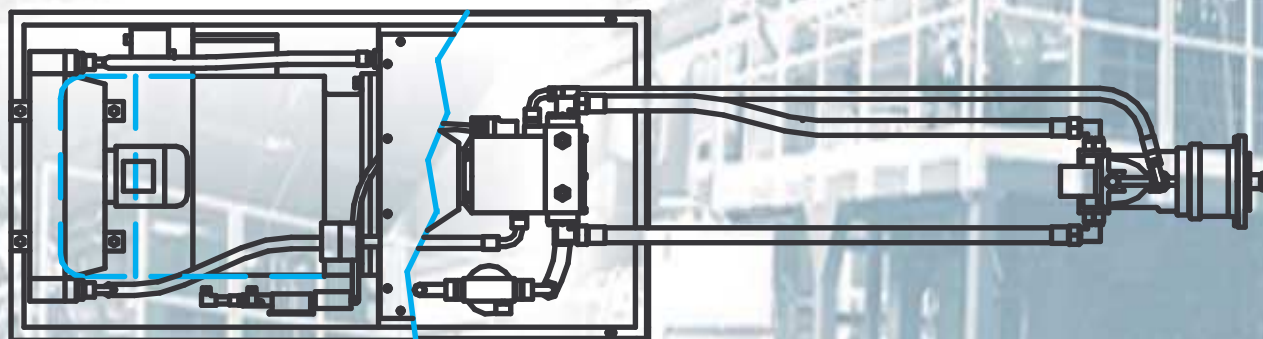
Counterblades separated from body structure, easily detachable to guarantee fast maintenance.



Our products

Hydraulic drives

- ❑ The shredder is driven by fixed displacement axial piston hydraulic motor, powered by a variable flow rate pump assembled into the hydraulic power packs.
- ❑ The pump is connected through a mechanical coupling to the electric motor which is driven by the control panel.



Our products

The electronic control system

The electronic control system installed in the switchboard allows for constant power shredder operation:

- ❑ When the load on the blades increases because of very tough material, the pumps displacement are reduced proportionally to the rising pressure.
- ❑ Since the power used is proportional to pressure and displacement, a very regular electric motor operation is obtained without heavy overloading. Thus the hydraulic shredder, with a relatively low installed power, is able to process very tough materials.

Satrind's shredder blades

THE MOST RUGGED & RELIABLE BLADES EVER BUILT!

- ❑ **Unique:** none of the blades available on the market could satisfy the high standards set for our shredders.
- ❑ **Quality:** un-rivalled quality on the market to guarantee the best performance and reliability
- ❑ **Experience** and **knowledge** in identifying the most efficient process to manufacture shredder blades

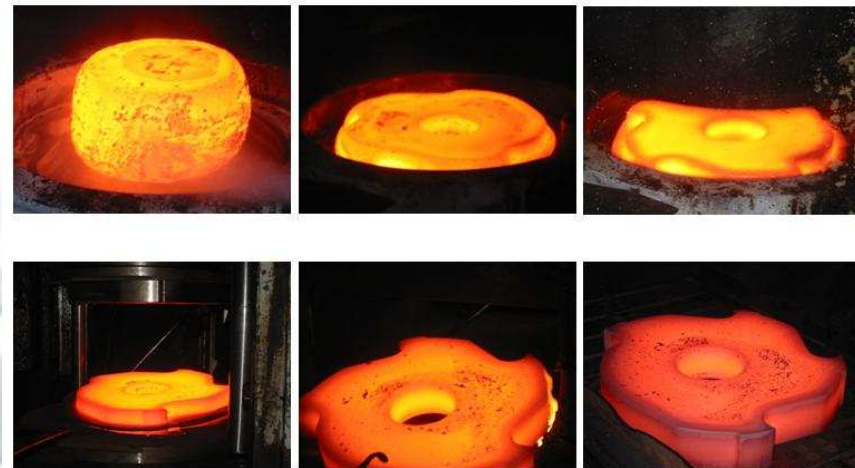
Satrind's shredder blades

Manufacturing process: STEP 1

It all starts with an minimum order from the foundry for 100 Tons of special steel prepared to Satrind's specifications

The steel is delivered in billets which are **hot forged** into a mould of a predefined profile

This allows to have an optimal **distribution of the steel fibers** guaranteeing a higher internal resistance and reducing the risk of microcracks during shredding which is the principal cause of blade damage



Satrind's shredder blades

Manufacturing process: STEP 2



The blade hexagon, hook(s) and surface are machined to predetermined tolerances.

Satrind's shredder blades

Manufacturing process: STEP 3



Blades placed in a high temperature furnace.

Blades dipped in a bath of special salts or oil, depending on the thickness, to bring them back to ambient temperature.

The blades are through hardened to obtain the same hardness (52-56 hrc) in the core as on the surface. This allows to resharpen the blades several times.



Satrind's shredder blades

Manufacturing process: STEP 4



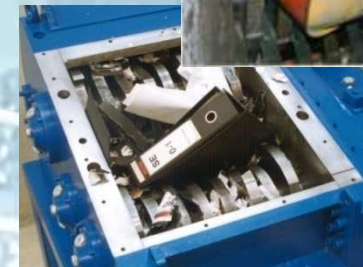
The blades can now be machined to their final thickness.



This process developed by Satrind specifically for shredder blades will guarantee the longest blade lifetime and the lowest maintenance cost in the industry

Shredding applications

- ❑ Hazardous waste
- ❑ Industrial waste
- ❑ Municipal solid waste
- ❑ Bulky waste
- ❑ Electronic equipment waste
- ❑ Refrigerators
- ❑ Tires
- ❑ Plastic
- ❑ Confidential document
- ❑ Pulper waste
- ❑ Hospital/Pharmaceutical waste
- ❑ Automotive oil filters
- ❑ Catering waste from ship



References

Shredding of hazardous and industrial waste



Application: **hazardous industrial waste**
for cement plant alternative fuel

Shredder Model: **3R15/320**

Customer: **Geocycle (Holcim Group)**

Location: **SPAIN**



Application: **industrial waste** for
cement plant alternative fuel

Shredder Model: **3K15/280**

Customer: **SIAM CITY Cement Public Corporation LTD. (Holcim Group)**

Location: **THAILAND**

References

Shredding of hazardous and industrial waste



Application: **hazardous industrial waste** for cement plant alternative fuel

Shredder Model: **3R15/320**

Customer: **Holcim Group**

Location: **ROMANIA**



Application: **hazardous industrial waste** for cement plant alternative fuel

Shredder Model: **2K20/220**

Customer: **Cemento Polpaico (Holcim Group)**

Location: **CHILE**

References

Shredding of hazardous and industrial waste



Application: highly flammable **hazardous industrial waste** for cement plant alternative fuel

Shredder Model: **K15/200** with nitrogen blanketing protection system

Customer: **Energis S.A. (Holcim Group)**

Location: **SPAIN**



Application: **hazardous industrial waste**

Shredder Model: **3R15/320**

Customer: **ECOS srl**

Location: **ITALY**

References

Shredding of hazardous and industrial waste



Application: **hazardous industrial waste**
for cement plant alternative fuel

Shredder Model: **F15/150**

Customer: **Scoribel (Holcim Group)**

Location: **BELGIUM**



Application: **hazardous industrial waste**

Shredder Model: **K20/200**

Customer: **CHINA TIANCHEN
CHEMICAL ENGINEERING
CORP.**

Location: **CHINA**

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References

Shredding of hazardous and industrial waste



Application: **industrial waste**

Shredder Model: **F15/150**

Customer: **Kualiti Alam Sdn. Bhd.**

Location: **MALAYSIA**



Application: **hazardous industrial waste**

Shredder Model: **3K15/250**

Customer: **Citron**

Location: **FRANCE**

Some further references...

Shredding of hazardous and industrial waste

Shredder model	Customer/Location	Application
3K15/280	Geocycle (Holcim Group) <i>France</i>	Shredding of hazardous industrial waste for cement plant alternative fuel
3K15/250	Nishin Tokio Kosan <i>Japan</i>	Shredding plant for RDF
3K15/280	Recycle Earth <i>Japan</i>	Shredding plant for RDF
3K15/280	Yasuda Industry <i>Japan</i>	Shredding plant for RDF
3K15/280	Frontier <i>Japan</i>	Shredding plant for RDF
F15/150	Resotec (Holcim Group) <i>Brazil</i>	Shredding of hazardous industrial waste for cement plant alternative fuel
2R20/220 3R15/320	ÇÖZÜM ENDÜSTRİYEL ATİK ISLEME SAN.VE TIC.A.S. <i>Turkey</i>	Shredding of industrial waste for cement plant alternative fuel

Some further references...

Shredding of hazardous and industrial waste

Shredder model	Customer/Location	Application
3K13/100	Hoyer <i>France</i>	Shredding of hazardous industrial waste for cement plant alternative fuel
3R20/320	TMT S.p.A. Tecnitalia (Veolia) <i>Italy</i>	Shredding of industrial waste to produce RDF
3K15/280	Verdeazzurro <i>Italy</i>	Shredding of industrial waste to produce RDF
F15/150 3K10/60	ONYX SARP <i>Metz -France</i>	Shredding of hazardous industrial waste for cement plant alternative fuel or incineration
F15/150 3K10/60	SARP <i>Courrieres -France</i>	Shredding of hazardous industrial waste for cement plant alternative fuel or incineration
3K15/280	CGEA ONYX <i>Petkim -Turkey</i>	Shredding of hazardous industrial waste for cement plant alternative fuel or incineration
F20/150	GCEA ONYX <i>(Champagne Sur Oise -France)</i>	Shredding of hazardous industrial waste for cement plant alternative fuel

References

Shredding of bulky waste and municipal solid waste



Application: **municipal solid waste**

Shredder Model: **T30/400**

Location: **ITALY**



Application: **municipal solid waste**

Shredder Model: **T20/200**

Location: **ITALY**

References

Shredding of bulky waste and municipal solid waste



Application: **municipal solid waste**

Shredder Model: **K20/250**

Customer: **IL SAN CONSTRUCTION
CO. LTD.**

Location: **KOREA**



Application: **municipal solid waste**

Shredder Model: **F20/200**

Customer: **A.I.M. Vicenza SPA**

Location: **ITALY**

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References

Shredding of bulky waste and municipal solid waste



Application: **municipal solid waste**

Shredder Model: **2R20/100SD**

Location: **ITALY**



Application: **municipal solid waste** to produce RDF

Shredder Model: **3K20/250**

Customer: **Brenta Servizi SPA**

Location: **ITALY**

References

Shredding of bulky waste and municipal solid waste



Application: **Bulky waste**

Shredder Model: **F20/150**

Customer: **ASWS
INTERNATIONAL SRL**

Location: **ITALY**



Application: **Bulky waste** at MSW incineration plant

Shredder Model: **F20/150**

Customer: **CTCI CORPORATION
PTY LTD.**

Location: **TAIWAN**

Some further references...

Shredding of bulky waste and municipal solid waste

Shredder model	Customer/Location	Application
F20/100	A.M.S.A. <i>Italy</i>	Shredding and composting plant for municipal waste
3K15/250	Fuji Clean <i>Japan</i>	Shredding plant for MSW
3K15/250	Mayer <i>Austria</i>	Shredding for MSW
F20/150	Recyclage des Valees <i>France</i>	Mobile shredding unit for MSW
3K13/50	Hyva Iberica <i>Spain</i>	Shredding of bulky waste
F20/100	Urbaser <i>Spain</i>	Shredding for bulky waste
F20/150	Braval <i>Portugal</i>	Shredding of bulky waste and tires

References

Shredding plant for tires



Application: **car and truck tires** for cement plant alternative fuel

Shredder Model: **2R20/300**

Customer: **Cessa (Holcim Group)**

Location: **EL SALVADOR**



Application: mobile shredding unit for **truck and car tires**

Shredder Model: **F20/150**

Location: **NORWAY**

References

Shredding plant for tires



Application: **truck and car tires**

Shredder Model: **2R20/300HT** and **2R15/300HT**

Customer: **G. Hoefle Lda**

Location: **PORTUGAL**



Application: **truck and car tires**

Shredder Model: **2R15/150** and **K10/50**

Customer: **Rubbersolution**

Location: **AUSTRALIA**

Some further references...

Shredding plant for tires

Shredder model	Customer/Location	Application
K15/100 K10/50	M.C.M. <i>Italy</i>	Shredding of car and truck tires
K10/50	RI.ECO <i>Italy</i>	Shredding of car and truck tires
2R15/220	A.A. Neiger <i>Israel</i>	Mobile shredding unit with diesel motor for car and truck tires

Various references

Other examples of shredding plant



Application: **refrigerators**

Shredder Model: **K15/100** and n.2 **3K10/80**

Customer: **Samsung**

Location: **KOREA**



Application: **WEEE**

Shredder Model: **2R15/150** and **3K13/80**

Customer: **CKS**

Location: **UK**

References

Other examples of shredding plant



Application: **hot copper**

Shredder Model: **F515/2P**

Customer: **SAM Swiss Advanced Materials S.A.**

Location: **Switzerland**



Application: **filter paper**

Shredder Model: **K13/50**

Customer: **Ahlstrom Turin SPA**

Location: **ITALY**

References

Other examples of shredding plant



Application: **different types of waste**

Shredder Model: **K10/50**

Location: **VENEZUELA**



Application: **post-consumer plastic**

Shredder Model: **K15/200**

Customer: **Expladan**

Location: **Denmark**

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References

Other examples of shredding plant



Application: **pulper waste**

Shredder Model: **2R20/150**

Customer: **La Cart**

Location: **ITALY**



Application: **hospital waste**

Shredder Model: **K15/200**

Customer: **Butterley Engineering Limited**

Location: **Denmark**

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References

Other examples of shredding plant



Application: **plastic drums and cubitainers**

Shredder Model: **K10/50 with CL system**

Customer: **Hyva Iberica**

Location: **SPAIN**



Application: **automotive oil filters**

Shredder Model: **K10/50 and 3K10/80**

Location: **Australia**

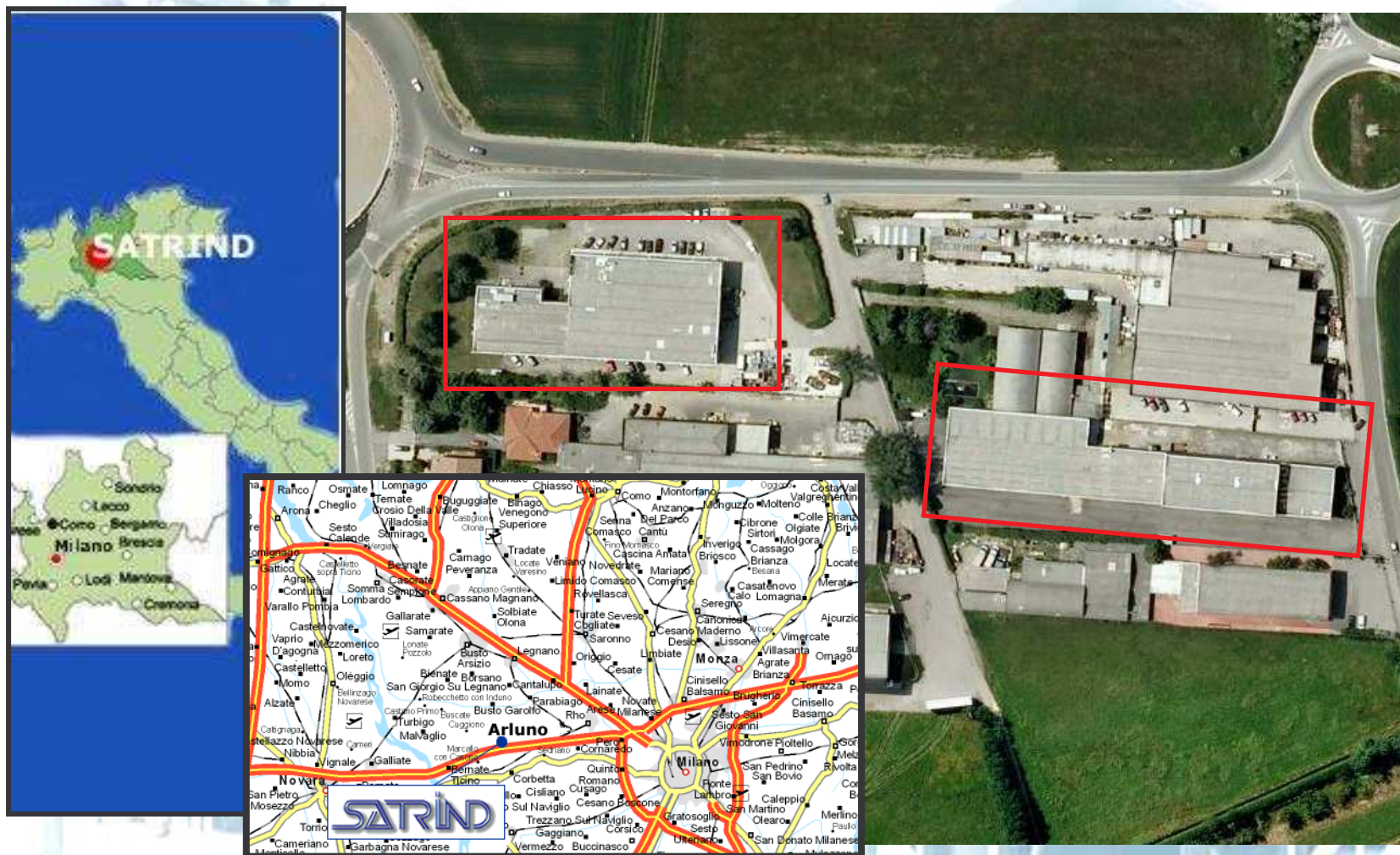
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Our location



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