

Freetech Hot-in-place Recycling Train

No Waste & Less New Mix, High Quality & Efficiency
and Minimum Traffic Interference



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ISO 9001:2008
Certificate No: 02114-02140102M



ISO 14001:2004
Certificate No: 02114-02140102M



OHSAS 18001:2007
Certificate No: 02114-02140102M



公路[®]
医生

Freetech Hot-in-place Recycling Train

- ▶ Fast Move-in & Move-out within 30mins
- ▶ No Breakage of Aggregate, 100% Recycling
- ▶ Dust-Free, Minimum Noise, Zero Wastage & No Disposal
- ▶ Occupy Only One-lane, Minimum Traffic Interference
- ▶ Thermal Bonded Overlay, Quality Meets New-built Road Standard



Scan QR code for 3D Video
of Hot-in-place Recycling



Recycling Project of Chang'an Avenue, Beijing, China ▲

Recycling Process >>>



Video of Remixing Hot-in-place Recycling

> Freetech Remixing Hot-in-place Recycling Train



Heat	Scarify and add rejuvenating agent or hot asphalt	Mix and collect	Form into a windrow (pre-mixing)	Heat the windrow	Add new asphalt mix	Elevate windrow	Heat the surface of underlying layer	Mix	Pave	Compact

- Heat the asphalt pavement with 2-3 sets of **HM16** preheaters.
- Intermittently heat the pavement with multiple heating walls so as to make the asphalt pavement sufficiently heated and softened without overheating or aging.

- Field experiments before recycling determine the type, ratio and amount of rejuvenating agent that should be added.

- High-pressure pulsed heating technology can increase the paving temperature so to ensure the recycled quality .
- Meet the high working temperature needs of modified asphalt mixes such as SBS and SMA pavement.
- Ensure recycling quality in cold winter, which prolongs maintainable period of cold region .

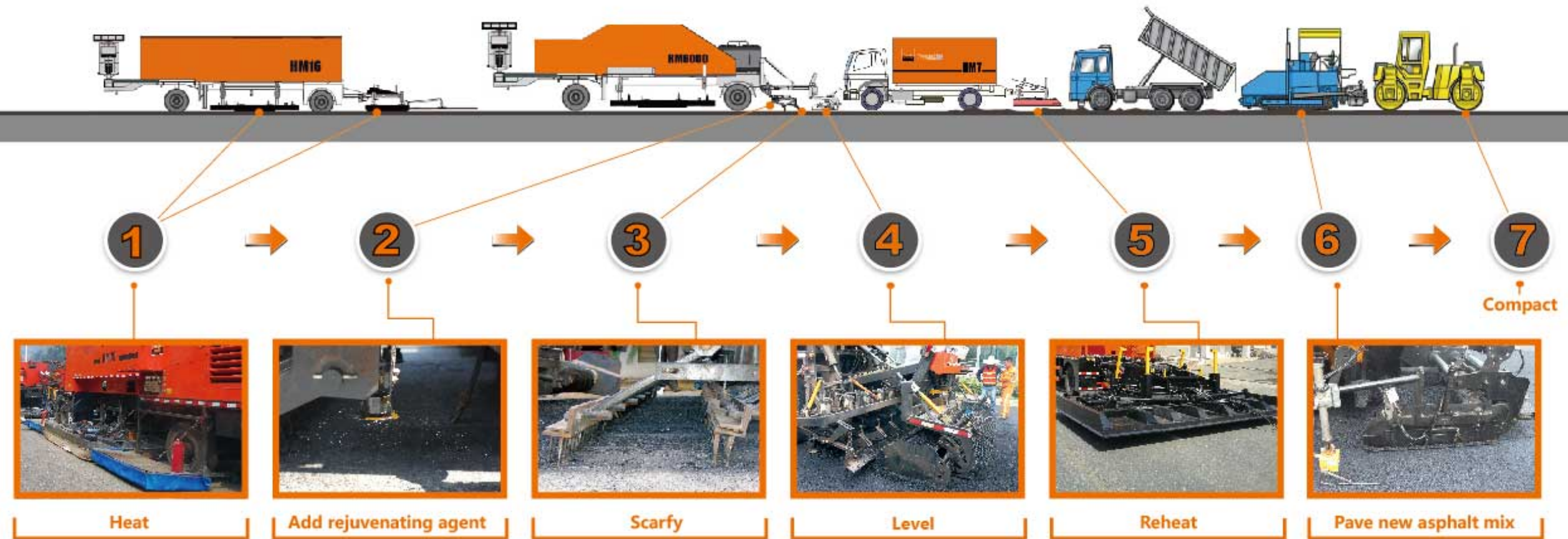
- Based on the pre-set parameters and working speed, the computer automatically controls the amount of new mix.

- After the material is elevated, **EM6500** reheats the surface of the underlying layer to over 100°C so as to ensure the thermal bonding with the recycled layer paved on top.



Video of Repaving Hot-in-place Recycling

> Freetech Repaving Hot-in-place Recycling Train



- Heat the asphalt pavement with 2-3 sets of **HM16** preheaters.
- Intermittently heat the pavement with multiple heating walls so as to make the asphalt pavement sufficiently heated and softened, without overheating or aging.

- Spinning-cup spreading system makes a more uniform spraying work so as to ensure rejuvenating quality.
- Rejuvenation of the old mix only avoids quality problems caused by rejuvenation of newly added asphalt mix.
- Computerized-controlled spraying system ensures precisely adding of rejuvenating agents or hot asphalt.

- With technology of no breakage of aggregate, the original aggregate gradation is maintained and known, which keeps pavement bearing capacity up and is the premise to optimize the pavement gradation.
- Pneumatic rakes with each harrow set of raking teeth under can be independently controlled so that they can proactively move over manholes and other obstacles on city roads.

- Reheating pavement to ensure thermal bonding

Core Equipment >>>

> RM6800 Recycler

RM6800 Recycler has functions of pavement heating, scarifying, adding rejuvenating agent and hot asphalt, collecting recycled asphalt mix into a continuous windrow (pre-mixing). It is the key equipment in Freetech remixing hot-in-place recycling train to ensure no breakage of aggregate and unchange of gradation.



Scarifying and mixing asphalt pavement by pneumatic rakes.



Spraying rejuvenating agent accurately and evenly by electrically-controlled spin-cup spreading system.



Collecting the recycled asphalt mix into a trapezoid-shaped windrow which is further heated to maintain the temperature.

> EM6500 Elevator-mixer

EM6500 asphalt mix elevator-mixer can thermostatically elevate asphalt mix and reheat the the surface of underlying layer, which can furthest avoids asphalt mix segregation and ensures proper mix temperature in all seasons. It can also be used as an asphalt mobile feeder, independently in road building or overlay paving.



After the recycled mix is elevated, the exposed surface of underlying layer is reheated to ensure interlayer thermal bonding.



Recycled mix is remixed and heated to proper paving temperature at the pugmill.



Scraper elevator with left & right spirals avoids mix segregation.

> Main Equipment

HM Series



HM7-TRK



HM16



HM18



HM15

EM Series



EM6500

Pav Series



HiPav5

Freetech Hot-in-place Recycling Train

> HM16 Pre-heater

HM16 Pre-heaters with multiple intermittent radiant heating panels ensure that adequate heating temperature and depth while avoiding overheating or aging which is an important precondition for recycling quality.



Intermittent radiant heating, powerful but efficient



The heating panels use LPG as fuel which is green and efficient.



The function of insulation board is to reduce heat loss and enable proper heat transfer from the surface to the bottom.

> RM6000 Recycler

RM6000 Recycler has functions of pavement heating, adding rejuvenating agent, scarifying and leveling. It is the key equipment in Freetech repaving hot-in-place recycling train.



Spraying rejuvenating agent accurately and evenly by electrically-controlled spin-cup spreading system.



Scarifying and mixing asphalt pavement by pneumatic rakes, which could automatically avoid manholes on municipal roads.



Pre-leveling by screed with hydraulic stepless-width-adjusting auger

> Main Equipment

RM Series



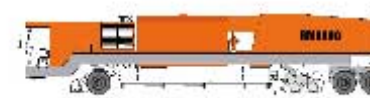
RM6000



RM6800



RM5000



RM8800

TR Series and Others



TR168



TR165



MF10

Advantages >>>

> 1.Environmental protection

100% recycling of the original pavement materials

- **No disposal**
Avoid disposal of waste which will cause environmental pollution and other ecological problems
- **Material saving**
Reduce the demand of pavement materials and thus reduce the impact on the environment by quarrying
- **No dust**
Unlike traditional milling, recycling process does not generate dust



Saw-Break-Fill produces large wasted materials and solid waste pollution.



Quarrying strip the landscape bare.



Milling pavement causes dust pollution.



100% recycling of the original pavement materials helps protect the environment

> 2.Efficient

- Fast recycling speed up to 4–6 m/mins;
- All equipment of the train can be independently towed, so that the train can move-in & move-out within 30mins.



Daily pavement recycling capacity upto 16,000 m².



Hauling & hoisting free, move in & out just by tractors.

Freetech Hot-in-place Recycling Train

> 3.High quality

• No breakage of aggregates

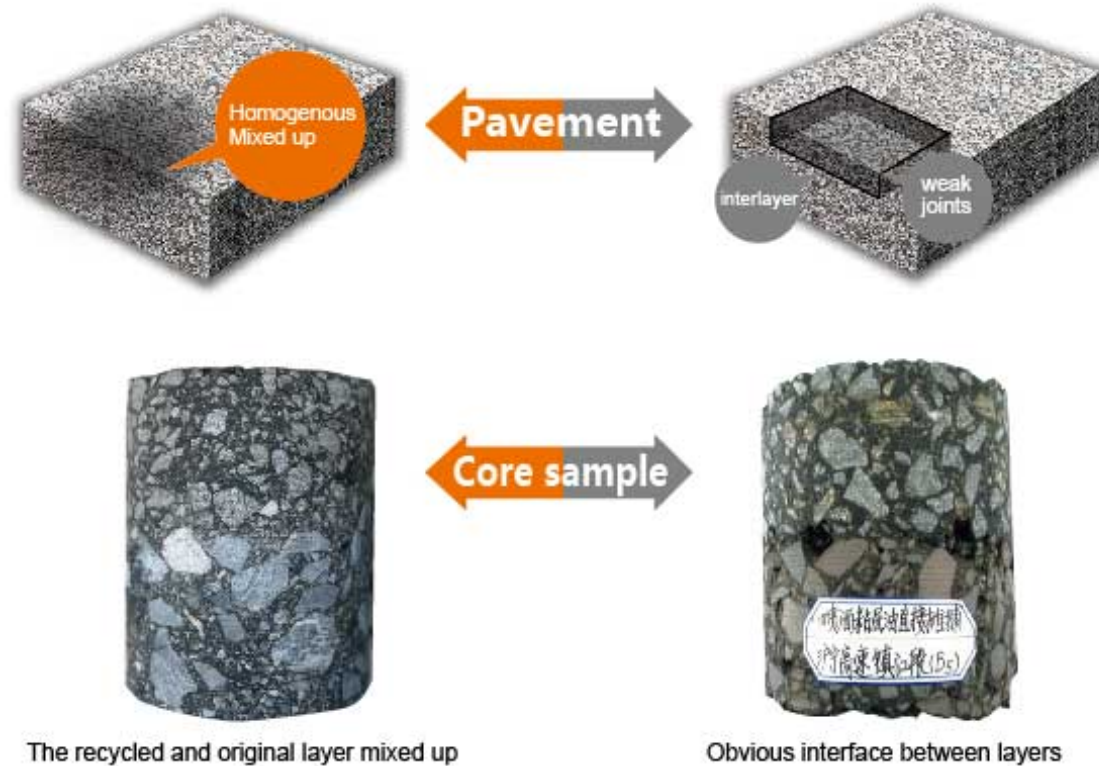
The original aggregate gradation is maintained and known so it is possible for further optimization of gradation and upgrade of pavement performance according to contract requirements.

• Reheat the interlayer surface

Freetech's interlayer thermal bonding technology effectively bonds the recycled layer with the underlying layer into a whole, completely eliminating weak joints on boundaries and between layers as found on traditional methods. The pavement shearing strength will thus be increased while the service life prolonged.

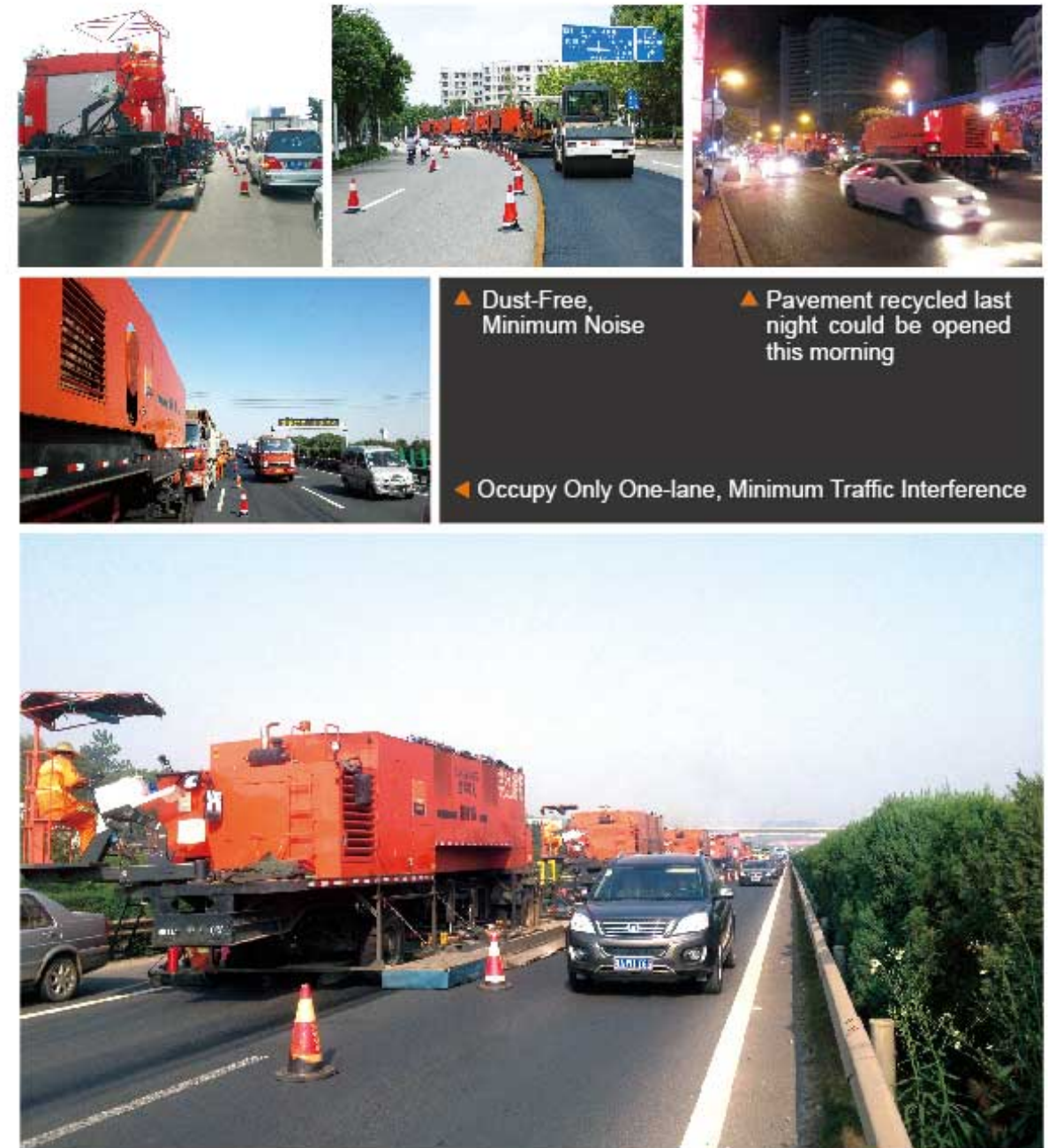
Freetech Hot-in-place Recycling VS Traditional Saw-Break-Fill

- Original Pavement Material
- Newly added Pavement Material



> 4.Non-disturbing

- With minimum traffic interference, the recycling process occupies only one lane, so the other lanes can be open to normal traffic
- Recycling process with minimum dust and noise has the least influence on the public.



Application >>>

> Highway



Wuhan-Yichang



Ningbo, Zhejiang Province



Beijing-Tibet



Boao, Hainan Province



Nanjing-Luoyang



Fuzhou-Yinchuan



Suzhou, Jiangsu Province



Xiamen - Chengdu



Shanghai-Nanjing



Inner Mongolia



Shenyang Liaoning Province



Sinkiang

Freetech Hot-in-place Recycling Train

> Municipal Road



Chang'an Avenue, Beijing



Nanjing Youth Olympic Games



Urumqi Asia-Europe Expo



Guangzhou Asian Games



Tongliao, Inner Mongolia



Guizhou International Big Data Expo



Ningbo, Zhejiang Province



PRC National Games



Xiamen, Fujian Province



Xi'an, Shansi Province



Chongqing



Shanghai



Nanjing, Jiangsu Province

> Other Application



Huanghua International Airport, Changsha, Hunan Province



Zhanjiang Airport, Guangdong Province