

**VIATOP<sup>®</sup> plus**

**Das Pellet.**

Compaction enhancement and temperature reduction  
for ALL types of SMA mixes!

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**VIATOP<sup>®</sup> plus CT 40**

**Das Pellet.**

**J. RETTENMAIER & SÖHNE**  
GMBH + CO KG

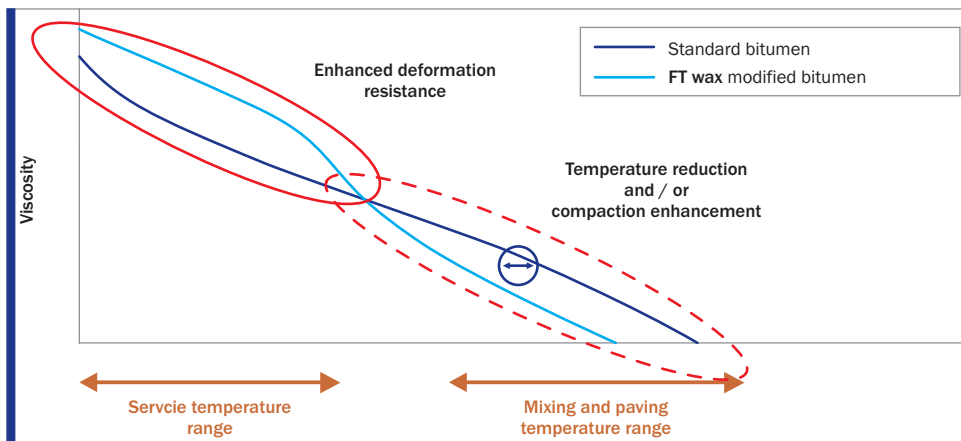


Fibers designed  
by Nature

### Innovative pellets for the modification of bituminous mixtures

**VIATOP® plus CT 40** is a pelletized blend of 60 % by weight cellulose fibers **ARBOCEL® ZZ 8/1** and 40 % by weight Fischer-Tropsch wax.

Besides the use in ALL types of SMA mixes, **VIATOP® plus CT 40** can also be applied for AC Duopave, the dual asphalt layer, combining the performance of a base course layer with the properties of a surface layer.



#### Recommended dosage:

Depending on the type of asphalt mix the dosage level should be in the range of 0.35 to 0.5 % by weight of the asphalt mix.

Challenge	Lösung
High compaction resistance	<b>VIATOP® plus CT 40</b> reduces compaction resistance to get an easier and effective compaction
Deformation / Rutting	<b>VIATOP® plus CT 40</b> increases the resistance to permanent deformation
Warm Mix Asphalt	<b>VIATOP® plus CT 40</b> ensures a proper compaction, even at reduced application temperatures
Difficult application conditions	<b>VIATOP® plus CT 40</b> improves application behavior, especially in case of manual works
Application under cold weather conditions	<b>VIATOP® plus CT 40</b> allows paving and compaction even under unfavorable weather conditions
High CO <sub>2</sub> and bitumen fumes emissions during asphalt production process	<b>VIATOP® plus CT 40</b> reduces bitumen fumes and CO <sub>2</sub> process emissions due to lower mixing temperatures
Need for long term and high quantity orders for low viscous binders	<b>VIATOP® plus CT 40</b> offers high flexibility due to short time availability and individual packaging sizes
Need for extended hauling or storing of the asphalt mix	<b>VIATOP® plus CT 40</b> reduces the viscosity of the binder, hence no need to superheat the asphalt mix to overcome compaction problems

**VIATOP<sup>®</sup> plus**

**Das Pellet.**

**Innovative Pellets for  
Modified Asphalt Mixtures**

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**VIATOP<sup>®</sup> plus FEP**

**Das Pellet.**

**J. RETTENMAIER & SÖHNE**  
GMBH + CO KG



Fibers designed  
by Nature

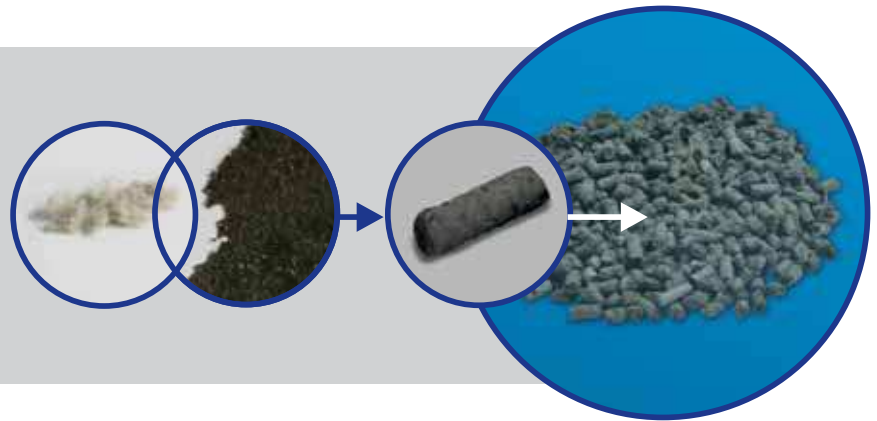
## Innovative Pellets for Modified Asphalt Mixtures

### **VIATOP® plus FEP**

is a pelletized blend of:

**20 % by weight**  
ARBOCEL® ZZ 8/1

**80 % by weight**  
Functional additive



### **Das Pellet.**

- Proven and process reliable VIATOP-technology
- Flexible modification rate depending on the application
- Economical asphalt production, no increased mixing time
- Modification without reaction time
- Highest flexibility and long storage life
- Automatic dosing – silo and big bag systems

### **The Asphalt Mixture.**

- Excellent resistance to rutting and fatigue
- Improved ageing properties
- Reduced cracking
- Improved workability
- Reduced CO<sub>2</sub> emissions and saving of energy costs



**VIATOP® plus FEP** - the new generation of elastomer modifier for many standard asphalt mixtures cost-efficient and environmentally friendly.

**VIATOP® plus WMA**

**Das Pellet.**

Additives for  
Warm Mix Asphalt



Temperature Reduction for  
Lower Emissions and  
Less Energy Consumption

Sustainable

Environmentally friendly

Economical



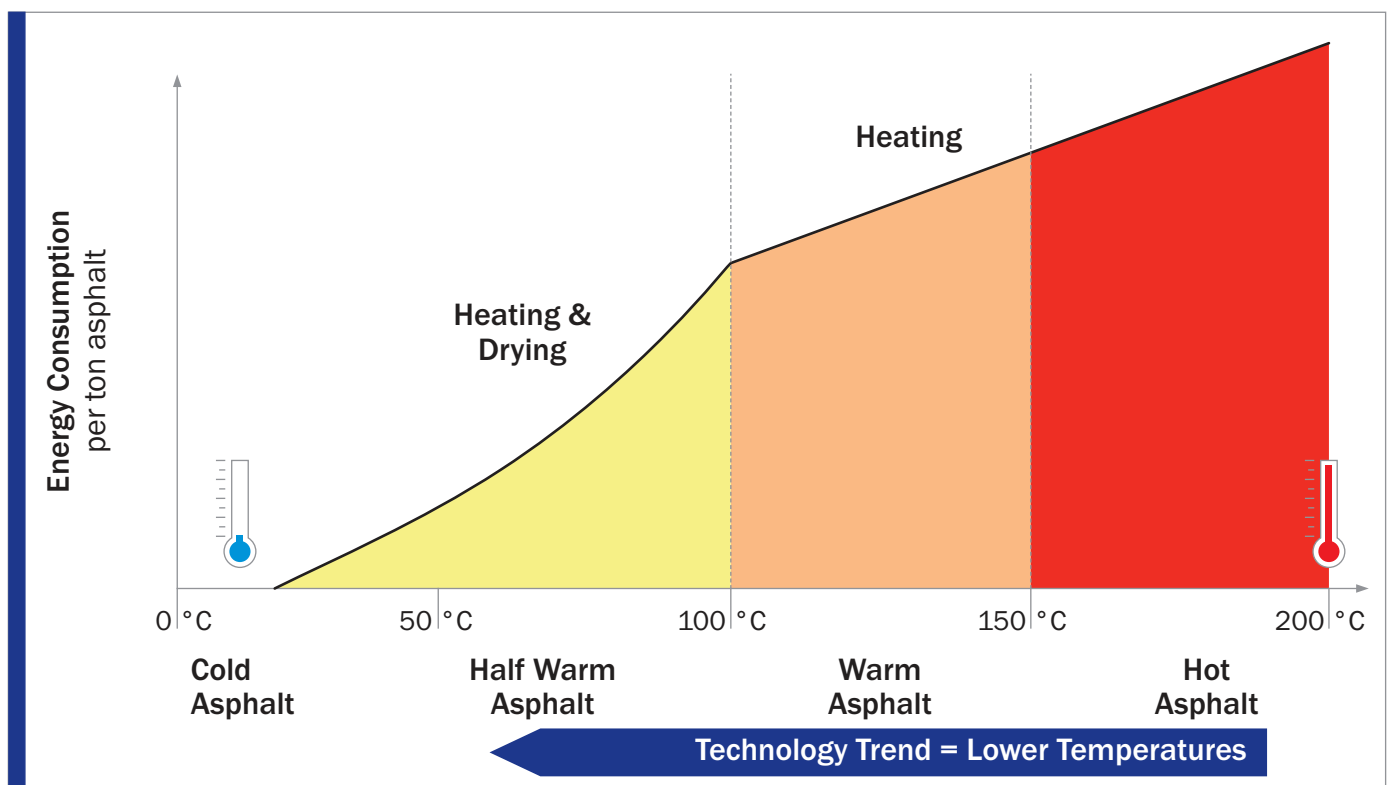
## Sustainable – Environmentally friendly – Economical



Protecting our environment for future generations is the key mission for all of us – every day. How can we in the asphalt industry fulfill our part? Durable long-lasting pavements, lower rolling resistance for the surface layers, noise reducing technologies, a high quality recycling of reclaimed asphalt pavements, less energy consumption, lower temperatures during the mixing and paving process, improved working conditions, and not to forget

time reduction for the construction sites to minimize traffic jams – all of these challenges must be met.

The techniques for the reduction of all process temperatures have been developed since the mid 1990s. The **VIATOP® plus WMA** product range offers perfect solutions for all expectations when using Warm Mix Asphalt.



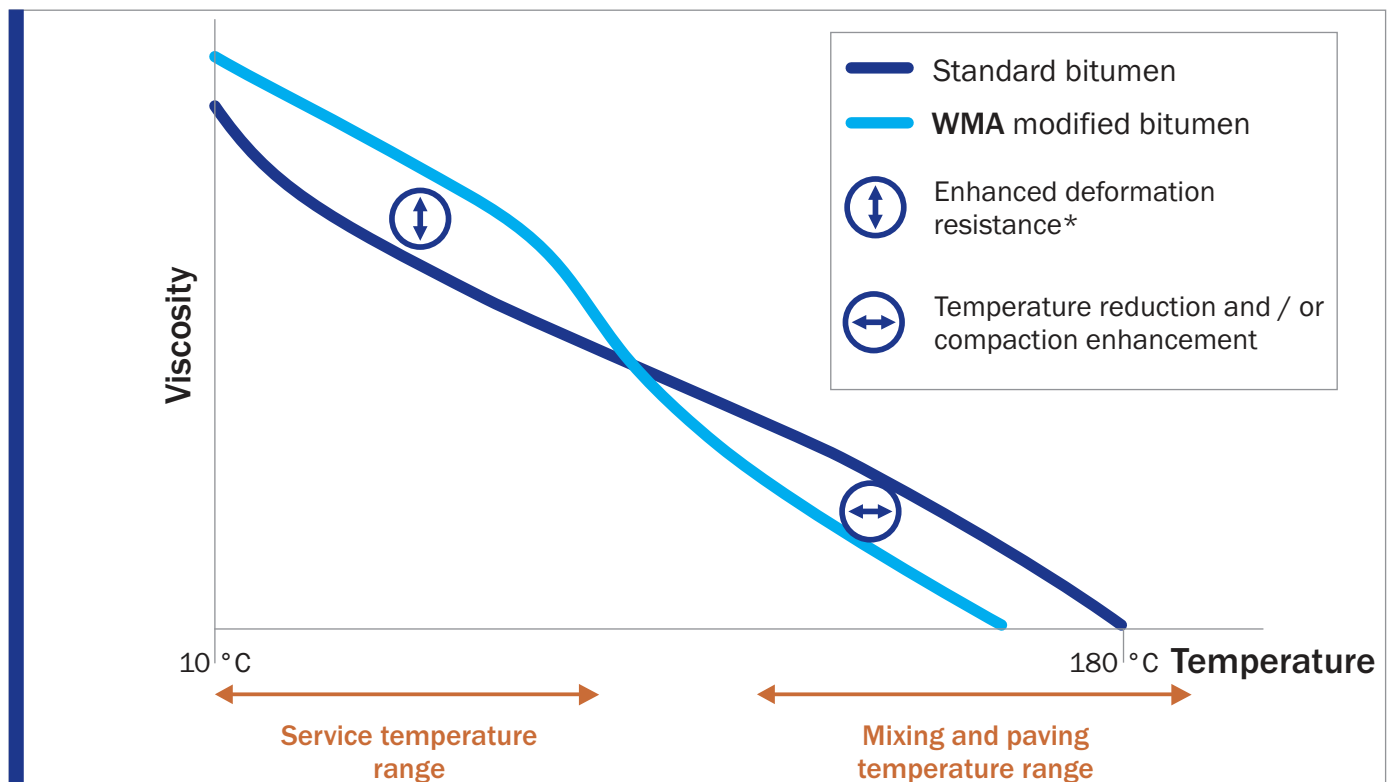
How WMA fits into the full range of techniques.  
(Source: EAPA Position Paper: The use of WMA)



The use of organic additives is the most common way to produce Warm Mix Asphalt. A special wax produced by conversion of natural gas – Fischer-Tropsch (FT) process – has shown excellent performance during more than 20 years already.

Together with the asphalt industry and the producers of FT waxes JRS developed a range of **VIATOP® plus** products – the **VIATOP® plus WMA** C-types.

How do **VIATOP® plus WMA** pellets work in the asphalt mixes?



(\*) depending on the addition rate of the WMA-additive

## Sustainable – Environmentally friendly – Economical



The **VIATOP® plus WMA** product range with its three product grades offers solutions for all types of asphalt mixes:

- |            |                |              |
|------------|----------------|--------------|
| • SMA      | • SMA TL / UTL | • PA         |
| • SMA plus | • AC           | • MA         |
| • SMA B C  | • AC B C       | • AC Duopave |

**Warm Mix Additives for Warm Mix Asphalt.** Easy dosage, safe handling, reliable dispersion, excellent performance, economical, energy improving, less emissions – **GREEN!**

Our product range based on natural resources to meet all demands and needs for modern environmentally friendly, sustainable asphalt roads.

The use of WMA produced with **VIATOP® plus WMA** is beneficial with respect to:

- **Environment:**  
less energy consumption and lower emissions
- **Asphalt workers:**  
reduced exposure to fumes and odors in combination with a less hot working environment
- **Application:**  
enhanced workability, extended paving season, earlier opening of construction sites
- **Economical issues:**  
fuel savings for the asphalt industry as well as for the public due to shorter constructions times resp. less traffic jams

**WMA – Warm Mix Asphalt with VIATOP® plus WMA**  
- the road to a greener future!





# VIATOP® *plus C 25*

## Das Pellet.

### VIATOP® *plus C 25*

pelletized blend

75 % by weight cellulose fibers **ARBOCEL® ZZ 8/1**

25 % by weight Fischer-Tropsch wax.

#### Recommended dosage:

##### SMA Surf

0.4% or 4.0 kg/mt of mix

##### SMA B C

0.3% or 3.0 kg/mt of mix

Beside the use in ALL types of SMA mixes,

**VIATOP® *plus C 25*** can also be applied for AC Duopave, the dual asphalt layer, combining the performance of a base course layer with the properties of a surface layer.

Challenge	Solution
High compaction resistance	<b>VIATOP® <i>plus C 25</i></b> reduces compaction resistance to get an easier and effective compaction
Difficult application conditions	<b>VIATOP® <i>plus C 25</i></b> improves application behavior. In case of manual works another benefit
Application at cold weather conditions	<b>VIATOP® <i>plus C 25</i></b> allows paving and compaction even at unfavorable weather conditions, hence extends the paving season
High CO <sub>2</sub> and bitumen fumes emissions during asphalt production process	<b>VIATOP® <i>plus C 25</i></b> reduces bitumen fumes and CO <sub>2</sub> process emissions due to lower mixing temperatures
Warm Mix Asphalt	<b>VIATOP® <i>plus C 25</i></b> ensures a proper compaction, even at reduced application temperatures
Need for long term and high quantity orders for low viscous binders	<b>VIATOP® <i>plus C 25</i></b> offers high flexibility due to short time availability and individual packaging sizes
Need for extended hauling or storing of the asphalt mix	<b>VIATOP® <i>plus C 25</i></b> reduces the viscosity of the binder, hence no need to superheat the asphalt mix to overcome compaction problems

## Sustainable – Environmentally friendly – Economical



# VIATOP® plus CT 40

## Das Pellet.

### VIATOP®plus CT 40

pelletized blend

60 % by weight cellulose fibers **ARBOCEL® ZZ 8/1**

40 % by weight Fischer-Tropsch wax.

#### Recommended dosage:

##### SMA Surf

0.5% or 5.0 kg/mt of mix

##### SMA B C

0.35% or 3.5 kg/mt of mix

Besides the use in ALL types of SMA mixes,

**VIATOP®plus CT 40** can also be applied for

AC Duopave, the dual asphalt layer, combining the performance of a base course layer with the properties of a surface layer.

Challenge	Solution
High compaction resistance	<b>VIATOP® plus CT 40</b> reduces compaction resistance to get an easier and effective compaction
Deformation / Rutting	<b>VIATOP® plus CT 40</b> increases the resistance to permanent deformation
Warm Mix Asphalt	<b>VIATOP® plus CT 40</b> ensures a proper compaction, even at reduced application temperatures
Difficult application conditions	<b>VIATOP® plus CT 40</b> improves application behavior. In case of manual works another benefit
Application under cold weather conditions	<b>VIATOP® plus CT 40</b> allows paving and compaction even under unfavorable weather conditions
High CO <sub>2</sub> and bitumen fumes emissions during asphalt production process	<b>VIATOP® plus CT 40</b> reduces bitumen fumes and CO <sub>2</sub> process emissions due to lower mixing temperatures
Need for long term and high quantity orders for low viscous binders	<b>VIATOP® plus CT 40</b> offers high flexibility due to short time availability and individual packaging sizes
Need for extended hauling or storing of the asphalt mix	<b>VIATOP® plus CT 40</b> reduces the viscosity of the binder, hence no need to superheat the asphalt mix to overcome compaction problems



# VIATOP® plus CT 80-AC

## Das Pellet.

### VIATOP® plus CT 80-AC

pelletized blend

20 % by weight cellulose fibers **ARBOCEL® ZZ 8/1**

80 % by weight Fischer-Tropsch wax.

### Recommended dosage:

Depending on the type of asphalt mix and the challenges to be fulfilled the dosage level should be in the range of 1.5 to 3.5% by weight **based on the binder content of the mix**.

### VIATOP® plus CT 80-AC

Developed and designed for AC surface layers but also perfect for all other asphalt mixes e.g. MA, AC B C, etc.

Challenge	Solution
Warm Mix Asphalt other than SMA or PA	<b>VIATOP® plus CT 80-AC</b> for a process reliable addition of different levels of WMA additive
High compaction resistance	<b>VIATOP® plus CT 80-AC</b> reduces compaction resistance to get an easier and effective compaction
Deformation / Rutting	<b>VIATOP® plus CT 80-AC</b> increases the resistance to permanent deformation (depending on the dosage level)
Warm Mix Asphalt	<b>VIATOP® plus CT 80-AC</b> ensures a proper compaction, even at reduced application temperatures
Difficult application conditions	<b>VIATOP® plus CT 80-AC</b> improves application behavior. In case of manual works another benefit
Application under cold weather conditions	<b>VIATOP® plus CT 80-AC</b> allows paving and compaction even under unfavorable weather conditions
High CO <sub>2</sub> and bitumen fumes emissions during asphalt production process	<b>VIATOP® plus CT 80-AC</b> reduces bitumen fumes and CO <sub>2</sub> process emissions due to lower mixing temperatures
Need for long term and high quantity orders for low viscous binders	<b>VIATOP® plus CT 80-AC</b> offers high flexibility due to short time availability and individual packaging sizes
Need for extended hauling or storing of the asphalt mix	<b>VIATOP® plus CT 80-AC</b> reduces the viscosity of the binder, hence no need to superheat the asphalt mix to overcome compaction problems

## COMPETENT

### The VIATOP® Technology

Reliable – Efficient – Economical



#### VIATOP® premium

Das Pellet.

for superior durability

#### VIATOP® 66

Das Pellet.

for superior durability

#### VIATOP® plus C 25

Das Pellet.

*plus* enhanced compaction and temperature reduction

#### VIATOP® plus CT 40

Das Pellet.

*plus* reduced process temperatures and enhanced compaction

#### VIATOP® plus CT 80-AC

Das Pellet.

*plus* temperature reduction and compaction enhancement for AC, MA

#### VIATOP® plus AD 10

Das Pellet.

*plus* improved adhesion

#### VIATOP® plus RC

Das Pellet.

*plus* the real rejuvenating additive

#### VIATOP® plus FEP

Das Pellet.

*plus* elastomer modification for Asphalt Concrete

At J. Rettenmaier & Söhne Group, we have dedicated ourselves to the research, development and processing of **high quality, organic fibers derived from natural and sustainable raw materials**. Many features of these valuable natural substances are available for the industry.

Our fiber expertise, application know-how and innovations gave us the reputation being the number one reliable partner for the asphalt industry for more than 30 years. **VIATOP®** pellets – our fibers with bituminous coating and additional functional additives inside –

for decades have been the benchmark for fiber additives delivering the best quality and functionality for modern asphalt concepts. Together with sophisticated road construction experts around the globe, we developed the innovative **VIATOP® plus**. A wide range of pelletized fiber additives for various additional functions enhance the properties of the final mixes. Get ready for the future – with **VIATOP® plus**.



VIATOP® plants Lodenau, Calenberg (Germany), Mansfield (England) and Balakhna (Russia)



# VIATOP®

Das Pellet.

Pellets for Fiber Modified  
Asphalt Mixtures

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## VIATOP® *premium*

Das Pellet.

J. RETTENMAIER & SÖHNE  
GMBH + CO KG



Fibers designed  
by Nature

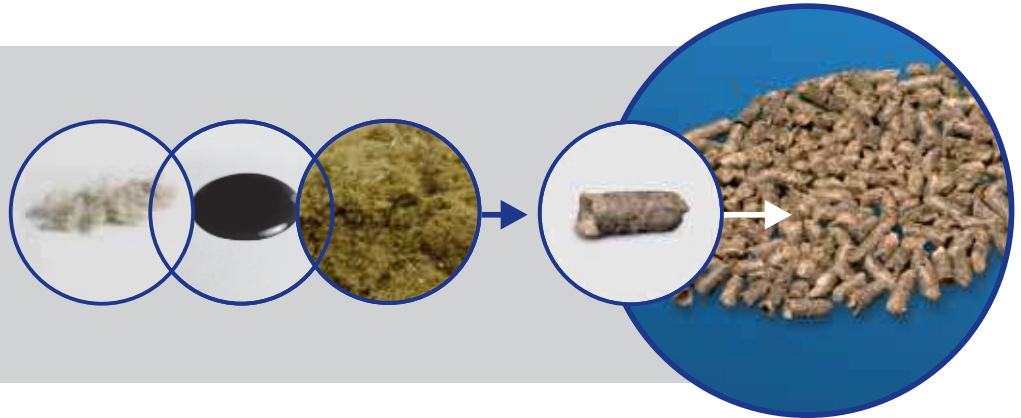
### Pellets for Fiber Modified Asphalt Mixtures

#### VIATOP® premium

is a pelletized blend of:

**90 % by weight**  
ARBOCEL® ZZ 8/1

**10 % by weight**  
Bitumen 50/70



#### VIATOP® Technology

- Natural fibers made from specially treated cellulose qualities
- Bituminous coating of the fibers guarantee a quick and complete dispersion in the mix
- Excellent efficiency and stabilizing effect due to a dense three-dimensional fiber network
- Economical asphalt production – no capacity or energy losses caused by unnecessary dry mixing time
- Highest quality standards ensure continuous and consistent asphalt quality
- Automatic dosing – big bag and silo systems
- Small bags available
- 4 VIATOP® production sites ensure just in time deliveries
- JRS – your reliable global partner – excellence in application know-how, service and technical support

#### VIATOP® Das Pellet.

Bitumen-coated fiber pellets for sustainable and economical asphalt solutions all around the globe.

#### VIATOP® Modified Asphalt Mixtures

- Stone Mastic Asphalt Surface Course
- Stone Mastic Asphalt Binder Course
- Stone Mastic Asphalt plus
- Porous Asphalt
- Thin Layer Asphalt
- Gap-graded AC
- Coarse-graded AC



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**VIATOP®** *plus RC*

**Das Pellet.**

For the reuse  
of reclaimed asphalt



Rejuvenation of reclaimed asphalt  
that conforms to all requirements

Innovative

Economical

Environmentally friendly

Durable



**J. RETTENMAIER & SÖHNE**  
GMBH + CO KG



Fibers designed  
by Nature



## Innovative – Economical – Environmentally friendly – Durable

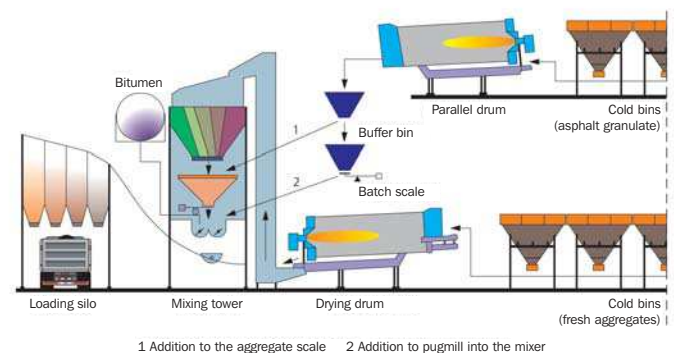


In these times of constantly rising cost pressures paired with a growing concern for the environment, the high-quality recycling of reclaimed asphalt provides an ideal opportunity for combining these two aspects without the need to compromise in terms of the quality or durability of asphalt pavements.

In order to achieve the highest possible level of added value, the principle of “horizontal recycling” should always be the goal. This means that, ideally, a high percentage of reclaimed asphalt derived from asphalt surface-layer material with high-grade aggregates and binders is reused in new asphalt surfaces.



**VIATOP<sup>®</sup> plus RC** is a highly effective combination product made of cellulose fibers and rejuvenators. A higher dosage of reclaimed asphalt is possible using asphalt mixing plants with adequate technical setup.



Batch mixing plant with parallel drum  
(source: German Asphalt Paving Association DAV)



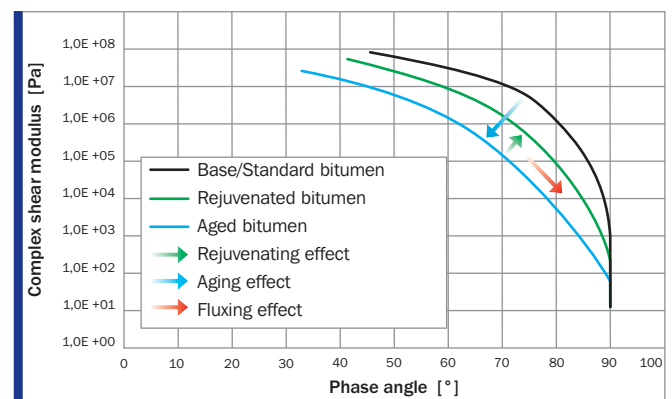


**VIATOP® *plus RC*** is THE alternative to other rejuvenators already available on the market. Most of those additives rely on liquid dosing and tend to work more as softeners (fluxing agent) and not as real rejuvenators.

**VIATOP® *plus RC*** is THE solution that combines the economic and the environmental aspects within asphalt production. Without the need for major investments in mixing plant technology.

## **VIATOP® *plus RC*** at a glance

- Real rejuvenation of aged binders
- A green product made of natural raw materials
- Non water-polluting
- Highly efficient
- Higher addition rates of reclaimed asphalt mixes possible
- Reduces costs
- Conserves natural resources
- Uses dosage systems for fiber pellets
- No investment for additional tanks



**VIATOP® *plus RC***  
 Innovative – Economical –  
 Environmentally friendly – Durable

## COMPETENT

## The VIATOP® Technology

Reliable – Efficient – Economical



**VIATOP®** *plus RC*  
**Das Pellet.**

Das Pellet with functional RC-additive inside

At **J. Rettenmaier & Söhne Group**, we have dedicated ourselves to the research, development and processing of **high quality, organic fibers derived from natural and sustainable raw materials**. Many features of these valuable natural substances are available for the industry.

Our fiber expertise, application know-how and innovations gave us the reputation being the number one reliable partner for the asphalt industry for more than 30 years. **VIATOP®** pellets – our fibers with bituminous coating and additional functional

additives inside – for decades have been the benchmark for fiber additives delivering the best quality and functionality for modern asphalt concepts. Together with sophisticated road construction experts around the globe, we developed the innovative **VIATOP® plus**. A wide range of pelletized fiber additives for various additional functions enhance the properties of the final mixes. Get ready for the future – with **VIATOP® plus**.



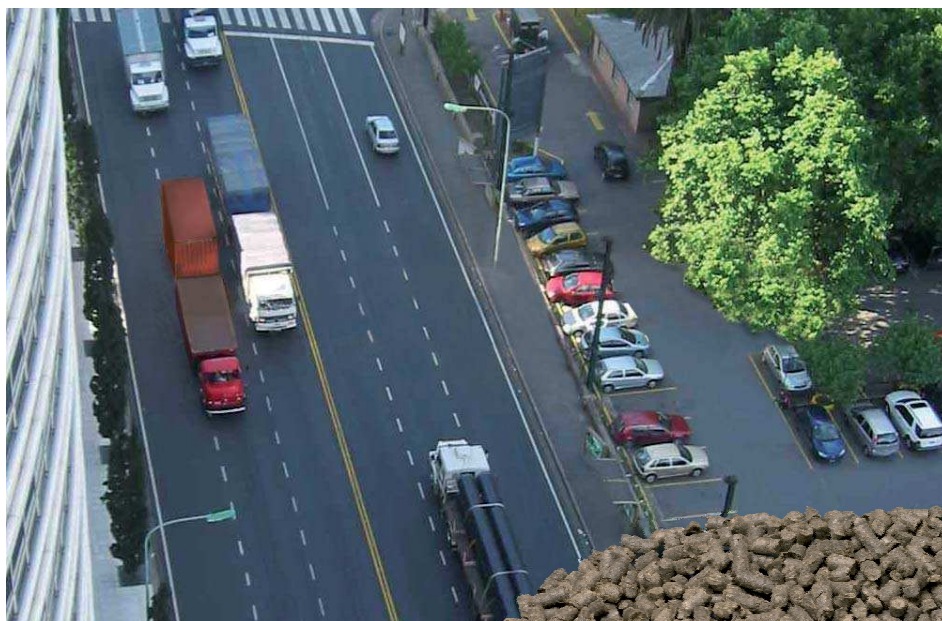
VIATOP® plants Lodenau, Calenberg (Germany), Mansfield (England) and Balakhna (Russia)

# VIATOP®

Das Pellet.

Pellets for Fiber Modified  
Asphalt Mixtures

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## VIATOP® 66

Das Pellet.

J. RETTENMAIER & SÖHNE  
GMBH + CO KG



Fibers designed  
by Nature



# VIATOP® 66

Das Pellet.

## Pellets for Fiber Modified Asphalt Mixtures

### VIATOP® 66

is a pelletized blend of:

**66 M.-%**  
ARBOCEL® ZZ 8/1

**34 M.-%**  
Bitumen 50/70



### VIATOP® Technology

- Natural fibers made from specially treated cellulose qualities
- Bituminous coating of the fibers guarantee a quick and complete dispersion in the mix
- Excellent efficiency and stabilizing effect due to a dense three-dimensional fiber network
- Economical asphalt production – no capacity or energy losses caused by unnecessary dry mixing time
- Highest quality standards ensure continuous and consistent asphalt quality
- Automatic dosing – big bag and silo systems
- Small bags available
- 4 **VIATOP®** production sites ensure just in time deliveries
- JRS – your reliable global partner – excellence in application know-how, service and technical support

### VIATOP® Das Pellet.

Bitumen-coated fiber pellets for sustainable and economical asphalt solutions all around the globe.

### VIATOP® Modified Asphalt Mixtures

- Stone Mastic Asphalt Surface Course
- Stone Mastic Asphalt Binder Course
- Stone Mastic Asphalt plus
- Porous Asphalt
- Thin Layer Asphalt
- Gap-graded AC
- Coarse-graded AC





**VIATOP<sup>®</sup> plus**

**Das Pellet.**

**The Added Value Product Range  
for Modified Asphalt Mixtures**

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**VIATOP<sup>®</sup> plus AD 10**

**Das Pellet.**

**J. RETTENMAIER & SÖHNE**  
GMBH + CO KG



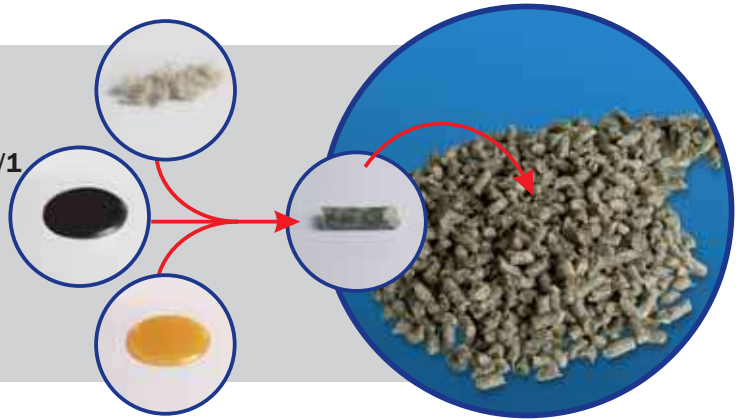
Fibers designed  
by Nature

### The Added Value Product Range for Modified Asphalt Mixtures

VIATOP® plus AD 10 is a pelletized blend of:

83 % by weight Cellulose Fibers ARBOCEL® ZZ 8/1  
10 % by weight Bitumen 50/70  
7 % by weight Fatty acid amid amine

Recommended dosage:  
0.35 % by weight



#### Adhesion - A Global Problem



#### VIATOP® plus AD 10 The Practical Solution

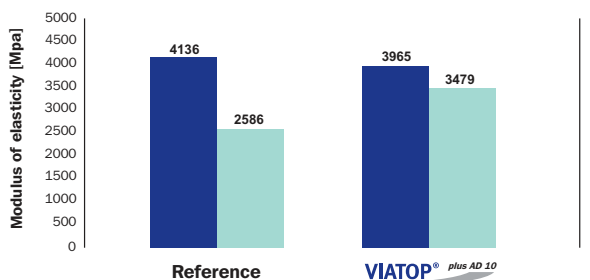


#### VIATOP® plus AD 10:

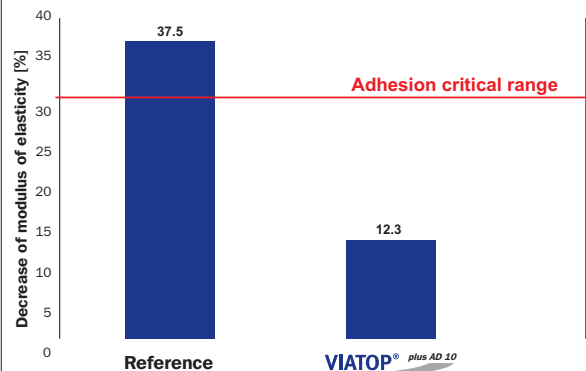
- Improved adhesion properties aggregates/bitumen - no stripping
- Extended life-time
- Reduced ageing
- Better long-life behavior
- Solid product - no handling of liquids

Dynamic Modulus of Elasticity before and after Water Immersion  
AC Bindercourse 16 (B 50/70)

Temperature = 25°C  
Load acceleration time = 66 ms  
Horizontal deformation = 5 µm



Decrease of the Modulus of Elasticity after Water Immersion  
AC Bindercourse 16 (B 50/70)



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**VIATOP<sup>®</sup> plus**

**Das Pellet.**

Compaction enhancement  
for ALL types of SMA mixes!

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**VIATOP<sup>®</sup> plus C 25**

**Das Pellet.**

**J. RETTENMAIER & SÖHNE**  
GMBH + CO KG



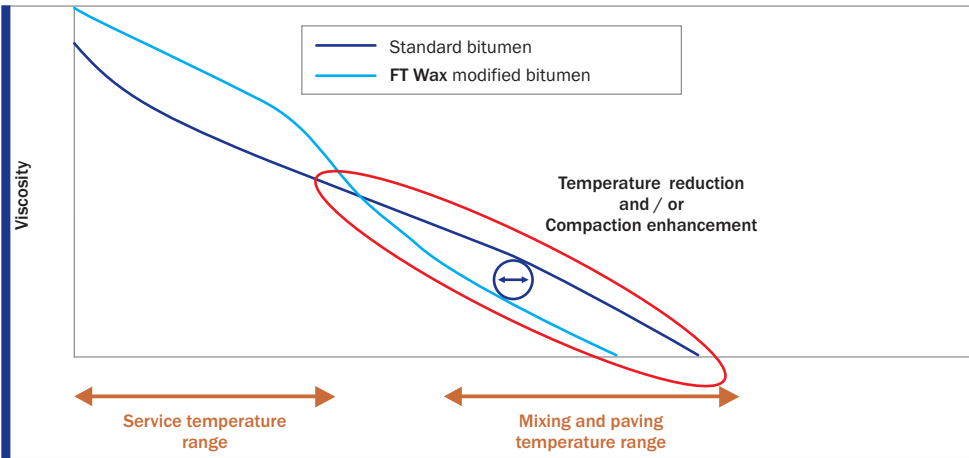
Fibers designed  
by Nature

## Innovative pellets for the modification of bituminous mixtures

**VIATOP® plus C 25** is a pelletized blend of 75 % by weight cellulose fibers **ARBOCEL® ZZ 8/1** and 25 % by weight Fischer Tropsch-Wax.

**VIATOP® plus C 25** reduces compaction resistance to get an easier and effective compaction.

Beside the use in ALL types of SMA mixes, **VIATOP® plus C 25** can also be applied for AC Duopave, the dual asphalt layer, combining the performance of a base course layer with the properties of a surface layer.



**Recommended dosage:**  
Depending on the type of asphalt mix the dosage level should be in the range of 0.25 to 0.4 % by weight of asphalt mix.

Challenge	Solution
High compaction resistance	<b>VIATOP® plus C 25</b> reduces compaction resistance to get an easier and effective compaction
Difficult application conditions	<b>VIATOP® plus C 25</b> improves application behavior, especially in case of manual works
Application at cold weather conditions	<b>VIATOP® plus C 25</b> allows paving and compaction even at unfavorable weather conditions, hence extends the paving season
High CO <sub>2</sub> and bitumen fumes emissions during asphalt production process	<b>VIATOP® plus C 25</b> reduces bitumen fumes and CO <sub>2</sub> process emissions due to lower mixing temperatures
Warm Mix Asphalt	<b>VIATOP® plus C 25</b> ensures a proper compaction, even at reduced application temperatures
Need for long term and high quantity orders for low viscous binders	<b>VIATOP® plus C 25</b> offers high flexibility due to short time availability and individual packaging sizes
Need for extended hauling or storing of the asphalt mix	<b>VIATOP® plus C 25</b> reduces the viscosity of the binder, hence no need to superheat the asphalt mix to overcome compaction problems

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