ROADWAY SOLUTIONS’ mission is to develop and market innovative additives for asphalt mixes with the aim of improving the performance of roads while offering users more flexible solutions.
More flexibility and reactivity with a convenient solution
An argument for competitiveness

Production in our site of Cabannes

Pellets delivered in Hot-mis Plants

Hot-mix Delivery on worksite
**AVANTAGES DE NOS GRANULES**

**DELIVERY**
- No minimum order quantity
- Easy to transport

**STORAGE**
- Easy to store
- Available at any time

**READY TO USE**
- Without preparation
- Direct introduction in the pugmill
ADVANTAGES OF OUR PELLETS

EASY TO USE

- Easy to dose - like fillers and fibres
- No change of processing parameters (mixing time or temperature)
- No need to modify the process of asphalt mixing plants: only a feeder to be added

PRODUCTIVITY

- Faster reply to customer’s request
- Accurate dosing depending on work requirements and performance
- Less product loss
- Choose bitumen according to availability and price
CONCLUSION DES AVANTAGES

FLEXIBILITY WITH ORDERING with big bags and hotmelt bags packaging

SUPPLY CHAIN OPTIMIZATION with a product which is easier and quicker to use

HOT-MIXES PERFORMANCES Always maintained

BEST PROFITABILITY with controlled costs
Roadway Solutions, A company always working to bring more agility to its customers
Our range of products

RWelast®
A new generation of Polymer modified Bitumen

RWplast
Polyolefins-based additives

RW®Kerosafe+
Anti-K

Rwcolor®
Coloration of your mix
AREAS OF USE

- Airports
- Runways
- Parking areas
- Motorways
- Highways
- HeavyLoad areas
- Bridges
- Roundabouts

Improve road pavement sustainability

High stresses

For all type of climates
RW Elast®

SBS AND BITUMEN GRANULES FOR ASPHALT MIXES

A new generation of Polymer modified Bitumen
**RW Elast®** is a pellet composed of high modified bitumen with SBS type elastomers (Styren-Butadiene-Styren).

**Mecanical Stresses**
Which cause:
- Rutting
- Reduced adherence
- Permanent deformation

**Thermal stresses**
Which cause:
- Thermal cracking
- Fatigue
- Rutting

Une ALTERNATIVE ou un COMPLEMENT aux Bitumes modifiés aux Polymères (BmP) *fabriqués en usine de liant*
By strictly following specific manufacturing procedures, it is possible to prepare a PmB by using RWelast®E in the laboratory. Its performances can then be assessed and compared to existing product specifications or to a ready-to-use PmB.

The results below have been obtained with the same level of modifiers.

<table>
<thead>
<tr>
<th>Caractéristiques</th>
<th>BmP d’usine de liant</th>
<th>BmP fabriqué avec RWelast®E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pénétration à 25 °C (EN 1426 / ASTM D5)</td>
<td>58</td>
<td>53</td>
</tr>
<tr>
<td>Température Bille et Anneau °C (EN 1427 / ASTM D36)</td>
<td>90,5</td>
<td>90,5</td>
</tr>
<tr>
<td>Température FRAASS °C (EN 12 593)</td>
<td>-16</td>
<td>-14</td>
</tr>
<tr>
<td>Retour élastique (%) (EN 13 398 / ASTM D6084)</td>
<td>99</td>
<td>99</td>
</tr>
</tbody>
</table>
## TECHNICAL TRIALS

### 50/70 Bitumen Modifications with different % of RWelast®

<table>
<thead>
<tr>
<th>BmP reconstitué in lab from 50/70 bitumen from Repsol</th>
<th>Bitumen 50/70</th>
<th>7,5 % RWelast®</th>
<th>8,5 % RWelast®</th>
<th>9,5 % RWelast®</th>
<th>10 % RWelast®</th>
<th>12,5 % RWelast®</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TBA (°C)</strong></td>
<td>49,2</td>
<td>56,8</td>
<td>62,6</td>
<td>71,9</td>
<td>78,1</td>
<td>86,0</td>
</tr>
<tr>
<td><strong>Penetration (1/10e mm)</strong></td>
<td>61</td>
<td>45</td>
<td>43</td>
<td>39</td>
<td>36</td>
<td>35</td>
</tr>
<tr>
<td><strong>Fraas (°C)</strong></td>
<td>-10</td>
<td>-11</td>
<td>-12</td>
<td>-12</td>
<td>-13</td>
<td>-13</td>
</tr>
<tr>
<td><strong>elasticity(%)</strong></td>
<td>0</td>
<td>56</td>
<td>79</td>
<td>87</td>
<td>87</td>
<td>92</td>
</tr>
</tbody>
</table>
Toulouse (France)

- **Wearing course**
  - 10% of RAP
  - **HotMix Plant:** Continuous plant (250 t/h max.)
  - Production: 160 t/h (identical speed as normal production with PMB)

Moutier (France)

- **Wearing Course**
  - 10% of RAP
  - **HotMix Plant:** Batch Mixing Plant
  - Production: 170 t/h

Mezyad – Town of Al Ain - (UAE)

- **Wearing course**
  - Binder content: 3,9%
  - **HotMiw Plant:**
    - Batch mixing Plant
    - Pugmill: 2,9 t/batch | dry mixing: 20 sec - total 40 sec

French Guyana (LATAM)

- **Wearing course**
  - **HotMix Plant:**
    - Batch mixing plant
    - Production: 180 t/h (identical speed as normal production with PMB)

... Sur plus de 250 chantiers connus ...

De petits chantiers comme un rond point aux autoroutes
Make the road go further

RWplast®

POLYOLEFIN ADDITIVES FOR ASPHALT CONCRETE
**RWplast®** is a polyolefin & minerals-based additive

- Rutting-resistant additive
- Higher modulus additive

*for surface courses*
*for middle courses (binder and base courses)*

**Dosage:**
0.3% to 0.8% of hotmix

Using polymers enhance thermomechanical properties of road pavements
OUR SOLUTION: RWplast®

Wearing Course Performances:
- High rutting resistance
- Better cohesion of asphalt mixes
- High resistance to hydrocarbons (kerosene, essence, gasoil)

Middle Courses Performances:
- High modulus with the use of standard pen grade bitumen
- Minimum modulus easily attained or improved
- Better rigidity

Enable to reduce the thickness of layers.
compatible with all pen grade bitumen

- Better resistance to permanent deformation
- An increase in the road pavement lifespan
- A reduction in maintenance operations
**RWplast®**
Additif anti-ornié rant

<table>
<thead>
<tr>
<th>References</th>
<th>Thickness of the plates (cm)</th>
<th>Void content (%)</th>
<th>Temperature of the test (°C)</th>
<th>Depth of ruts (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10,3</td>
<td>6,0</td>
<td>60,0</td>
<td>4,6</td>
</tr>
<tr>
<td>BBSG 0/10 classe 1 (Exemple)</td>
<td></td>
<td></td>
<td></td>
<td>6,2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8,1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10,0</td>
</tr>
<tr>
<td>Test A with RWplast® (0,8%)</td>
<td>10,3</td>
<td>3,1</td>
<td>60,0</td>
<td>2,5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,8</td>
</tr>
<tr>
<td>Test B with competitor product (0,8%)</td>
<td>10,1</td>
<td>3,8</td>
<td>60,0</td>
<td>2,6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3,7</td>
</tr>
<tr>
<td>Exigence de la norme NF EN 13108-1</td>
<td>3 à 6</td>
<td>60,0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>≤ 7,5</td>
</tr>
</tbody>
</table>
RESULTATS SUR CHAUSSEE

Avec **RWplast®**  
Sans **RWplast®**
**Chantiers**

*Ivato (Madagascar)*

Airport

*Mussafah (UAE)*

Road junction in Mussafah Industrial Zone Base Course[70mm – for 320 mt hotmix] : dosage: 0.3% of total HMA.

... Sur plus de 80 chantiers connus ...
Make the road go further

RW® KEROSAFE +

Pellets for ANTI-K ASPHALT
RW KEROSAFE®+ is a polyolefin based additive designed for the manufacture of asphalt mixes (type BBAK), in order to increase the resistance to hydrocarbons (kerosene, gasoline, gas oil).

**Wearing course Performances:**
- Good resistance to hydrocarbons
- Good resistance to rutting and punching

**Area of use:**
- Airports: Taxiways, parking area
- Stations
- Heavyload parking...

Additive increasing the resistance to hydrocarbons of Asphalt Concrete
**Binder Performances**

PG (SHRP):
- High temperature of use

European Standards:
- Pen @ 25 °C
- Melting point

**HotMix performances**

Federal Aviation Administration (FAA):
- Loss of mass after 24 h of immersion @ 25 °C

Typical tests in France:
- Duriez Resistance @ 18 °C
- Loss of mass after 7 days of immersion
HotMix Loss of Mass

Water: 0 %
Gasoil: 0.03 %
Kerosene: 0.62 %

- BBSG 0/10 + 0.6 % RW® KEROSAFE+
- Control BBSG 0/10
ROADWAY

Solutions

MAKE THE ROAD GO FURTHER

RwCOLOR®

PELLETS TO COLORISE HOTMIXES
**RWcolor®** is a powder pigment & EVA pellet

*Mixing T°C: similar to normal HotMix*

*Mixing time: 10 à 20 s more than normal mixing time*

**Security**
- Voie piétonnière
- Piste cyclable
- ...

**Ludique**
- Lieux touristiques
- Jardins
- ...

Dosage: 3 % of the total mass of the bitumen in the Hotmix
EXAMPLE OF APPLICATIONS
We will be pleased to give you more information about our products.

**Your contact**

Maela SAMSON  
msamson@roadwaysolutions.fr  
Tel : +33 6 35 22 31 72

**Company**

ROADWAY SOLUTIONS  
contact@roadwaysolutions.fr  
www.roadwaysolutions.fr  

ZAC de la Plaine  
13440 CABANNES  
FRANCE  

Tel : +33 4 90 20 12 92  
Fax : +33 4 90 95 96 77