

R  ADWAY

Solutions

MAKE THE ROAD GO FURTHER

Oct 2019

PRESENTATION DE L'ENTREPRISE ET DU PRODUIT

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**.



Cabannes



Our additives are supplied
as pellets form





USE OF OUR PELLETS

➤➤➤ More flexibility and reactivity with a convenient solution
An argument for competitiveness



Hot-mix Delivery on worksite



Pellets delivered in Hot-mis Plants



Production in our site of Cabannes





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
agylity 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



R  ADWAY

Solutions

MAKE THE ROAD GO FURTHER

RW Elast[®]

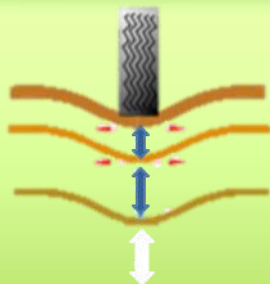
SBS AND BITUMEN GRANULES FOR ASPHALT MIXES

A new generation of Polymer modified Bitumen



RW Elast® is a pellet composed of high modified bitumen with SBS type elastomers (Styren-Butadiene-Styren).

4.0
Additive



Mecanical Stresses

Which cause :

- Rutting
- Reduced adherence
- Permanent deformation



Thermal stresses

Which cause :

- Thermal cracking
- Fatigue
- Rutting

Très froid Froid Pluie Chaud Très chaud

Une ALTERNATIVE ou un COMPLEMENT aux
Bitumes modifiés aux Polymères (BmP) *fabriqués en usine de liant*



TECHNICAL TESTS

Performance comparison on binder

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.

Caractéristiques	BmP d'usine de liant	BmP fabriqué avec RWelast®E
Pénétration à 25 °C (EN 1426 / ASTM D5)	58	53
Température Bille et Anneau °C (EN 1427 / ASTM D36)	90,5	90,5
Température FRAASS °C (EN 12 593)	-16	-14
Retour élastique (%) (EN 13 398 / ASTM D6084)	99	99





TECHNICAL TRIALS

50/70 Bitumen Modifications with different % of RWelast®

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



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

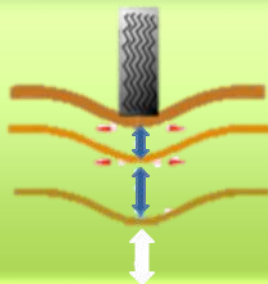


RWplast® is a polyolefin & minerals-based additive

: Rutting-resistant additive
Higher modulus additive

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

Dosage:
0,3 % à 0,8 %
of hotmix



mechanical stresses

Responsables of:

- Rutting
- Modulus

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

- Better resistance to permanent deformation
- An increase in the road pavement lifespan
- A reduction in maintenance operations

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





TESTS TECHNIQUES

RWplast®

Additif anti-orniérant

References	Thickness of the plates (cm)	Void content (%)	Temperature of the test (°C)	Depth of ruts (%)			
				1 000 cycles	3 000 cycles	10 000 cycles	30 000 cycles
BBSG 0/10 classe 1 (Exemple)	10,3	6,0	60,0	4,6	6,2	8,1	10,0
Test A with RWplast® (0,8%)	10,3	3,1	60,0	2.5	3.0	3.5	3.8
Test B with competitor product (0,8%)	10,1	3,8	60,0	2.6	2.9	3.4	3.7
Exigence de la norme NF EN 13108-1	-	3 à 6	60,0	-	-	-	≤ 7.5





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[®] KERO SAFE +

Pellets for ANTI-K ASPHALT



PRESENTATION

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





Performances

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

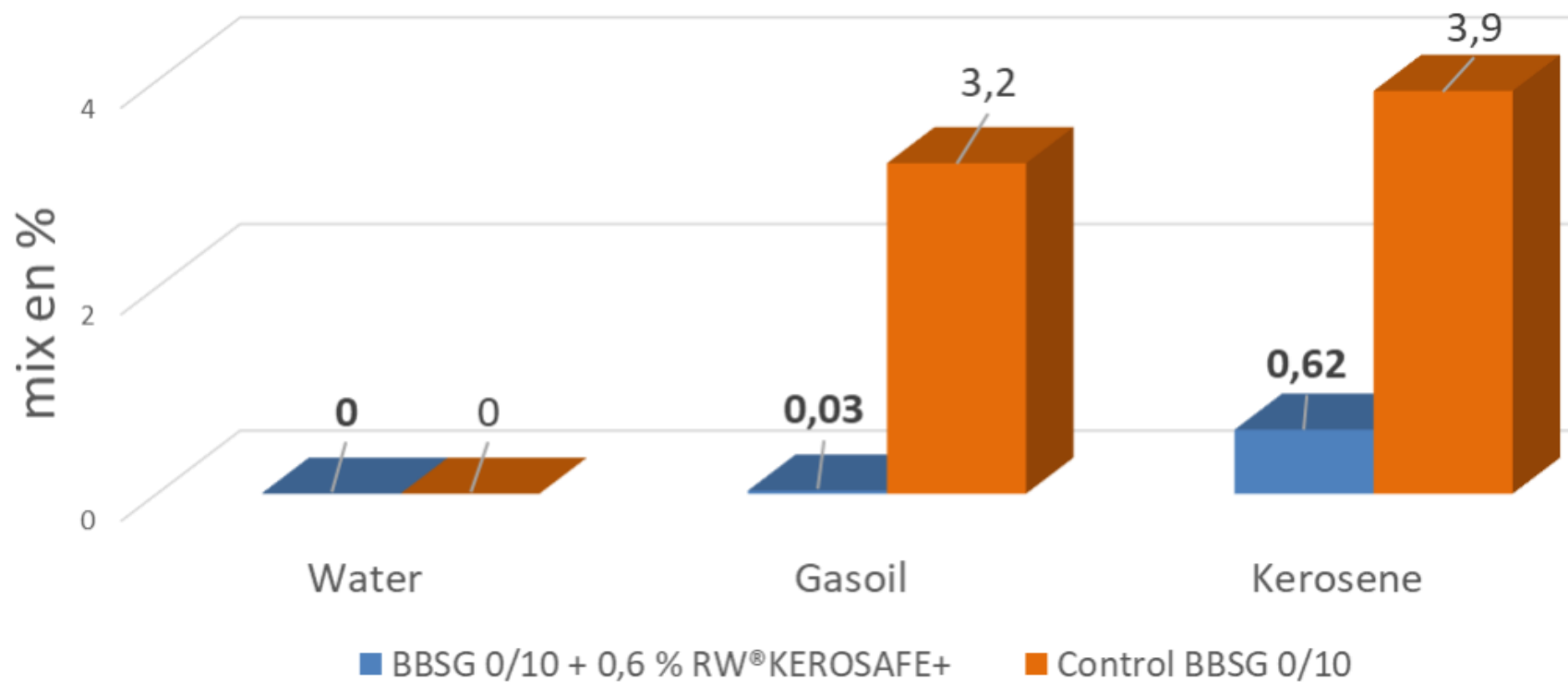
Typical tests in France:

- Duriez Resistance @ 18 °C
- Loss of mass after 7 days of immersion





HotMix Loss of Mass



R ADWAY

Solutions

MAKE THE ROAD GO FURTHER

RwCOLOR®

PELLETS TO COLORISE HOTMIXES





PRESENTATION DE L'ENTREPRISE ET DU PRODUIT



RWcolor® is a powder pigment & EVA pellet

Mixing T°C: similar to normal HotMix

Mixinf time: 10 à 20 s more than normal mixing time

Dosage: 3 % of the total mass of the bitumen in the Hotmix



Security

Voie piétonnière
Piste cyclable

...



Ludique

Lieux touristiques
Jardins

...





EXAMPLE OF APPLICATIONS





CONTACT



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

