



You can find all our information and demonstration videos at www.bitumen.total.com



TOTAL MARKETING SERVICES

Bitumen Operations

Head Office: 562 avenue du Parc de l'île
92029 Nanterre Cedex – France
Tel +33 (0)1 41 35 40 00
www.bitumen.total.com

Share capital €324.158.696
Trade & Companies Register Nanterre
www.total.com

**FOR EACH SPECIFIC WORKSITE,
TOTAL CAN OFFER THE IDEAL TECHNICAL SOLUTION**
Styreif ECO²: For warm-mix asphalt, ready to use
Styreif Intakt: Improves asphalt resistance to hydrocarbons
Styreif RC: Suitable for recycling
Styreif GP: Specially designed for race tracks



TOTAL
Styreif[®]

**PERFORMANCE
MADE TO LAST**

DixiHueurs45

TOTAL
Styrelf®



A COMPLETE RANGE FOR ALL ROADS

The Styrelf® range meets all market demands for secondary and main road networks as well as motorways.

A HIGH PERFORMANCE BINDER

- LOGISTICS MADE EASIER**
- Perfect stability during storage
- EXCELLENT DURABILITY**
- Outstanding elasticity
- Reduced thermal susceptibility
- Increased resistance to aging

AN ASPHALT WITH EXCEPTIONAL PROPERTIES

- RESISTANCE TO THERMAL SURFACE CRACKING**
- Excellent performance at low temperatures
- High resistance of binder to cracking
- RESISTANCE TO FATIGUE**
Highly superior to conventional road grades
- RESISTANCE TO RUTTING**
- Excellent performance at high temperatures
- Significant elastic recovery
- RESISTANCE TO FRETTING**
- High level of cohesion

"Styrelf®'s high performance is the result of an innovative process in which an irreversible tridimensional polymer network is formed 'in situ' in bitumen. This network gives the Styrelf® binder remarkable final properties TO ENSURE SUSTAINABILITY THROUGH DURABILITY."

GILLES GAUTHIER, Technical Manager for Total Bitumen

**AN EVER-GROWING
NUMBER OF PRODUCTS
TO OFFER A RANGE ADAPTED
TO ALL YOUR NEEDS**



- **AP** : Improved adhesion of the binder to aggregates that are difficult to coat
- **ECO²** : Styrelf performance at low temperatures
- **TR** : Lower viscosity for hard and/or highly modified grades





TOTAL
COMMITTED TO BETTER ENERGY

Styreif[®] ECO²

THE READY TO USE
TECHNICAL SOLUTION FOR
WARM-MIX ASPHALT

Styrelf[®] ECO²

STYRELF PERFORMANCE AT LOW TEMPERATURES



SIMILAR PERFORMANCE TO STYRELF FOR HOT-MIX ASPHALT

- In terms of mechanical and durability performance



READY TO USE

- No modifications needed to asphalt mixing plant equipment
- No investment necessary to use warm-mix technology



LOWER ASPHALT MIX PRODUCTION AND APPLICATION TEMPERATURES OF 40°C

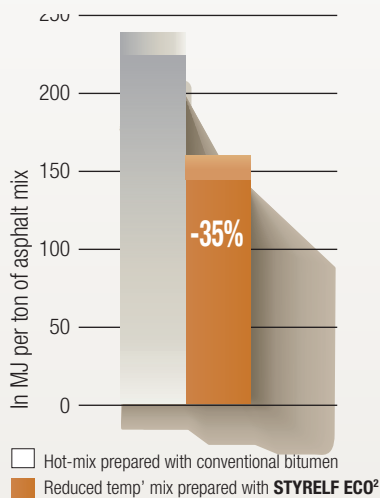
- Energy-saving
- Reduced CO₂ emissions



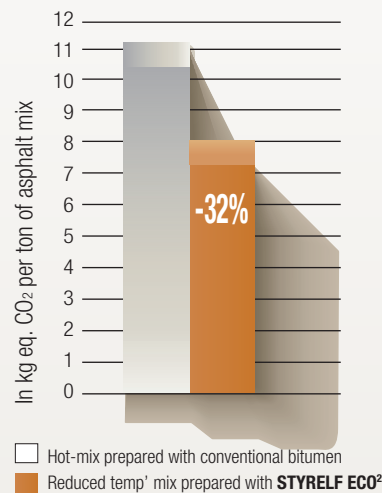
IMPROVED COMFORT AND VISIBILITY OF ON-SITE TEAMS

- Less fumes

ALL BY SIMPLY REDUCING THE TEMPERATURE!



Energy consumption



Emission of CO₂ at the coating plant

USED FOR **WEARING COURSES AND BASE COURSES**
COMPATIBLE WITH INCORPORATION OF **RECYCLED ASPHALT PAVEMENT**
BACK UP TO TRAFFIC QUICKER



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STYRELF ECO² is labelled
Total Ecosolutions. To find out more, visit our
website at www.total.com/total-ecosolutions



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Styreif® Intakt®

THE REFERENCE FOR PARKING
OR STORAGE AREAS SUBJECT TO
HYDROCARBONS DAMAGE

Styrelf® IntaKt®

THE NEW GENERATION OF STYRELF SPECIALLY DESIGNED FOR WORKSITES THAT NEED INCREASED RESISTANCE TO HYDROCARBONS

X2 RESISTANCE TO HYDROCARBONS

THE SOLUTION FOR HEAVY DUTY AREAS



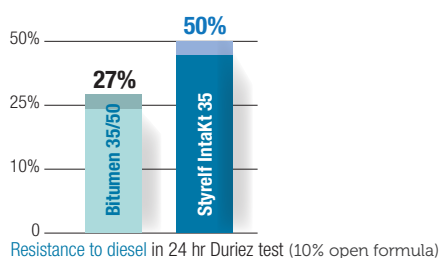
- Parking facilities and taxiways in airports
- Container terminals
- Service station traffic and parking areas

- Toll booths
- Roundabouts, HGV parking areas and bus stops
- Traffic lanes in plants and warehouses

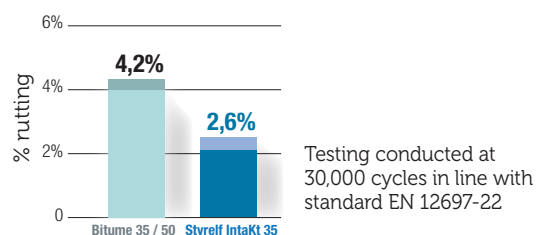
EXCEPTIONAL PERFORMANCE



IMPROVED RESISTANCE TO HYDROCARBONS

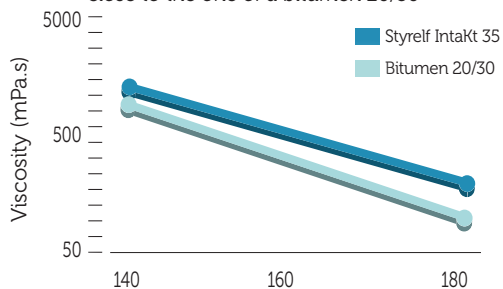


EXCELLENT RESISTANCE TO RUTTING

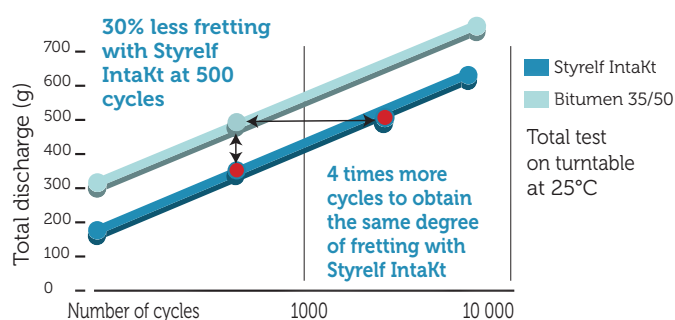


EASIER TO HANDLE THANKS TO A LOWER VISCOSITY

Iso-viscosity temperature (200mPa.s⁻¹) close to the one of a bitumen 20/30



EXCELLENT RESISTANCE TO FRETTING



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A long-exposure photograph of a highway at night, showing light trails from cars in white and green. The road curves into the distance under streetlights.

Styreif[®] RC

THE TECHNICAL SOLUTION
DEDICATED TO **RECYCLING**
HEAVY DUTY ROADS



Styrelf® RC

FOR THE SUCCESS OF HEAVY DUTY ROADS

THE ONLY MODIFIED
BINDER ON THE MARKET
FORMULATED ESPECIALLY FOR
RECYCLING



THE SOLUTION FOR HIGH-TRAFFIC WEARING COURSES INCORPORATING RECYCLING ASPHALT PAVEMENT (RAP)

- For all asphalt types (high modulus, semi-coarse, very thin)
- For percentages of RAP between **10 and 40%**
- For varying degrees of RAP oxidation



AVAILABLE IN 3 GRADES:

Modified Styrelf RC bitumen are available in 3 grades with differing RAP percentages and properties*.

Degree of RAP oxidation	Percentage of RAP	
	15-25%	30-40%
Low	Styrelf 40 RC	Styrelf 60 RC
Average	Styrelf 60 RC	Styrelf 60 RC
High	Styrelf 60 RC	Styrelf 80 RC

*Our Technical Services are on hand to help you get the grade you need for your worksite specifications.



SUSTAINABLE SUPPORT FOR ROAD RECYCLING

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A night-time photograph of a racing track. The track is illuminated with bright blue lights, creating a futuristic atmosphere. The asphalt is dark with white dashed lines. A red and white striped curb is visible on the right side. In the background, there are modern, multi-story buildings with glass facades and balconies, also lit up. The sky is dark with some light trails.

***Styreif*[®] GP**

**THE WOLDWIDE REFERENCE FOR
VERY HIGH PERFORMANCE ROADS
CIRCUITS, TEST TRACKS...**

Styrelf® GP

FOR THE SUCCESS OF VERY HIGH PERFORMANCE ROADS

A WORLDWIDE REFERENCE



Misano circuit
(Italy)



Monaco circuit
(Monaco)



Minneapolis circuit
(USA)

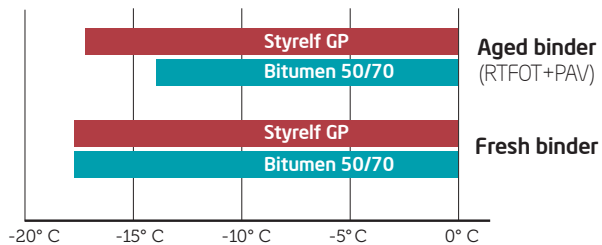


Alès circuit
(France)



MAINTAINS ELASTIC AND RESISTANCE PROPERTIES AT LOW TEMPERATURES OVER TIME FOR IMPROVED DURABILITY

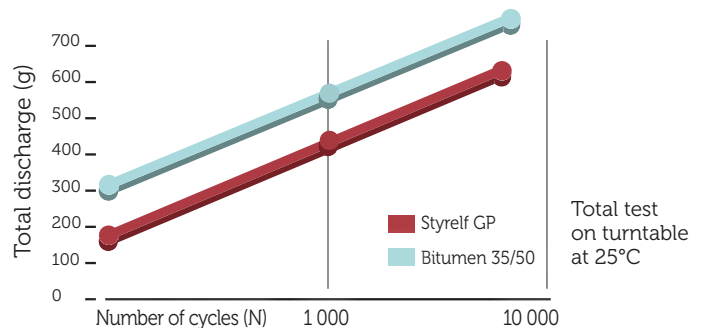
SHRP criterion for $T_m = 0.3$ cold-temperature performance (°C)



Styrelf GP keeps its low-temperature properties year after year on the road.



BETTER DURABILITY THAN CONVENTIONAL BITUMEN
30% higher resistance to fretting compared to bitumen 35/50



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Styreif[®] AP

THE TECHNICAL SOLUTION
WITH ADDITIVES FOR
IMPROVED ADHESION

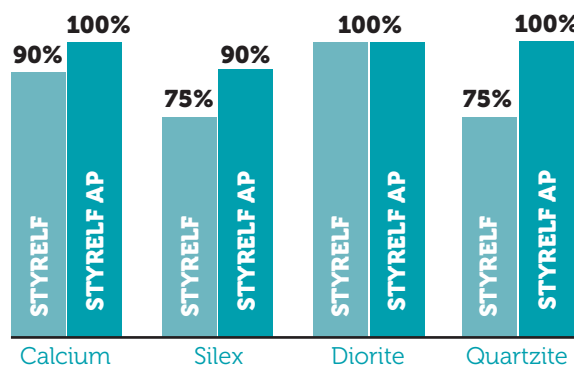
Styrelf[®] AP

READY-TO-USE STYRELF TECHNOLOGY THAT INCREASES BINDER ADHESION TO AGGREGATES THANKS TO THE INCLUSION OF DEDICATED ADDITIVES

IMPROVED PERFORMANCE FOR ALL AGGREGATES, EVEN THOSE THAT ARE DIFFICULT TO COAT

- Can meet water resistance criteria for asphalt required by worksite specifications
- Maintains asphalt water resistance over time

PASSIVE ADHESION TEST EN 15626



BETTER ADHESION OF STYRELF AP TO AGGREGATES



IMPROVE WATER RESISTANCE OF ASPHALT



NO ADDITIONAL HANDLING OF ADDITIVES IN THE ASPHALT MIXING PLANT



NO MODIFICATIONS TO INDUSTRIAL FACILITIES THANKS TO THE READY-TO-USE BINDER

FOR THE LONG-TERM PROTECTION OF ROADS AGAINST WATER

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A photograph of an industrial facility featuring several large, cylindrical, silver-colored storage tanks. The tanks are arranged in a row, and the scene is set against a clear blue sky. In the foreground, there are various pipes and structural elements of the facility.

***Styreif*[®] TR**

THE TECHNICAL SOLUTION THAT
FACILITATES THE USE OF **HIGH VISCOSITY**
BINDERS ON INDUSTRIAL SITES

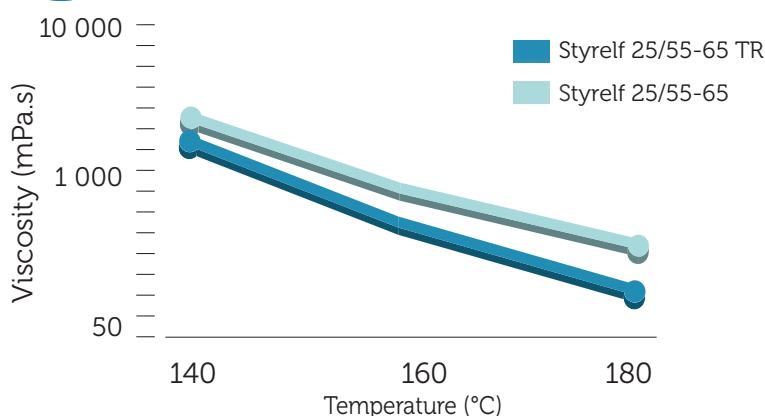
Styrelf[®] TR

STYRELF TECHNOLOGY IS NOW ACCESSIBLE TO ALL INDUSTRIAL SITES THANKS TO A VISCOSITY THAT HAS BEEN ADAPTED

TO APPLICATIONS
REQUIRING HIGHLY MODIFIED
BINDERS IN AREAS WHERE
APPLICATION IS DIFFICULT



REDUCED VISCOSITY



NO MODIFICATIONS
TO INDUSTRIAL FACILITIES



ENERGY SAVINGS THANKS TO
LOWER TEMPERATURES
OF UP TO 15°C

TO MANUFACTURE DURABLE ASPHALT EASILY

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