

RETROFIT



AQUAblack



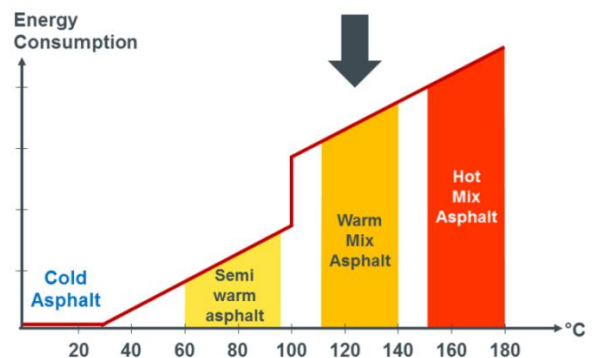
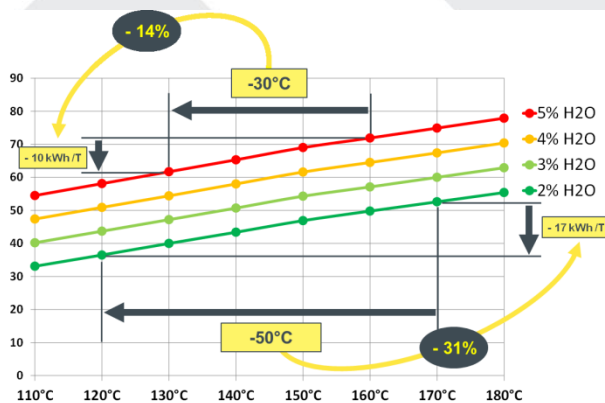
**...Black is the
new GREEN...!!**

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AQUAblack®

GENERAL FEATURES

The “Aquadblack” system allows producing a mix at a lower than standard temperature and the resulting product is known as warm mix asphalt. Indicated below are the production temperatures of this technology.



CHARACTERISTICS

The production temperatures of conventional mixes vary between 140°C and 180°C, while appropriate plant design details and technologies will allow producing mixes at temperatures between 110°C and 130°C guaranteeing the same performance characteristics as required by the specifications.

Aquadblack system

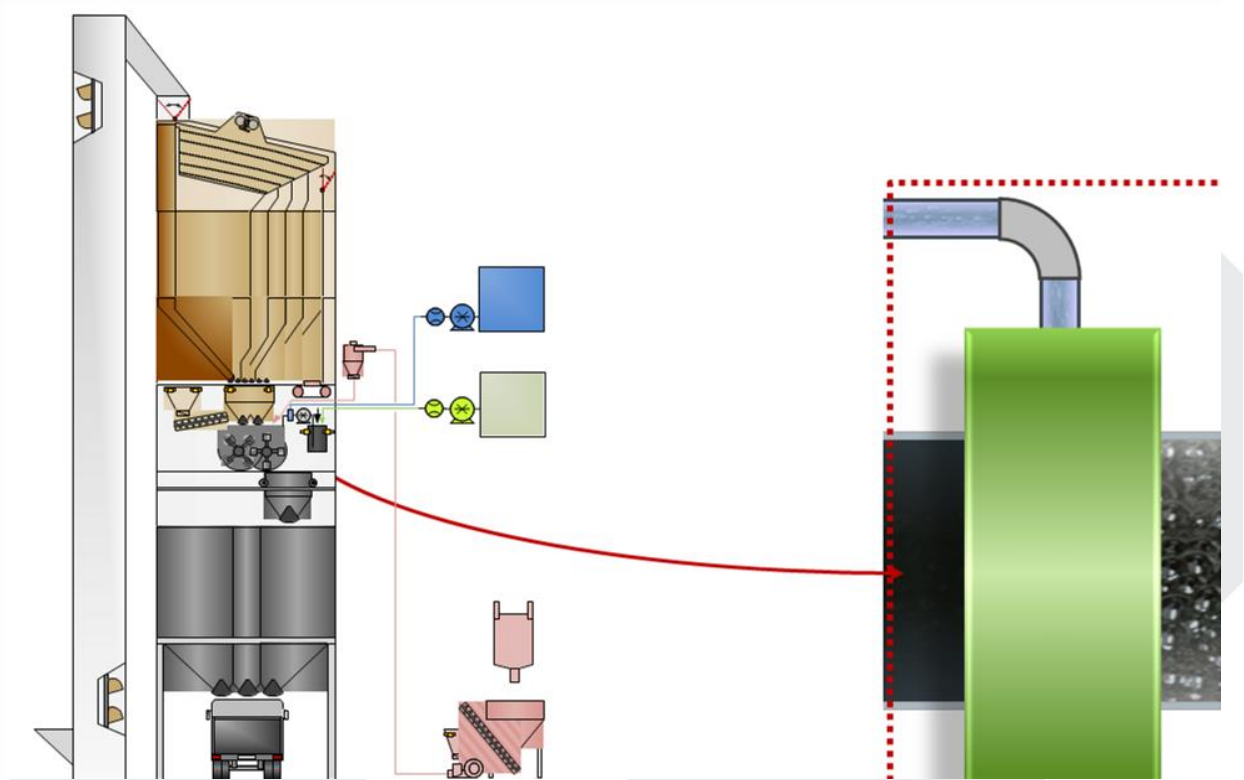


The energy consumption chart above shows that there is a linear increase in fuel consumption as the temperature increases.

Installing the Aquablack device will bring evident economic advantages, as can be seen in the graph below, and the return on investment will vary in relation to the foam bitumen production and the fuel used.

What technologies are actually used to achieve the above aims?

The best compromise between initial investment and achievable performance is using foam bitumen. MARINI offers a solution that requires the use of a special AQUABLACK kit: positioned immediately before the mixer, conventional bitumen and high-pressure water are injected into the mixer; the pressurized water allows creating a bitumen foam producing a mix with extraordinary workability even at temperatures below 40°C compared to conventional bitumen.



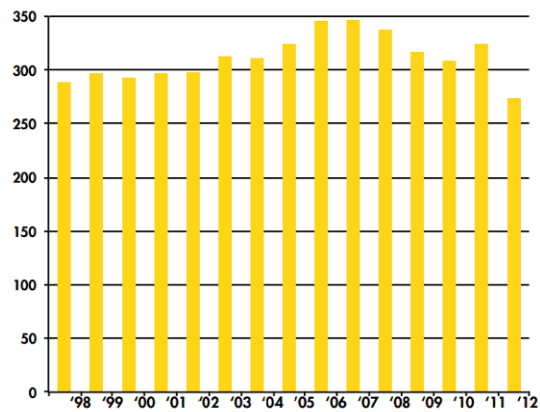
ENVIROMENTAL PROBLEMS

Warm mix asphalts respond to an attempt to improve the ecological quality of the product with particular reference to environmental impact.

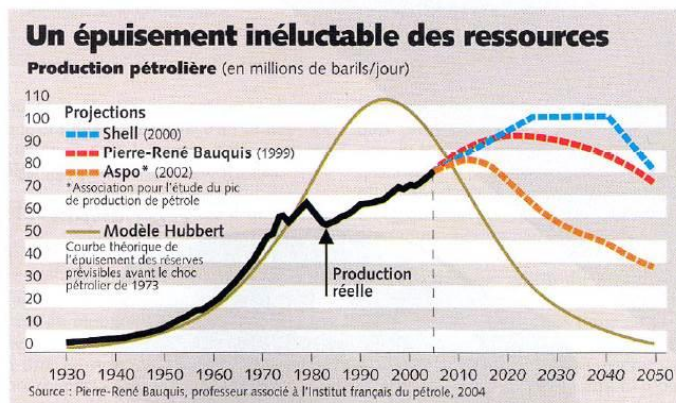
The main difficulty of demonstrating the value of these products on a real scale has by now been tackled and overcome and the last hurdle to cross is to actually have these technologies included in the specifications issued by the public administrations.

As testified by the data published by the EUROPEAN ASPHALT PAVEMENT ASSOCIATION, in Europe today (in some parts of the world, e.g. USA, already for a much longer time) “asphalt” no longer means only hot mix asphalt, but also warm mix asphalt, and the proposed technology wants to anticipate this necessary step in the direction of a green revolution in ITALY.

TOTAL PRODUCTION OF HOT AND WARM MIX ASPHALT IN EUROPE
(in million tonnes)

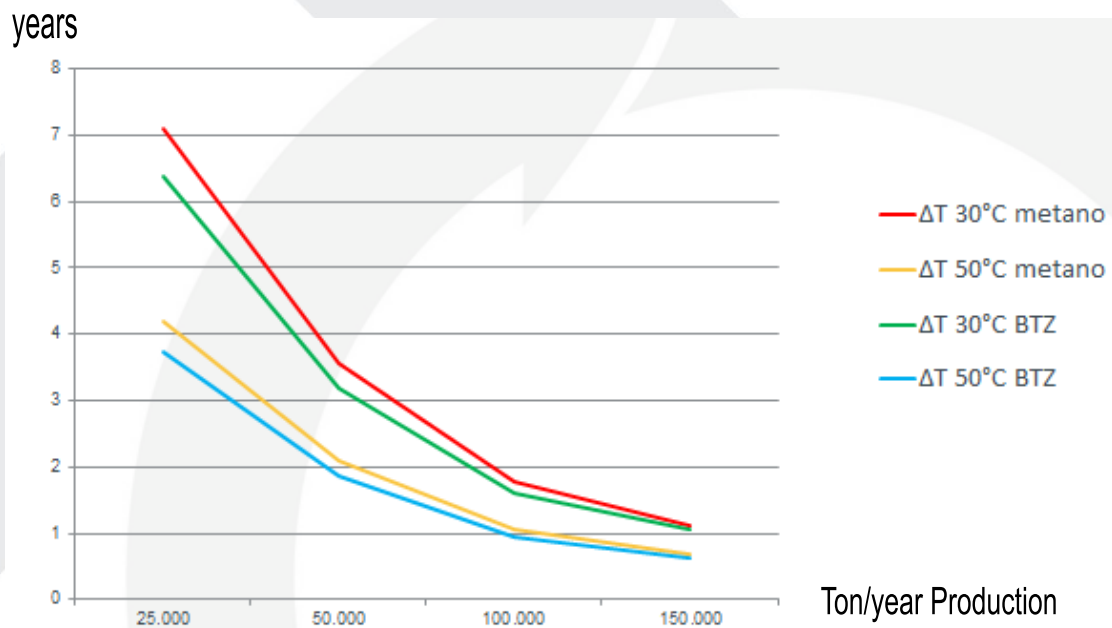


Correlated with this extremely important issue and in light of the oil prices (see graph below) which are making bitumen an ever more precious material, many companies in the sector are aiming at solving the problem, at least partially, by developing technological solutions that allow using the warm mix technologies at the same time recycling milled material to produce final products of the highest quality. As a leading company, Marini wishes to accompany its customers in seeking plant optimisation in order to reach the top in asphalt production with particular attention to two keywords: “recycling” and “lowering production temperatures”.



ECONOMIC ADVANTAGES & RETURN ON INVESTMENT

Installing the Aquablack device will bring evident economic advantages, as can be seen in the graph below, and the return on investment will vary in relation to the foam bitumen production and the fuel used.



Return on initial investment in relation to the fuel used

BUDGET TABLE OVERVIEW

COMPONENT	DESCRIPTION	MARINI NET PRICE [indicative]	INDICATIVE INSTALLATIONS DAYS [minimum]
AQUABLACK	PRESSURE-OPERATED FOAMING SYSTEM FOR BATCH PLANT.	€ 71.500	10 days
WARM MIX TECHNOLOGY	GRAVITY-OPERATED FOAMING SYSTEM FOR BATCH PLANT.	€ 93.500	15 days

NOTE: For correct qualification of the best technical solution and final economical proposal of the investment, please contact the area manager and the retrofitting department at the following e-mail address:

export.dept2@marini.fayat.com

CONDITIONS OF SUPPLY: DELIVERY EXW ALFONSINE ITALY – WITHOUT INSTALLATION SERVICE

