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Total

March 2019

Independent assurance report on the award of the "Total Ecosolutions" label to the "STYRELF ECO² Bitumen range (10/40, 25/55, 45/80, 40/100, 65/105, 75/130, 90/150, 120/200 and 200/300)" products

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Further to your request, we have performed a review in order to obtain reasonable assurance that the "STYRELF ECO² Bitumen range (10/40, 25/55, 45/80, 40/100, 65/105, 75/130, 90/150, 120/200 and 200/300)" products, a description of which can be found on the web site www.total.com¹ and in the external datasheet dated January 14th, 2019, have obtained the "Total Ecosolutions" label in accordance with the version 5 of the "Total Ecosolutions Guidelines" dated June 22nd, 2016 (hereafter referred to as the "Guidelines"); the Guidelines, which can be downloaded from the web site www.total.com¹, have been established on the basis of the ISO 14020 and ISO 14021 standards and were the subject of a preliminary external review which gave rise to the issue of an independent report on their design, this report also being accessible on www.total.com¹.

We conducted our review in accordance with international standard ISAE 3000 (International Standard on Assurance Engagements) defined by IFAC (International Federation of Accountants). It is the responsibility of Total to regularly update the Guidelines, to ensure that they are made available to internal users and third parties, and to apply the Guidelines. It is our responsibility to express, on the basis of our review, a conclusion on the award of the "Total Ecosolutions" label to the "STYRELF ECO² Bitumen range (10/40, 25/55, 45/80, 40/100, 65/105, 75/130, 90/150, 120/200 and 200/300)" products.

Nature and scope of our review

To express our conclusion, we performed the following review:

- We have assessed the reliability, accuracy, understandability, neutrality, completeness and relevance of the Guidelines and the constituents of the "Total Ecosolutions" label request file for products and services.

¹ Exact address: <http://www.ecosolutions.total.com>

- We have conducted interviews with the persons in charge of preparing the label request file, and analyzed the documentation available (aiming at justifying the methods of evaluation of the product's overall environmental impact and of the comparative performance evaluation with the reference product). We have also reviewed the meeting minutes and documents used during the validation process by the "Total Ecosolutions" Labelling Committee and the Total Ecosolutions Management Committee, in order to identify any risks of deviation in relation to the label award process defined in the Guidelines. However, the scope of our work did not include the verification of data used as sources for the calculation. To conduct the aforementioned procedures, we called on members of our teams specialized in environment and sustainable development.

Information or explanations

- The Guidelines aim to define the rules for the award of the "Total Ecosolutions" label, the organization and responsibilities, the methods for assessing the level of environmental performance and verifying the compliance with the Guidelines, the internal and external communication procedures as well as the rules for document management, in accordance with the requirements of the ISO 14020 and ISO 14021 standards.
- The "STYRELF ECO² Bitumen range (10/40, 25/55, 45/80, 40/100, 65/105, 75/130, 90/150, 120/200 and 200/300)" is a range of ready-to-use Polymer modified Bitumen (PmB) designed for the manufacturing of warm mix asphalt (WMA) road materials and complying with the EN 14023 European standard. The products are notably used in the context of specific applications of resistance to rutting, fatigue or harsh weather conditions due to the presence of polymers. Their specific formulation also reduces the manufacturing temperature of about 40°C compared to conventional hot mix asphalt (HMA).
- The assessment of environmental and health performance of the "STYRELF ECO² Bitumen range (10/40, 25/55, 45/80, 40/100, 65/105, 75/130, 90/150, 120/200 and 200/300)" products is performed by comparison, for an equivalent service provided, with a PmB bitumen of an equivalent grade used for the manufacturing of conventional hot mix asphalt.
- The environmental and health assessment of the "STYRELF ECO² Bitumen range (10/40, 25/55, 45/80, 40/100, 65/105, 75/130, 90/150, 120/200 and 200/300)" products has been realized through a Life Cycle Analysis (LCA), taking into account the production, transport and asphalt processing phases, to quantify greenhouse gas (GHG) emissions and energy consumption reduction. It also relies on a study from European Asphalt Pavement Association (EAPA) that provides estimates for atmospheric emissions (CO₂, SO₂, VOC, CO, NO_x) during the production of WMA. Non-methane Volatile Organic Compounds (NMVOC) emitted during the manufacture of bitumen were quantified on the basis of an academic study relying on data of an industrialist of the oil sector.
- The functional unit considered is "to manufacture 1t of a ready-to-use asphalt mix at an asphalt mixing plant".

- The benefit considered significant and validated by the "Total Ecosolutions" Management Committee of the "STYRELF ECO² Bitumen range (10/40, 25/55, 45/80, 40/100, 65/105, 75/130, 90/150, 120/200 and 200/300)" products is a reduction in energy consumption of 7% and a reduction in GHG emissions of 6% and 7% respectively for low and high polymer content grades over the entire life-cycle. Specifically, at the asphalt mixing plant, the use of these products results in a reduction of energy consumption of 35% and in a reduction of GHG emissions of 30% and 31% respectively for low and high polymer content grades.

Conclusion

In our opinion, the "STYRELF ECO² Bitumen range (10/40, 25/55, 45/80, 40/100, 65/105, 75/130, 90/150, 120/200 and 200/300)" products have been awarded the "Total EcoSolutions" label, in all its significant aspects, in accordance with the Guidelines.

Paris-La Défense, March 29th, 2019

ERNST & YOUNG et Associés
Sustainability Services



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