

The Lack of the Basalt Aggregate Resources to the Israeli Infrastructure Development *

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The increasing demand for a good quality Basalt-aggregate relies on the recognition of the engineering community about the contribution of these aggregate to improve the skid resistance of the asphalt layers. These conclusions were first published during the 80's, by the PWD (Maatz). The research has pointed out the advantages of the Basalt aggregate owing to its hardness, and significant contribution to superior skid resistance.

After some modifications the Basalt mixtures were embedded into the PWD & the general specifications. An average Basalt mixture contained 45% basalt and 55% dolomitic sand. At the late 90's the PWD has introduced a new generation of advanced asphalt mixtures such as "S shape" & SMA. These mixtures use more Basalt, ranging from 55% (S Mixtures) to 80% (SMA). The PWD has also announced a new policy to use Basalt aggregate along the main roads and HWYs.

The production of Basalt aggregate requires the usage of crushers and sieves with special alloys due to the rock hardness. While marketing the required Basalt products, a lot of crushed materials remains in the quarries as non marketable by-products.

The annual consumption for Asphalt-Basalt-aggregate is around 800,000 tons. To produce the good quality Asphalt-Basalt-aggregate the total production should be 3 to 4 times that figure. According to "TAMA14" there are only a few basalt quarries. Only one quarry produces a good quality aggregate but it has run out of reserves.

Most of the good quality aggregate are being supplied by the Bteha Pit, which is not a part of the TAMA. The total annual production capacity of this quarry is evaluated as 2,500,000 tons, which is not enough for the current consumption. This leads to an un-controllable increase in the prices of the Basalt aggregate.

An action should be implemented in various disciplines; The PWD is developing new methods to restrain the consumption; such as new methods for aggregate mixture design and careful usage of recycled asphalt layers. The geologist community should devote resources to prospect for new sources for good quality Basalt aggregate. The authorities should devote financial resources for the prospection works.

העדר המשאבים של חצץ הבזלת לענף התשתיות במדינת ישראל

הדרישה לאגרגט בזלתי איכותי הולכת וגוברת במשק התשתיות בישראל. הצריכה המוגברת נובעת מהיכולת של האגרגט הבזלתי להעלות את ערך החיכוך לתערובות אספלט. הצריכה השנתית של האגרגט הבזלתי בשוק הישראלי עומדת על כ-800,000 טון אגרגט איכותי. כושר הייצור הקיים במדינה בקושי עומד בביקושים. לשיפור המצב יוזמת מעצ עבודות מחקר אשר באמצעותן ניתן יהיה לפתח תערובות אספלט אשר ישפרו את הנצילות של האגרגט הבזלתי, ימזערו את צריכתו ויעשו שימוש מבוקר באספלט מקורצף – בתהליך מחזור. בתחום הגיאולוגיה נדרש יישום של עבודות לאיתור מקורות לאגרגט בזלתי. עבודות אילו דורשות השקעת משאבים מטעם הרשויות.

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