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CONCLUSIONS

Conclusions

Schlußfolgerungen

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Due to its economy, the orthotropic plate is being used to a steadily increasing extent, as shown by the numerous contributions received from the various countries and by the survey given by Mr. Thul and me as well. The problems involved by the pavement have been correctly recognized by everybody and there are efforts to solve the problems unsolved as yet. The approaches made and still being made do not differ much. Results of examinations, investigations, laboratory and full-scale tests therefore are quite similar, more or less.

The most important supposition for the durability of a perfect pavement is a bonding material or bond coating providing for a shear resistant connection to the steel deck plate as well as to the wearing surface. This opinion of ours has been shared by the gentlemen contributing to the discussion. If it is possible to make a bonding layer of such composition that it will protect the steel plate, against corrosion and against high temperatures occurring during application of poured asphalt, then a special protecting or insulating course, for instance a Mastix layer, may be omitted. In case, however, such a layer is necessary, it should not have a thickness of more than 5 mm = 3/16" nor a bituminous content of more than 15% by weight. In fact, many sorts of damage have been caused by a Mastix course either too thick or too soft. In general, it should be pointed out that most of the damage to wearing surfaces has been caused by inappropriate composition and by faultly application of the pavement.

Metal foils do have a good sealing effect no doubt. It is our opinion, however, that special care must be taken during application. Furthermore, we think it is necessary to have a bonding compound applied underneath as well as atop of the foil in order to obtain a perfect bond.

Because experience gathered with both mastic (or poured) asphalt and asphalt concrete has been quite the same, it cannot yet be finally decided which one will perform better, eventually. But it is very important to have the wearing surface as dense as possible. Asphalt concrete therefore has to be compacted by means of adequately heavy tyre rollers, as done with the VABIT or the stone filled Mastix surfacings.

Surely, part of the damage has been caused by the deflections of the plates, in particular cracking. Contrary to the opinion of our British colleagues and in accordance to that of our Japanese ones we do believe that the deflections represent a cause of secondary nature only and that it will be possible, indeed, to eliminate those sorts of damage by an appropriate composition and by a respective specification of the wearing surface. This opinion might be confirmed by the performance of many pavements which have done excellent service for several years.

In summary, I may point out that, right now, we have some pavements at hand which are nearly in close accordance with the requirements of traffic. It can be said that these wearing surfaces will have approximately the same life as road pavements. We should not neglect, however, that quite a number of important problems are still to be clarified. We are convinced, however, that all of these problems will be solved already within a short time, as soon as the many tests and experiments, undertaken extensively in different countries, have come to an end. We shall be in a position, then, to place in the engineer's hand together with the respective recommendations a tool which will enable him to provide for the adequate wearing surfaces called for by modern bridge design.

The exchange of ideas, which has been started among so many experts present here and today, should be continued in the future. Those who will gain from this exchange are all of us.