

SUMMARY

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As mentioned in the Introduction to this symposium, the objective has been to define the general problem of establishing a satisfactory level of practical and statistical significance of ASTM tests on bituminous paving materials. It seems fairly obvious from the remarks of the speakers that the problem can be divided into essentially three parts:

1. We must ensure that those test methods which have proved their place in bituminous technology are adequately described, both as to procedural details and the level of precision that can be expected. Penetration, softening point, sieve analysis, compression tests, and so on, fall into this category.

In regard to precision limits, it is not only necessary to state them unequivocally, as Mr. Brown recommends, but also to educate the users of the methods to take full advantage of them. For example, in a discussion before Committee D-4 two years ago, reference was made to examples of how sound repeatability limits may be used: (a) to evaluate test methods, (b) to evaluate operators, and (c) to write realistic specifications. Much of the value of cooperative testing is wasted if the information derived from repeatability limits is referred to only in occasional cases of disagreements between laboratories.

2. Test methods which have proved workable and precise in the laboratory should be properly fitted into the technology of the use of the materials, for ex-

ample, in specifications. This means adequate correlation with field experience, a subject discussed by Mr. McLeod with reference to asphalt cements. While in most cases ASTM cannot assume the burden of establishing the practical significance of tests, it can and should encourage the use of sound statistical techniques in obtaining and correlating data. The type of approach used at the AASHO test road, of which Mr. Irick has given us a small sample, is to be recommended. However, we must first learn to speak the language that the modern experimenter employs. ASTM could have a major role in establishing this line of communication.

3. New test methods must be evolved where there is an established need. Possibly the best example can be taken from Mr. Rader's remarks referring to low-temperature flexibility of paving mixtures as a critical feature in performance; it follows that the appropriate binder property is also critical. Yet ASTM does not have methods which measure these properties on bituminous materials. In other cases, a source-defining test is being used as a stop-gap measure in lieu of a sound performance-defining test—for example, the use of the ductility test to measure adhesiveness.

If the results of this symposium could be summarized simply, it would be to conclude that in the field of bituminous materials the various technical groups still have many areas of investigation open to them.

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