

ATT-51/95 VISUAL INSPECTION, Asphalt Concrete Paving Mixtures

1.0 SCOPE

This method describes the procedures for evaluating the appearance of freshly mixed asphalt concrete paving mixtures.

2.0 APPLICATION

Due to the wide variation in the physical characteristics of mixes, caused by different aggregate gradations, asphalt suppliers, etc., it is impossible to describe the detailed appearance of all mixes. This method, therefore, assumes that the materials technologist is thoroughly familiar with the appearance of a properly proportioned, mixed, heated, and graded sample of the mix upon which this inspection will be performed. On this basis, the extremes of each item included in the inspection, can be evaluated relative to the standard mix.

3.0 PROCEDURE

Excessive variation in the temperature, asphalt content, gradation, mixing, moisture content, segregation and contamination of asphalt concrete mixes cause noticeable variations in the appearance of a mix. The following sections deal in detail with each of the mentioned items.

3.1 Temperature

Mix temperatures are modified as necessary to compensate for varying asphalt types, aggregate mix characteristics, or other conditions as determined by the Project Manager.

3.1.1 Too Hot

The emission of blue smoke from the mix indicates overheating. The mixing temperature of the asphalt mixture shall be approved by the project manager and shall not exceed 155°C (unless otherwise specified).

3.1.2 Too Cold

An under-heated mix may appear sluggish or stiff as it is being placed in the truck at the plant or in the paver hopper on the road. Close inspection may reveal nonuniform distribution of the asphalt, which will be evident by improper coating of the coarser aggregate particles. After loading in the truck, an abnormally peaked pile may indicate under heating.

3.2 Asphalt Content

3.2.1 Too Much Asphalt

If loads are leaving the plant or arriving on the road slightly domed or peaked and suddenly a load appears lying flat, it may contain too much asphalt (or moisture). These mixes may, depending on the aggregate grading, appear slick, wet, or greasy. Free asphalt may be evident in the truck box after dumping.

3.2.2 Too Little Asphalt

Too little asphalt is generally evident by a dry looking mix, slightly brown in colour, lacking the normal black shiny lustre. It may appear to be quite granular in texture and be improperly coated. An abnormally peaked condition in the truck is also another indication of too little asphalt.

3.3 Gradation

3.3.1 Excess Coarse Aggregate

The mix will generally look quite harsh. It may resemble a mix with too much asphalt though its asphalt content has not been changed. This is caused by a reduction in the mix surface area due to the decrease in fines (or increase in coarse aggregate particles).

3.3.2 Excess Fine Aggregate

The mix will generally display the same characteristics as those which are under asphalted. The lack of coarse aggregate and excess of fines (which are easily detected) cause an increase in the surface area of the mix. The mix will therefore appear lean though its asphalt content has not been changed.