Australian/New Zealand Standard™

Methods of sampling and testing asphalt

Method 14.2: Field density tests—Determination of field density of compacted asphalt using a nuclear thin-layer density gauge

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CE-006, Asphalt and Sprayed Surfacing, to supersede AS/NZS 2891.14.2:1999.

METHOD

1 SCOPE

This Standard sets out the method for determining the field density of thin layers of asphalt using a nuclear thin-layer density gauge with two backscatter modes of operation or geometrics. The gauge simultaneously determines, by the independent backscatter geometrics, two values of gross mass per unit volume. These values are then used, with the depth calibration, to estimate the density of the top layer of asphalt, at the thickness selected, using a proportioning calculation.

The method is applicable to asphalt layers between 25 mm and 100 mm thick and to asphalts having a nominal maximum size not greater than 40 mm.

The method does not detail the operation of the gauge but refers the operator to the manufacturer's handbook.

When nuclear gauges are used for density measurement, the quantity of material being assessed is not precisely known. However, reference to the manufacturer's handbook and to current literature may indicate the likely volume.

A nuclear gauge gives an indirect measure of field density and, hence, requires calibration, in accordance with AS/NZS 2891.14.3. Regular checks on the operation and the calibration of the gauge are also required (see Appendix A). A density offset is determined for each material being tested (see Appendix B).

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS		
2891	Methods of sampling and testing asphalt	
2891.1.2	Method 1.2:	Sampling—Coring method
2891.9.1	Method 9.1:	Determination of bulk density of compacted asphalt—Waxing procedure