

## TECHNICAL REPORT TITLE PAGE

<b>1. REPORT NO.</b>	<b>2. REPORT DATE</b>
MLR-99-3	July 2001
<b>3. TITLE AND SUBTITLE</b>	<b>4. TYPE OF REPORT &amp; PERIOD COVERED</b>
Plastic Air Content versus Hardened Air Content by High Pressure Air Meter	Final Report, May 2000 to July 2001
<b>5. AUTHOR(S)</b>	<b>6. PERFORMING ORGANIZATION ADDRESS</b>
Todd D. Hanson PCC Engineer	Iowa Department of Transportation Office of Materials 800 Lincoln Way Ames, Iowa 50010
John Hart Assistant PCC Engineer	
<b>7. ACKNOWLEDGMENT OF COOPERATING ORGANIZATIONS/INDIVIDUALS</b>	
<b>8. ABSTRACT</b>	
<p>Plastic air content is typically tested by the pressure method, ASTM C138. Loss of air content through the paver has been shown to exceed 2 percent at times. Research<sup>1</sup> has shown that early deterioration of pavements in Iowa may be directly or indirectly related to low or inadequate air content.</p> <p>Hardened air content is typically checked using the linear traverse method, ASTM C457. The linear traverse method is very time consuming and could not be used on a production scale. A quick and effective method of testing in place air content is needed.</p> <p>Research has shown a high degree of correlation with the high-pressure method of determining air content of hardened concrete versus plastic air content in laboratory conditions. This research indicated that air contents are more variable when comparing core results to plastic air content, although the overall average for the air content was comparable. Perhaps, the location of the plastic air content test, obtained from construction records, versus location of the cores was not as accurate as needed.</p>	
<b>9. KEY WORDS</b>	<b>10. NO. OF PAGES</b>
Air Content High Pressure Air Test	14