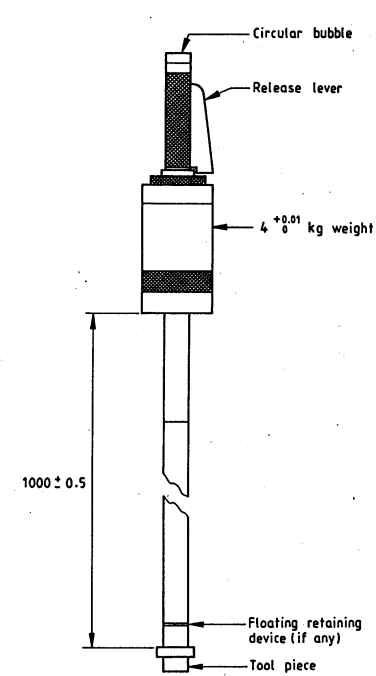


Appendix U.7.1 – BRE Screed Tester

Generic Name of Test	<i>Impact Steel Hammer : Abrasion / Non Destructive Test</i>						
Principle of Test	Steel mass free falls onto concrete surface						
Historic Development of Test	The <i>BS 8204 : Part 1 : 1987 Screed test</i> was developed to detect inadequately compacted screeds that have a hard dense surface skin, as inadequacies in these screeds cannot be detected visually. [Newman (1997c)]						
Apparatus	The apparatus shown in figure U.7.1.1 consists of a 1m long tubular shaft along which an annular mass of 4kg travels down when it is released by pressing a lever. A case hardened tool piece that has a cylindrical face of 25 mm diameter is fastened to the end of the guide rod. [BS 8204 : Part 1 : 1987]						
 <p data-bbox="893 1050 1299 1134">Figure U.7.1.1 Diagram of BRE screed testing apparatus [BS 8204 : Part 1 : 1987]</p>							
Test Method	A flat smooth area of screed is selected and the tool piece is placed on the screed. With the guide rod held vertically 4 successive blows of the test weight are applied to the tool piece at the same position on the screed, the test weight dropping each time freely from the trigger point. The test is not suitable for concrete. [BS 8204 : Part 1 : 1987]						
Abrasion Wear	This is measured as the depth of indentation. [BS 8204 : Part 1 : 1987]						
References	<table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"><u>Author</u></th> <th style="text-align: left;"><u>Comment</u></th> </tr> </thead> <tbody> <tr> <td>BS 8024 : Part 1 : 1987</td> <td>Source document</td> </tr> <tr> <td>Newman (1997c)</td> <td>Source document</td> </tr> </tbody> </table>	<u>Author</u>	<u>Comment</u>	BS 8024 : Part 1 : 1987	Source document	Newman (1997c)	Source document
<u>Author</u>	<u>Comment</u>						
BS 8024 : Part 1 : 1987	Source document						
Newman (1997c)	Source document						

APPENDIX U.7.1

Mechanisms according to Author

(i) BS 8204 : Part 1 : 1987: Depths of wear of 3mm, 4mm and 5mm categorise the screeds as either type A, B or C concrete.

Mechanisms according to writer [R0 S0 I4]

This test is designed to ensure that a screed does not merely consist of a thin albeit very hard skin, with an inferior supporting layer. The test determines if the 'core' of the screed exceeds a certain minimum value, and hence will not break up when subjected to in-service compression / impact / abrasion.

Essentially this is an impact test, capable of producing Hertzian cone cracks, lateral cracks and axial cracks (see figure U.7.1.2) as well as severe crushing. The type and severity of cracking/crushing will depend on the tensile & compressive strength of the screed. The test is not meant to be used on structural strength concrete slabs - clearly there will be no penetration.

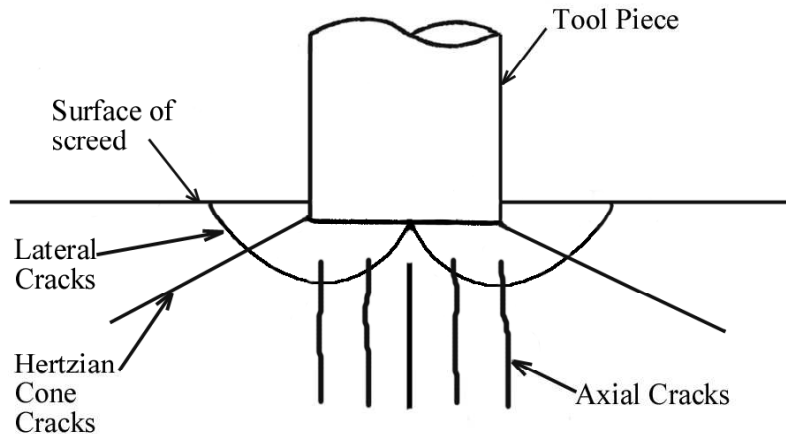


Figure U.7.1.2 Cracking mechanisms beneath tool piece