Test Procedure for

FLEXURAL STRENGTH OF CONCRETE USING SIMPLE BEAM THIRD-POINT LOADING

TxDOT Designation: Tex-448-A

Effective Date: July 2008

1. SCOPE

1.1 This test method covers the determination of flexural strength of concrete by the use of a simple beam with third-point loading employing bearing blocks to ensure that forces applied to the beam will be perpendicular to the face of the specimen and applied without eccentricity.

1.2 The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.

2. PROCEDURE

2.1 Refer to ASTM C 78 for the test procedure, as supplemented by the following.

2.1.1 When using a field flexural test machine for an English-units project, calculate the Modulus of Rupture (MOR) as follows.

2.1.1.1 Record max load from "B" spiral.

2.1.1.2 Locate the correction factor from Table 1, if specimen is other than 6 × 6 in. measurement.

2.1.1.3 Multiply max reading by the factor from Table 1 and record MOR to the nearest 5 psi.

2.1.2 When using a field flexural test machine for a metric-units project, use the IP spiral to determine the maximum applied load.

Table 1—Hydraulic Beam Breaker Factors for Calculating Modulus of Rupture (MOR)

		Beam Width (in.)										
		5-11/16	**5-3/4**	**5-13/16**	**5-7/8**	**5-15/16**	**6**	**6-1/16**	**6-1/8**	**6-3/16**	**6-1/4**	**6-5/16**
Beam Depth (in.)	**5-11/16**	1.174	1.161	1.149	1.137	1.125	1.113	1.101	1.090	1.079	1.068	1.058
	5-3/4	1.149	1.136	1.124	1.112	1.100	1.089	1.078	1.067	1.056	1.045	1.035
	5-13/16	1.124	1.112	1.100	1.088	1.077	1.066	1.055	1.044	1.033	1.023	1.013
	5-7/8	1.100	1.088	1.077	1.065	1.054	1.043	1.032	1.022	1.011	1.001	0.991
	5-15/16	1.077	1.066	1.054	1.043	1.032	1.021	1.011	1.000	0.990	0.980	0.971
	6	1.055	1.043	1.032	1.021	1.011	1.000	0.990	0.980	0.970	0.960	0.950
	6-1/16	1.033	1.022	1.011	1.000	0.990	0.979	0.969	0.959	0.950	0.940	0.931
	6-1/8	1.012	1.001	0.991	0.980	0.970	0.960	0.950	0.940	0.931	0.921	0.912
	6-3/16	0.992	0.981	0.971	0.960	0.950	0.940	0.931	0.921	0.912	0.903	0.894
	6-1/4	0.972	0.962	0.951	0.941	0.931	0.922	0.912	0.903	0.894	0.885	0.876
	6-5/16	0.953	0.943	0.933	0.923	0.913	0.903	0.894	0.885	0.876	0.867	0.859

3. ARCHIVED VERSIONS

3.1 Archived versions are available.