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|  | | | | **Illinois Modified AASHTO T 22 Checklist**  **Procedure for Obtaining Compressive Strength of Cylindrical Concrete Specimens** | | | | | |
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| The following is a summary checklist of the key steps involved in operation of compression test machines. | | | | | | | | | |
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| **Did the tester explain that:** | | | | | | | **YES** | **NO** |  |
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| 1. | Calibration of the test machine should be done annually, not to exceed 12 months. Recalibration must be done whenever the machine is adjusted, relocated, repaired, and when there is any doubt of accuracy | | | | | |  |  |  |
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| 2. | The machines shall be equipped with two steel bearing blocks | | | | | |  |  |  |
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| 3. | The spherical surfaces of the compression head shall be kept clean and lubricated with a petroleum-type oil (not grease) | | | | | |  |  |  |
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| 4. | Specimens shall not be tested if the diameter varies by more than 2% (~1/8 in. (3 mm)) | | | | | |  |  |  |
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| 5. | The test specimen shall not depart from perpendicularity to the axis by more than 0.5° (~0.12 or 1/8 in. in 12 in. (3 mm in 300 mm)) (Section 6.2 in T 22, Section 6.1 in ASTM C 1231) | | | | | |  |  |  |
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| 6. | The ends of the test specimen shall be plane within 0.002 in. (0.050 mm) with no depressions across any diameter greater than 0.20 in. (5 mm). (Section 6.2 in T 22, See also ASTM C 1231) | | | | | |  |  |  |
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| 7. | Test specimens that do not meet the above specifications shall be sulfur capped, sawed, or ground before testing | | | | | |  |  |  |
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| 8. | The number of cylinders measured to determine average diameter may be reduced to 1 in 10 or 3 per day, whichever is greater if all cylinders are known to have been made from a single lot of molds | | | | | |  |  |  |
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| 9. | The test shall be made as soon as practical after removal from curing, and test specimens shall be kept moist by any convenient method after removal from moist storage and before testing | | | | | |  |  |  |
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| 10. | During the application of the first half of the anticipated loading phase, a higher rate of loading shall be permitted | | | | | |  |  |  |
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| 11. | The load shall be applied continuously and without shock | | | | | |  |  |  |
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| 12. | The load rate shall be 28 to 42 psi/s (0.20 to 0.30 MPa/s) the latter half of the test (792 to 1188 lbs/s (359 to 539 kg/s)) | | | | | |  |  |  |
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| 13. | No adjustments shall be made in the load rate as the ultimate load is being approached and the rate decreases due to cracking | | | | | |  |  |  |
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| 14. | The load shall be applied until failure, and then the maximum load is recorded | | | | | |  |  |  |
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| 15. | The number of uses of each neoprene pad is recorded. Each pad shall not be used for more than 100 cylinders | | | | | |  |  |  |
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| 16. | The compressive strength is calculated by dividing the maximum load by the average cross sectional area of the specimen (Load/R2) | | | | | |  |  |  |
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| 17. | If the specimen length to diameter ratio is less than 1.75, apply the correction factor (1.75 × 0.98, 1.50 × 0.96, 1.25 × 0.93, 1.00 × 0.87) | | | | | |  |  |  |
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| Tester: | |  | Observer: | |  | Date: | |  | |
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| REMARKS: | |  | | | | | | | |
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