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Specification for Concrete Compression Machine

1. The machine shall have fully automatic operation. It must be able to automatically set the pre-load pressure on the specimen, as well as automatically apply the load pressure to the specimen, all without the need for an operator to approximate proper load values.
2. The machine must have a digital display design with a keypad and LCD display to set test parameters simply and efficiently. It must have the pace rate indicated on the display to allow operators to monitor load rate during test. It must display the peak load capture and recording of the specimen. The display shall be mounted at a height of 50" to 62" for direct eye contact by the operator.
3. The machine must include all tooling and test fixtures, and shall be able to test the following specimens:
 - a. Concrete cylinders of 6" x 12" dimensions with unbounded caps, including high strength specimens
 - b. flexural beam samples of 6" x 20" size
 - c. 2" cube samples.
4. The machine must have a platen of sufficient design/size to be wear and corrosion resistant and facilitate easy loading of 6" x 12" cylinders with unbonded caps. quick removal of completed specimen, and rapid cleaning of the test area. Lower platen shall be scribed with concentric circles for easier centering of test specimens.
5. The machine must be capable of applying at least 600,000lbf of pressure accurately at a rate of 35 psi/second +/- 7psi/second for testing high compression samples.
6. The machine must be ready to test flexural strength of concrete beams, up to 100kN (22,000lbf) maximum load, at a rate of 150 fps/minute +/- 25 fps/minute.
7. The machine must be readable in U.S. customary and SI (metric) units.
8. The machine must be supplied with a computer system and software that will record the sample(s) load from the compression machine.
9. The machine must have a minimum of two (2) year warranty, parts and labor, for repair of defects.
10. The machine must be delivered the Alabama Department of Transportation, ATTN: Materials and Test Section, 1020 Bankhead Highway West, Birmingham, Alabama 35204.
11. Delivery must include installation, initial set-up, calibration, and one (1) day of service to instruct ALDOT personnel on the basic operation of the compression machine.