

**Zoznam zariadení a služieb potrebných k implementácii tretej etapy projektu
ACU/2005/04/AF/02 „A laboratory for testing construction materials for Herat University“**

POS.		DESCRIPTION	Q.TY
1. MULTIFRAME FULLY AUTOMATIC / CLOSED LOOP TEST SYSTEM ON CONCRETE / CEMENT TO ASTM-EN CONSISTING OF:			
A) AUTOMATIC CONTROL UNIT (CLOSED LOOP) MANAGING UP TO 3 OR 4 TEST FRAMES (NOT AT SAME TYPE) COMPLETE WITH INK JET PRINTER A4 FORMAT			
1		SERCOMP7 - Stand alone automatic control console for connection to up to two frames. 230V/50Hz/1Ph	1
2		Upgrading of the SERCOMP7 or MCC8 control console for the connection of up to 4 frames	1
3	-	Ink jet printer HP type A4 format complete with: - serial cable for connection to Sercomp 7; - 2 spares toners; - 3 set of 100 paper sheets	1
B) 3000 KN CONCRETE COMPRESSION FRAME (HIGH RIGIDITY / STABILITY TESTED-CERTIFIED TO EN 12390-4) CLASS 1 FROM 30 KN			
4		3000 kN cap. compression machine, high standard four column solid frame, tested for stability to EN/BS specs, for cubes up to 200 mm and cylinders up to 160 x 320 mm, Frame only. Supplied complete with connection kit for separate control console and basement.	1
5		Special calibration of load digital readout unit assuring class 1 from 1% of testing machine full scale (maximum load)	1
6		Extra cost for the heavy duty spherical seat model 50-Q0050. Available for EN machines only	1
C) SET OF SPACERS FOR TESTING CUBES-CYLINDERS-CORES			
7		Distance piece dia 200 x 50 mm	2
8		Distance piece dia 200 x 68 mm	3
9		Distance piece dia 200 x 30 mm	1
E) DUAL CAPACITY 250/15 KN UNIVERSAL FRAME EQUIPPED WITH ELECTRONIC LOAD CELLS GRANTING CLASS 1 FROM 2.5 AND 0.75 KN COMPLETE WITH SAFETY GUARDS			
10		Dual chamber 15/250 kN cap. compression testing machine. Frame only. Vertical daylight 200 mm. Supplied complete with connection kit for separate control console and basement. (With load cell)	1
11		Transparent rigid safety guard for testing frame series 65-L13xx	1
12		Special calibration of load digital readout unit assuring class 1 from 1% of testing machine full scale (maximum load)	1

13		Special calibration of load digital readout unit assuring class 1 from 5% of testing machine full scale (maximum load)	1
F) SET OF ACCESSORY FOR: - COMPRESSION TEST ON CEMENT CUBE 2 INCHES TO ASTM 109; - ACCESSORY FOR COMPRESSION TEST ON BROKEN PRISM TO EN 196; - FLEXURE TEST ON CEMENT PRISM 4X4X16 CM TO ASTM 348; - SPACERS TO TEST CORES 5CM X 10CM (LOW RESISTANCE CONCRETE).			
14		Compression device to test portions of 40 x 40 x 160 mm mortar prism broken in flexure.	1
15		Compression device to test 50 mm (2") mortar cubes	1
16		Flexure testing device for 40x40x160 mm mortar specimens	1
17		Distance piece 165 mm dia x 30 mm height	
G) FLEXURE FRAME ON CONCRETE BEAM TO EN 12390-5 100 KN CAPACITY WITH PRESSURE TRANSDUCER CLASS 1 FROM 5 KN			
17		100 kN cap. flexure frame complete with pressure transducer, for connecting to control consoles.	1
18		Base for flexural frame.	1
19		Special calibration of load digital readout unit assuring class 1 from 5% of testing machine full scale (maximum load)	1
2. 2 INCHES / 5CM CUBE MOULD			
20		50 mm three gang cube mould	2
3. AUTOMATIC MECHANICAL FLEXURE TESTER ON CEMENT BRIQUETTE TO ASTM (AND ON PRISM 4X4X16 CM TO EN 196, AS OPTIONAL)			
21		Automatic flexure/tension machine. 5 kN cap. 230V/50Hz/1Ph	1
22		Tensile attachment for briquette	1
4. VIBRATING TABLE FOR CONCRETE COMPLETE WITH: - CLAMPING DEVICE; - SAFETY PEDAL.			
23		Vibrating table 800 x 800 mm. without switch 230V/50Hz/1ph	1
24		Waterproof pedal switch for vibrating tables 110-230V/50-60Hz/1ph	1
25		Clamping device for 55-C160/H	1
5. VE BE APPARATUS			
26		Vebe' consistometer. 220-240V/50Hz/1PH	1
6. CONCRETE MIXER			
27		Pan type mixer, pan capacity 120l, mixing capacity 60l. 230V/50Hz/1ph	1
7. SLUMP CONE TEST SET			

28		Stainless steel slump cone	1
29		Base plate for slump cone	1
30		Steel rule 300 mm	1
31		Tamping rod dia 16 mm x 600 mm	1
32		Hopper for slump cone	1
33		Round aluminium scoop 1000 ml cap.	1
8. 15 CM CUBE MOULD			
34		mm cast iron general purpose cube mould	10
9. BEAM MOULD 10X10X50 CM			
35		Concrete beam mould 100 x 100 x 500 mm	3
10. DRYING OVEN 220 LITERS DIGITAL THERMOSTAT FORCED AIR CONVECTION			
36		220 litres cap. forced convection laboratory oven, digital thermostat/display. 230V/50-60Hz/1Ph.	1
11. PRISM MOULD 4X4X16 CM			
37		Three place mould 40 x 40 x 160 mm. according to EN specs.	6
12. AUTOMATIC / PROGRAMMABLE MORTAR MIXER WITH SAND DISPENSER / EXTRA DOSING UNIT			
38		Automatic programmable mixer AUTOMIX complete with sand dispenser ad additional feeder for general purposes. Bowl capacity 5 lt. 230V/50-60Hz/1ph	1
13. LE CHATELIER RING MOULDS 12 PIECES WITH ACCESSORIES			
39		Le Chatelier moulds. Set of 6	2
40		Glass plate 50x50 mm	24
41		100 g weight for le chatelier	12
42		Extensibility of mould apparatus	1
43		Tamping rod 17 mm dia x 70 g	1
44		Rule length 150 mm	1

14. SET OF ELECTRONIC BALANCES:			
45		Top pan digital balance, 30000 g cap. 0,5 g sensitivity, battery operated with mains adaptor, RS232 output.	1
46		Top pan digital balance 4500 g capacity x 0,1 g sensitivity. RS 232 output. 230V/50-60Hz/1PH.	1
47		Set of rechargeable batteries for balance D0644/B INCLUDED IN THE SUPPLY	1
15. CONCRETE HAMMER WITH CALIBRATION EQUIPMENT			
48		Concrete test hammer type -N- aluminium body case complete with calibration certificate.	1
49		Calibration anvil for concrete test hammer type -N- and -NR-	1
16. DIGITAL PULL OFF TESTER 16 KN TO EN 1015			
50		Bond strength/pull-off digital tester. Load capacity 16 kN. High performance readout system DG1	1
51		Drill bit 50 mm dia	2
52		Stainless steel test disc 50 mm dia x 20 mm thickness (conforming to EN1015-12 and EN1542)	20
53		Adhesive compound 1 Kg	2
17. CONCRETE SPREADING TABLE			
54		Concrete spreading table.	1
18. CUBE MOULD 10 CM			
55		100 mm single cube mould	10
19. JOLTING TABLE FOR 4X4X16 CM PRISM MOULD COMPLETE WITH FEED HOPER			
56		Mortar jolting apparatus with digital counter 230V/50Hz/1Ph	1
57		Feed hopper	1
58		Pair of scrapers to EN 196	1
20. REFERENCE STANDARD SAND TO EN 196			
59		Reference sand to EN 196. 40 bags, tot. 54 kg.	1

21. RUBBER SCRAPER			
60		Hard rubber scraper	1
22. BRIQUETTE MOULD			
61		Briquette mould	6
23. PETROL MOTOR CORING UNIT			
62		Petrol driven universal core drilling machine.	1
24. DIAMOND CORING BIT 50 AND 100 MM DIAMETER			
63		Coring bit for 50 mm dia x 400 mm long cores, with permanently attached head 1 1/4 W.	2
64		Coring bit for 100 mm dia x 400 mm long cores, with permanently attached head 1 1/4 W.	2
65		Core extractor dia 100 mm	1
66		Core extractor dia 50 mm	1
25. AIR CEMENT METER FOR CONCRETE			
67		Air entrainment meter, pressure gauge type, (calibration kit included)	1
26. STRAIGHT EDGE			
68		Tamping bar 380 mm long x 25 mm square	1
27. CUTTING UNIT FOR CORES 100mm DIAMETER			
69		Universal specimen cutting machine. 380V/50Hz/3ph.	1
28. FLOW TABLE ASTM HAND OPERATED			
70		Flow table ASTM and BS complete with mould. Hand operated	1
29. VICAT APPARATUS			
71		Vicat test set ASTM method	1
72		Initial/final needle 1 mm dia set of 6	1
73		Plastic mould to ASTM/AASHTO	3
74		Consistency plunger 10 mm dia	1

75		Supporting plate	5
30. CALIBRATION EQUIPMENT CONSISTING OF:			
A) DIGITAL DATALOGGER FOR ELECTRONIC LOAD CELLS COMPLETE WITH: - CARRYING CASE; - PRINTER BATTERY OPERATED; - SOFTWARE (TO BE USED WITH PC); - POSSIBLE CONNECTION TO ANY PORTABLE PC (NOT INCLUDED).			
76		Digimax Plus 1 channel version, for use with strain gauge load cells or trasducers, display in divisions. 230V/50-60Hz/1ph	1
77		Hard plastic carrying case for 82-P0801/E tester and 82-P0171 serial printer	1
78		Force calibration verification MS Excel Spread sheet.	1
79		Serial cable for PC connection INCLUDED IN THE SUPPLY	1
80		24 columns serial printer, rechargeable battery operated. External battery charger included.	1
81		D-Terminal software for the capture and storing of testing data ASCII format for PC downloading by the serial port RS232. W98 compatible and higher. INCLUDED IN THE SUPPLY	1
82		Set of spare battery for P0172/A printer included	1
B) ELECTRONIC LOAD CELL CLASS 1 - AA CAPACITY 3000 KN COMPLETE WITH CARRYING CASE			
83		Load cell 3000 kN. Supplied complete with carrying case	1
C) ELECTRONIC LOAD CELL CLASS 1 - AA CAPACITY 300 KN COMPLETE WITH CARRYING CASE			
84		Load cell 300 kN. Supplied complete with carrying case	1
D) ELECTRONIC LOAD CELL CLASS 1 - AA CAPACITY 50 KN COMPLETE WITH CARRYING CASE			
85		50 kN capacity strain gauge load cell	1
86		Carrying case included in the supply	1
87		Loading cap for 50 kN cell	1
89		Spherical seat for 50 kN load cell	1
INSTALLATION / PUT IN OPERATION			

PACKING AND F.O.T. CHARGES
TRANSPORT TO HERAT BY TRUCK + INSURANCE