



WESTERN MICHIGAN UNIVERSITY

Bronco Construction Research Center

Item Code	Description	Quantity	\$ Each	Amount
Staff Compensation				
Center Director	Director	1	\$72.84/hour	
Labor- Research Associate	R3 Research Associate	1	\$33.76/hour	
Labor- Carpenter	Carpenter/General Labor	1	\$30.00/hour	
Labor- Mechanical Engineer	\$30/hour	1	\$30.00/hour	
Student Worker	\$20/hour	1	\$20.00/hour	
Hardness				
Rockwell Hardness	ASTM E18 – hardness of metallic materials	EA	\$32.16/each*	
Brinell Hardness	ASTM E10 Hardness of metallic materials by portable hardness testers	EA	\$80.40/each*	
Vickers – Hardness	ASTM E384 micro indentation hardness of materials	EA	\$80.40/each*	
Profile Harness	ASTM E384 micro indentation hardness of materials	EA	\$107.20/each*	
Case Depth	ASTM E384 – up to 10 hits per component	EA	\$107.20/each*	
Facility Operating Expenses (Daily)				
Facility Operating Expenses	Daily Rate	1	\$75.51/day	
Equipment Costs				
Equipment Costs (10-year depreciation)	Daily Rate	1	\$155.80/day	
TOTAL				

Above tests entail producing a data set and graphs, no analysis. Tests requiring machining, sample preparation, fixturing, or significant setup time will be charged by the hour at applicable rates plus materials costs. An estimate will be given upon receipt of samples

*specimen preparation and fixturing is additional via Staff Compensation + Facility Operating Expenses