



**WESTERN MICHIGAN UNIVERSITY**

Bronco Construction  
Research Center

## Estimate

Item Code	Description	Quantity	\$ Each		Amount
<b>Staff Compensation</b>					
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		
<b>Impact</b>					
Charpy Notched bar impact testing of metallic materials	ASTM E23 Notched bar impact testing of metallic materials	EA	\$40.00/each*		
Impact testing of welding procedures	ASME VIII UCS-67 rules for construction of pressure vessels division – impact testing of welding procedures	EA	\$40.00/each*		
Fusion Welding of Steel	CSA W47.1 fusion welding of steel	EA	\$80.00/each*		
Steel Products	ASTM A370 steel products	EA	\$104.00/each*		
Optional Vee-notch		EA	\$8.00/each*		
<b>Facility Operating Expenses (Daily)</b>					
Facility Operating Expenses	Daily Rate	1	\$112.71/day		
<b>Equipment Costs</b>					
Equipment Costs (10-year depreciation)	Daily Rate	1	\$232.53/day		
<b>TOTAL</b>					

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