

# PROTECTIVE STRUCTURES



**WELDCO-BEALES MFG.**  
SPECIALISTS IN ATTACHMENT DESIGN AND MANUFACTURING

# DESIGN & ENGINEERING

**Weldco-Beales Manufacturing (WBM)** designs and manufactures protective structures for Off-Highway machinery and specialty applications. With over twenty-five years experience, we fully understand our customer's applications and are capable of producing a complete turn key unit fully engineered and tested to meet various standards and codes.



**WBM works from ideas or initiates the design producing a conceptual model. Our engineering facilities are fully integrated and our capabilities include:**

- Computer Aided Design and Drafting (CADD) modeling software ACAD, PRO-E and INVENTOR
- Finite Element Analysis (FEA) stress and deflection software ALGOR
- Specification and functional development



- Designed to protect the excavator cab and operator from falling objects in dangerous environments
- Front window guarding for extra operator protection (can be bolted and hinged in place for swing-out capabilities)
- Rubber mounts



- Provide increased operator and machine protection in the event of a roll over
- Computer-aided design of the structure ensures compliance with rigid standards
- Low temperature impact material
- Canopies install directly to OEM factory frame mounts or supplied for special applications

# MANUFACTURING

WBM has manufacturing facilities located in major North American markets. We are fully integrated and are capable of manufacturing and supporting your product. We have the people and tools to manage your project, and ensure on-time deliveries.

## OUR PROCESSES INCLUDE:

- Laser, plasma and flame cutting
- Shearing and forming
- Tube bending
- Computer Numerical Control (CNC) machining
- Manual and robotic welding
- Sand blasting and painting
- Completed package, including electrical, HVAC, controls, and sound suppression



# PROTECTIVE STRUCTURES, GUARDING AND PARTS

PROTECTIVE STRUCTURES		
ROPS: Enclosed (cab)	Soft Cabs to fit under ROPS	Forestry Cabs
ROPS: Open (canopy, roll bar or T-bar)	ROPS enclosures (skin kits)	Plant Machinery
Operator Protective Structures (OPS)	Military Cabs and ROPS	Custom Applications
GUARDING		
Sweeps (limb risers)	Roof extension	Tank guards
Side, rear and door screens	Radiator guards	Engine guards
Escape hatch	Cylinder guards	Transmission/drive line guards
Excavator underhouse guards	Heavy duty doors	
ACCESSORIES		
Sound suppression	Isolation mounts	Safety grating (anti-skid plate)
Sliding windows	Polycarbonate windows	Hardware (latched, door handles, stoppers, etc)



# TESTING

## STRUCTURAL PERFORMANCE TEST STAND

To maintain compliance with rigid standards, our computer analysis determines the stress level of each section of the roll-over protective structure. Prior to release for manufacture, all ROPS prototypes are tested to failure on our Structural Performance Test Stand.



Our Structural Performance Test Stand is used to prove design and engineering necessary to meet rigid industry standards. Protective structures can be tested to ISO, SAE, OSHA, CSA, ANSI, WCB, BSI, CEN, and various other specific standards.

### TEST FACILITY SPECIFICATION:

- 300,000 lb (136,000 kg) horizontal and vertical capability
- Falling object drop
- Computerized instrumentation for data acquisition of applied loads and deflection
- Proof testing of mechanical apparatus such as lifting devices, load chains, cables, etc.

