

**Category:** Value Analysis/Value Engineering (VA/VE) & Cost Reduction

**Example:** Cost Savings through material substitution

**Situation:** Molded rubber seals used in automotive climate control. Seals installed over cooling and heating tubes passing through dash panel (“firewall”) to prevent engine compartment air from penetrating passenger cabin.



**Problem:** Virgin Rubber Seals (see #1 Example Seal) expensive and heavy.  
Secondary issue: Material would creep and lose sealing effectiveness.

**Action:**

1. Supplier presented new product “pillow” samples (see #2 and 3) made of polyurethane foam, recycled tire powder, and proprietary additives
2. Identified dash panel seals as possible target for replacement
3. Estimate of cost savings showed substantial opportunity
4. Preliminary testing done on temperature & creep resistance, odor, chemical resistance, etc., showed material viability
5. Supplier made test parts matching geometry for evaluation
6. Supplier and in-house testing found product matched or surpassed rubber material in performance
7. Rolling replacement of old material started in 2001

**Result:**

1. Plant-wide cost savings over \$250K annually over prior material
2. Product is 40% lighter, saving approximately one pound per vehicle
3. Material classified as a “green” material by using recycled tires
4. Material is cured after molding; excellent thermal creep resistance
5. Minority-owned company gained substantial business