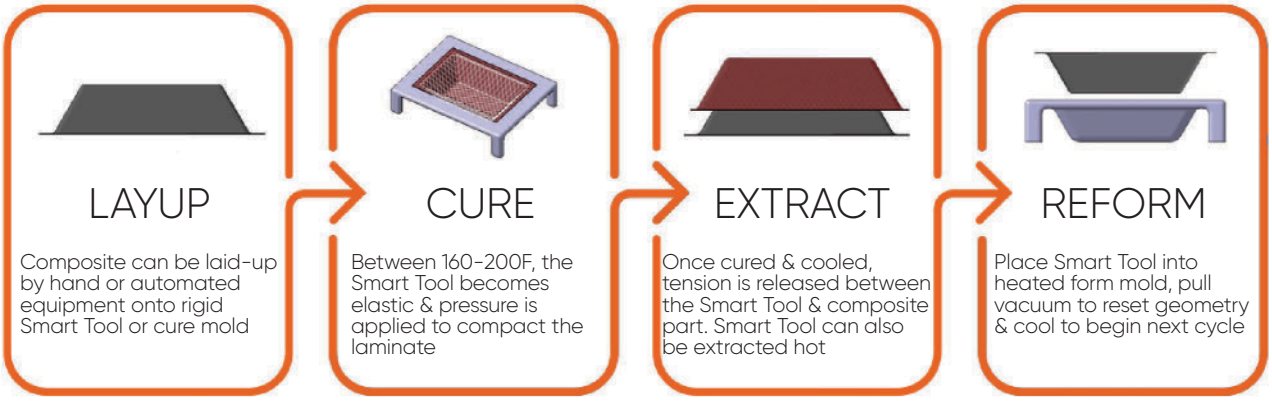
SMART TOOLING

PRODUCT OVERVIEW:
SMART TOOLS THAT ACT AS
CAULS



THE PROCESS:

Smart Tools that act as cauls are manufactured to the composite inner mold line (IML) plus bulk factor offset. Smart Tools are rigid at room temperature to provide a net shape, stable, lay-up surface for operators. After a release film is applied, composite material can be placed directly onto the Smart Tool.

During cure, our Smart Tools that act as cauls become elastic and translate compaction pressure to compact the composite part against the cure mold, which controls the outside mold line part geometry eliminating trapped air/volatiles and excess resin to improve part quality. Smart Tools that act as cauls can be removed from the cured composite part(s) at room temperature, if not physically trapped, or heated above their activation temperature and removed in the elastic state. After demold the Smart Tool is then heated, reformed, and reused.

Smart Tools allow composite material to be laid up on the male Smart Tool and cured, eliminating the need to layup into angular female cavity cure molds that are prone to bridging and results in composite part porosity and resin rich areas.

FEATURES & BENEFITS:

- Reduced Labor Hours
- Improved Quality
- Higher Throughput
- Lower Consumable Cost
- Formable
- Reuseable
- Low Force Extraction
- Enables Unitization
- Clean Process

COMPATIBLE WITH:

- Hand Lay-up
- Automated Fiber Placement (AFP)
- Injection Molding
- Autoclave Cure
- Oven Cure
- Heated/Cooled Molds
- Heated Press
- Automation

SPECIFICATIONS:

- Maximum Cure Temp: 375°F (190°C)
- Reforming Temp: 200°F (95°C) - 250°F (120°C)
- Specific Heat: 110 J/Kg-K
- Density: 1.13 g/cc

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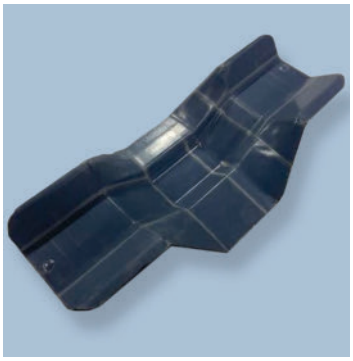
WHY SMART TOOLING?
Ensuring Success of Complex Composites

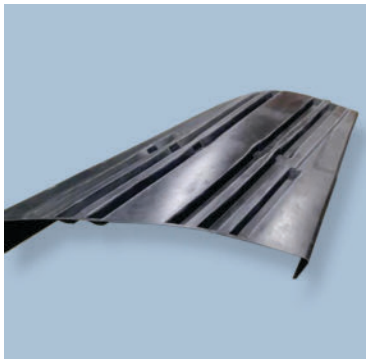
Smart Tooling offers more than just tooling. We offer total solutions that ensures successful manufacturing of your composite part. Those solutions include custom tooling engineering and design, fabrication of molds, fabrication of Smart Tools, manufacturing of the initial composite part(s), custom standard operating procedures, onsite start-up support and training, and more.

Fourtune favors the bold; it's time to move on from traditional tooling methods and start manufacturing with Smart Tooling. Let's make a sucessful complex composite, together.

EXAMPLES:
SMART TOOLS THAT ACT AS CAULS



A multi-faceted Smart Tool caul with PTFE coating to aid in release from cured composite part.



Large Smart Tool acting as a caul for reinforced wing structure using dry carbon fiber and VARTM infusion

Smart Tool Caul for acute angle composite fairing enables layup on male Smart Tool versus in female cure mold

READY FOR THE BENEFITS OF SMART TOOLING?
LET'S MAKE A SUCCESSFUL COMPOSITE PART

www.smarttooling.com 937.912.3250 contact@smarttooling.com