Technalysis ®

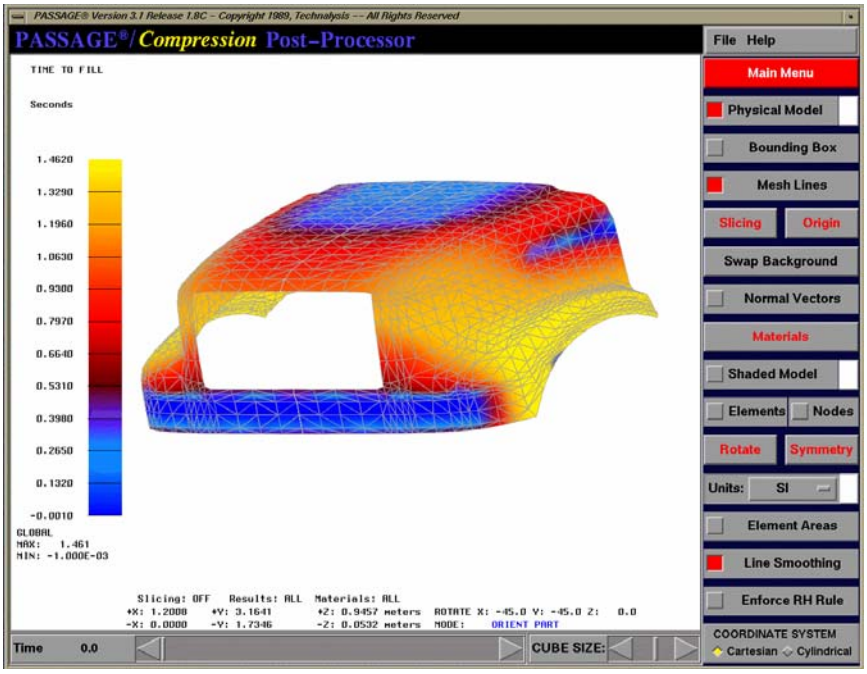
PASSAGE®/COMPRESSION

OVERVIEW

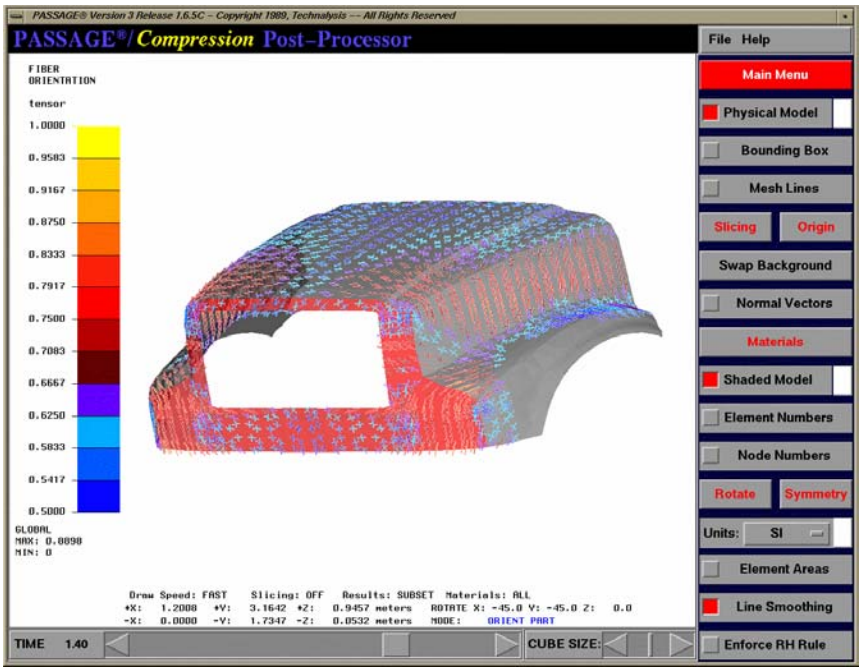
- **PASSAGE®/COMPRESSION** software is a Finite Element program for the mold filling simulation of complex three-dimensional, thin-walled parts.
- Flow models include: Barone-Caulk hydrodynamic friction and generalized Newtonian fluid to simulate the non-isothermal filling of SMC, BMC, and glass; fiber orientation for SMC and curing kinetics for thermosets.
- A high-pressure in-mold coating simulation option is also available.
- A user-friendly preprocessor allows mesh generation and capability to accept externally generated meshes with interactive entry of process conditions and numerical control parameters.
- Results are viewed with an interactive post-processor that features dynamic rotation and zooming animation of results, and viewing options for color contour and vector plots.

APPLICATIONS

- **Structural Components for Automotive & Aerospace Applications**
- **Home and Consumer Products with Plastic Components**
- **Glass**
- **Composites**



Filling Time Contours of a Compression Molded Truck Hood



Fiber Orientation of a Compression Molded Truck Hood

PASSAGE®

- **PASSAGE®** software is a collection of finite element programs for flow, heat transfe and related analyses in 3-D geometries.
- **PASSAGE®** software consists of the following stand-alone programs:
- **PASSAGE®/DUCT** flows through complex passages.
- **PASSAGE®/WHEEL** flows through rotating/stationary blade passages.
- **PASSAGE®/*Power*CAST** casting processes.
- **PASSAGE®/SYSFLOW** one-dimensional simulation of flow networks.
- **PASSAGE®/FreezeDrying** primary and secondary freeze-drying modeling using coupled mass and heat transfer analyses.
- **PASSAGE®/COMPRESSION** compression molding analysis of thin-walled plastic parts.
- All programs are supported by pre-processors for geometry, mesh, flow/process conditions definition; and post-processors for color results display as x-y graphs, vector and contour plots.
- Application areas are widespread in automotive, fan/ HVAC, appliance, aerospace, equipment and pharmaceutical /chemical/food industries.

FEATURES

- Isothermal and non-isothermal analyses.
- Hydrodynamic friction model.
- Generalized Newtonian material models.
- Fiber orientation prediction.
- Post-filling curing analysis to determine the gel time.
- Orthotropic mechanical property prediction.
- Ability to interface with anisotropic stress analysis programs for warpage and structural integrity of parts.
- Mesh generator, and accepts meshes from other structured or unstructured mesh generation programs.
- Boundary and process conditions entered interactively for all types of meshes, including the placement of initial charge patterns.
- Runs on most UNIX workstations and supercomputers.
- **PASSAGE®/COMPRESSION** software was developed and is offered exclusively by Technalysis.

BENEFITS

- **PASSAGE®/COMPRESSION** software can minimize the cost and time of traditional prototype building and testing, thus shortening product design cycles.
- Designs can be analyzed and modified on the computer before expensive and time consuming design decisions are finalized.
- Technalysis offers software customization of **PASSAGE® /COMPRESSION** software to meet specific customer needs.

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