



## American Composites Manufacturers Association – Fire Committee

### Case History: Architectural Applications Involving Fire Performance

By filling in the following details about the application of your products and/or services, you will help the Fire Committee define viable market areas and give ACMA’s public relations firm the facts that could lead to a case history article in a trade magazine.

Please return this form to: Nicholas A Dembsey, Fire Committee Chair, [ndembsey@wpi.edu](mailto:ndembsey@wpi.edu); John Busel, Director Composites Growth Initiative, [jbusel@acmanet.org](mailto:jbusel@acmanet.org); and Doug Barno, [dsbgroup@alltel.net](mailto:dsbgroup@alltel.net).

*Your name:	Aram Mekjian	*Title:	President
*Company:	Mektech Composites Inc	*Phone:	201-666-4880
*Address:	40 Strawberry Hill Road	*Fax:	201-666-4303
*City:	Hillsdale	*State:	NJ
*Email:	mekmail@prodigy.net	*Zip:	7642
* must be completed			

Name of product involved: Helipad installed on the roof of Cooper Hospital in Camden, NJ  
(Attach available brochures, fact sheets, and other information.)

#### Customer/End User Info

*Contact person:	Mark Heim	Title:	
Company:	HSC Builders & Construction Managers	*Phone:	610-280-0200
Address:	304 New Mill Lane	Fax:	610-280-7837
City:	Exton	State:	PA
*Email:		Zip:	19341

\*Describe customer’s business (including principle products manufactured at this location, unusual equipment designs or operating conditions, etc.)

HSC had a contract to build a Helipad on the roof of Cooper Hospital in NJ. Normally, it would be made of steel. However, it would have been too heavy, requiring reinforcing the roof. An alternative was aluminum. However, the military objected, saying if a helicopter crashed, the burning fuel would quickly melt and burn the aluminum helipad

\*Describe customer challenge  
(problem needing correction, solutions tried before, materials used, area of operations, applications affected, etc.)

HSC assigned Hardcore Composites of Newcastle, DE (now defunct) to produce a composite Helipad - a first for composites, to avoid the cost of reinforcing the roof. The only composite that would qualify was Phenolic it had passed the Jet Fire Test and the ASTM E-136 Non-Combustibility Test.

\*Describe your solution (product features & benefits; when put into service; approvals required)

Hardcore used Cellobond Phenolic resin provided by Mektech Composites to use the VARTM process to produce panels (some measuring 16' x 26' x 8") with a 6.5" Isocyanurate foam core. Phenolic composites have excellent Fire / Smoke properties and high temperature resistance. Under the coating on the surface of the panels, electrical wiring was placed to melt ice and snow in the winter. Phenolic panels can take the heat. The low viscosity of the resin (300 cps) and delayed action catalyst allowed the panels to be vacuum infused resulting in panels having 70% glass and 30% resin - no fillers or additives required - to produce light weight panels with a high strength to weight ratio.

\*Describe results to demonstrate that composites “win” versus alternative materials  
(*advantages gained, such as reduced maintenance, increased production or quality, cost savings, improved safety and/or environmental — see examples below*)

Light weight Phenolic composites having excellent Fire / Smoke properties were able to meet the needs to produce a light weight composite Helipad that would meet the stringent Fire Codes of the military.

\*Are there any photographs, charts, or graphs available for use in the story?

Yes     No    (“X” fills; spacebar clears)

\*Has customer given permission to use their name in story?

Yes     No    (“X” fills; spacebar clears)

\*Will customer allow us to quote a management representative in the story?

Yes     No    (“X” fills; spacebar clears)

#### **GENERAL BENEFITS EXAMPLES**

- Fire Performance
- Light weight – reduced weight
- High strength
- Corrosion resistance
- Weather resistance
- High impact strength
- Radar transparency
- Non-magnetic
- Non-conductive
- High strength-to-weight ratio
- Design flexibility
- Energy efficient
- High dielectric strength (insulator)
- Dimensional stability
- Small to large part geometry
- Customized surface finish
- Environmentally sound or safe
- Others

#### **RESULTS MESSAGE EXAMPLES**

- Rapid installation – modular components, easier handling because it is lightweight
- Reduced or Low maintenance – no painting because color is molded in
- Reduced inspection – easier to inspect
- Parts consolidation – faster assembly and reduced installation time
- Lower operator fatigue
- Affordable
- Cost savings / cost effective– lower installed or life-cycle costs
- Reduced personal safety – less on the job injuries
- Long term durability – extended service life
- Influenced styling/design – sculptural form providing design versatility
- Increased performance
- More attractive, functional, durable
- Reduced environmental risk - leading to reduced disposal issues
- Others