

# Celceram

## for PVC Applications

**THERE IS COMPELLING INFORMATION ABOUT THE USE OF ALUMINOSILICATE SOLID SPHERES TO REINFORCE RIGID PVC FOAM COMPOSITES.**

### Summary of Advantages:

1. Composites containing just 6 phr of fly ash showed a 24% improvement in tensile strength
2. Incorporating just 6 phr of fly ash led to a 95% increase in flexural strength
3. The thermo-mechanical properties measured by DMA indicated a steep increase in viscolastic properties of composites reinforced with fly ash
4. Scanning Electron Microscopy (SEM) confirmed that fly ash particles were mechanically interlocked in the PVC matrix with good interfacial interaction with the matrix
5. Other studies have shown that by using fly ash in PVC the LOI is increased and can help enhance Flame Retardant Properties

Celceram® products are AluminoSilicate Solid Spheres that are derived from coal combustion at electrical power plants and are deemed a 100% recycled material. Celceram® is produced by Eco Material Technologies and can be classified to fine particle sizes for optimal use in Plastics, Rubber and coatings applications.

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**Reference:** Comparative Analysis of Rigid PVC Foam Reinforced with Class C and Class F Fly Ash

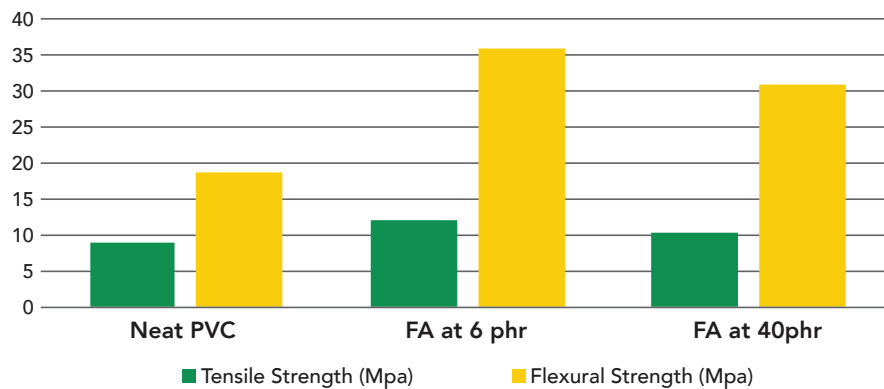
**By:** Parisa Khoshnoud, Subhashini Gunashekar, Murtatha M. Jamel, Nidal Abu-Zahra, Materials Science and Engineering Department, University of Wisconsin-Milwaukee, USA

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MECHANICAL PROPERTIES OF PVC FOAM COMPOSITES

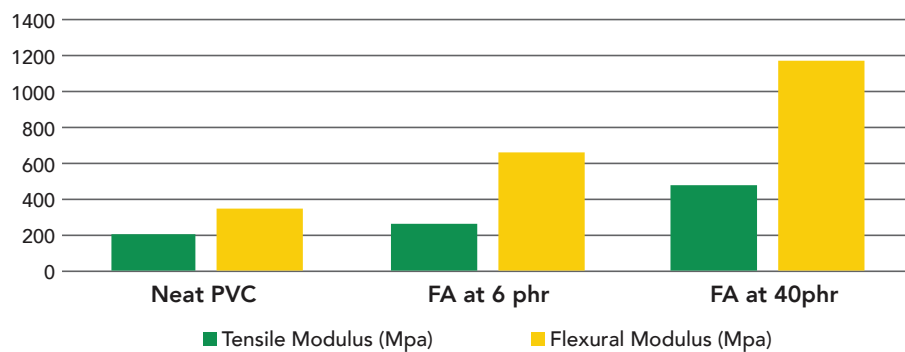
Sample	Tensile Strength (Mpa)	Flexural Strength (Mpa)
Neat PVC	9.06	18.54
FA at 6 phr	12.05	35.83
FA at 40 phr	10.26	30.94

Mechanical Properties of PVC Foam with Fly Ash



Sample	Tensile Modulus (Mpa)	Flexural Modulus (Mpa)
Neat PVC	213.35	353.6
FA at 6 phr	257.52	652.52
FA at 40 phr	483.14	1163.3

Mechanical Properties of PVC Foam with Fly Ash



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