



Fermilab

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SUBJECT: Recent Fiberglass-Epoxy Thermal Contraction Measurements

The measurement of thermal contraction between room temperature and 77K for five fiberglass-epoxy composites has been completed. All specimens were tested in the manner described in Fermilab TM-974. The results are listed below:

Material	Direction Measured	$\Delta L/L$
G11-CR Manufactured by Spaulding Solid Plate Specimen (Labeled G11-CR)	Perpendicular to fibers (L = 0.383")	0.00544
G10-CR Manufactured by Westinghouse Solid Plate Specimen (Labeled 56G12AA)	Perpendicular to fibers (L = 0.401")	0.00624
Low Creep Material Manufactured by Westinghouse (Labeled H25662) Solid Plate Specimen	Perpendicular to fibers (L = 0.401")	0.00503
Scotchply 1002 Unidirectional* Solid Plate Specimen (Labeled 1003 1-6)	Likely parallel to fibers (L = 0.398")	0.00144
Quartz filled G-10 CR Manufactured by Spaulding Stack-up of sheets (Accuracy \pm 10%)	Perpendicular to fibers (L = 0.640")	0.00376

*Actually, Scotchply added two layers of glass cloth in the crossply direction. Each was the second layer on opposite sides of the plate.

MM:sjj